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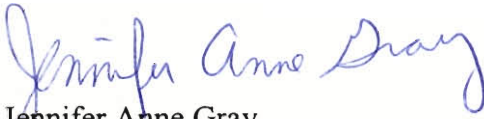
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December 18, 2001

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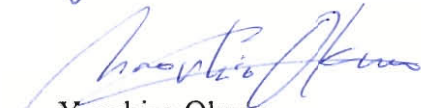
Enclosed is our report entitled "Analysis and Development of NSPE Mentoring Programs." It was written at the National Society of Professional Engineers Headquarters during the period October 27th through December 19th, 2001. Preliminary work was completed in Worcester, Massachusetts, prior to our arrival in Washington D.C. Copies of this report are simultaneously being submitted to Professor Richard Sisson and Professor Brigitte Servatius for evaluation. Upon faculty review, the original copy of this report will be catalogued in the Gordon Library at Worcester Polytechnic Institute. We appreciate the time that you and the Mentoring Team have devoted to us.

Sincerely,



Jennifer Anne Gray

Jennifer Anne Gray



Yasuhiro Okuno

Yasuhiro Okuno



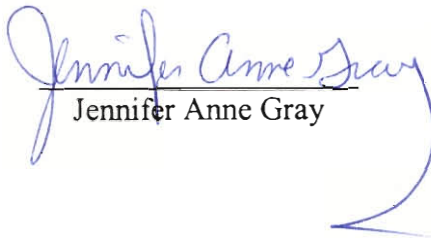
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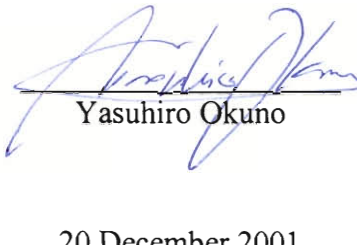
Analysis and Development of NSPE Mentoring Programs

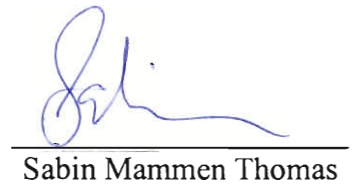
An Interactive Qualifying Project Report
Submitted to the Faculty of
Worcester Polytechnic Institute
In partial fulfillment of the requirements for the
Degree of Bachelor of Science

Sponsoring Agency: National Society of Professional Engineers

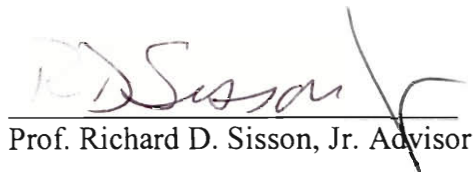
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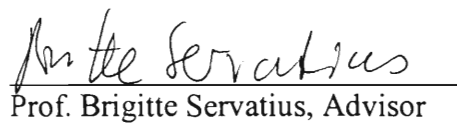

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Abstract

A system to integrate the four mentoring programs at National Society of Professional Engineers (NSPE) has been designed and tested based on the results of surveys administered to the program participants and general NSPE members. The key features of this system, named the Engineers' Café, are centralized online communication for program participants as well as general public, program participant feedback collection and user activity monitor. In addition to this system, procedures for a centralized participant application, program expansion and system upgrade were designed. A process for the complete implementation and marketing of the system has also been developed and documented within this report.

Authorship

Each team member contributed equally to the completion of this project report. The Literature Review was primarily divided into three parts. The initial sections that dealt with the history of mentoring and its influence as well as the sections describing methods for data analysis were authored by Jennifer A. Gray. Sabin M. Thomas authored the sections dealing with the evaluation of mentoring as well as topics in program and departmental integration. The concluding sections about the aspects of designing and implementing a web application were written by Yasuhiro Okuno.

The Methodology, Results and the Suggestions sections of this report were written with two main divisions in mind. The web development aspect of these sections were authored by Yasuhiro Okuno and Sabin M. Thomas whereas the (surveys and interviews aspect) data collection and analysis sections were authored by Jennifer A. Gray.

Acknowledgements

This project was completed thanks to the assistance of many people. Our liaison, Jeanne Iglesias, played a crucial role in ensuring that we had a conducive work environment that helped us accomplish and exceed our project goals. Chris Hanson, Mary Maul and Erin Garcia were instrumental in assuring us the highest degree of comfort; we thank them for providing us with their guidance, knowledge and assistance.

We would also like to thank other staff members at the NSPE who contributed in some way or another to the success of our project – Stefan Jaeger, David Seigel, Walter Bailey, Alan Thompson, Sally Brasse, Larry Bory, David Krosnick, Brian Bauerle, Jennifer Pugh, Marcia Prichard, Linda Lindsay and Michelle Ledger.

Finally, we would also like to acknowledge the services of the folks at *Dutch Touch* for their lifesaver coffee and warm welcome every morning.

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EXECUTIVE SUMMARY

It is recommended that the National Society of Professional Engineers (NSPE) fully utilize the system (Engineers' Café) to integrate the four mentoring programs at the NSPE. The implementation of this system will provide a centralized program complete with centralized online communication for program participants as well as the general public, program participant feedback collection, user activity monitor and an automatic evaluation report function. The system is intended to improve communication between mentoring programs, members, state societies, and program participants while making the program more cost effective and marketable.

The Engineers' Café provides centralized online communication for program participants as well as non-member visitors. Centralizing the communication will allow members to see all the available programs at once and at the same time provide the visitors with information on all the programs offered at NSPE. Marketing the mentoring programs will also be more efficient with one centralized system to advertise instead of four.

The Engineers' Café also collects program participant feedback in the form of communication logs. The feedback from the mentors can be collected through the Engineers' Café to monitor communication trends between the mentor and mentoree. This constant feedback can be used to analyze the

individual relations of mentors with mentorees as well as their preferred **method** of communication.

The Engineers' Café monitors activity in each forum. **More specifically, it** monitors individual programs and categories within the fora. This feature will allow the NSPE staff to capture the trends and interests of the members and the general public. By understanding these interests, the NSPE can formulate an effective marketing plan for the future.

Implementation of a uniform program participation application (both online and offline) is also recommended. Having a centralized application procedure will improve efficiency in application processing and will help market the mentoring programs. Also, by creating a central application, the NSPE will be able to follow up on the program participants to obtain feedback about their experience with the Mentoring programs. This information can be analyzed further to improve the mentoring programs.

By implementing the Engineers' Café system with the upgrades as suggested in this project, processes for marketing and collecting vital feedback information will be greatly improved.

1. INTRODUCTION

The National Society of Professional Engineers (NSPE), based in Alexandria, Virginia, is an engineering society that represents individual engineering professionals and licensed engineers across all disciplines. As part of the services offered to its members, the NSPE has four separate mentoring programs. These programs include the Mentoring/ Licensure Program, Career Transition, On-line Fora and Engineers in Government Mentoring Program. The goal of this Interactive Qualifying Project (IQP) was to coordinate the integration of these numerous mentoring programs into a centralized operating system.

The NSPE sponsored us to integrate the present operation of their mentoring programs in order to increase efficiency. The objectives for this project, as mentioned by the NSPE, included coordinating with mentoring program participants to determine their individual goals and needs; to creating a web based application to collect and track data, and establishing interactive communiqué; to develop a model for how qualified mentors and mentorees can effectively work together; to maintain online fora and other mentoring inquiries; to evaluate the progress of each program and the criteria for its effectiveness; to investigate ways to effectively market NSPEs mentoring programs and to identify additional resources for mentors and mentorees.

To meet our project goal, surveys and interviews of current program participants, current NSPE employees and state society executives were

conducted to develop an understanding of the current system. Based on this analysis, an evaluation protocol was developed to be used for the mentoring programs. Once the evaluation protocol had been implemented, **relevant feedback** was recorded in a database. A database of mentors and mentorees including demographic information, careers, individual goals and needs and their participation in NSPE sponsored programs was built. The integration of the mentoring programs was achieved with the development of an Online Forum software that bridged the separation between the programs.

This project will ultimately be used to find a relationship between an integrated mentoring program and recruitment of new NSPE members. These findings will be beneficial to prospective members as well as current members, specifically those interested in the mentoring programs.

The NSPE will use our operation model initially in moderation for evaluation purposes. Upon its success, this model will be implemented to the target mentoring programs resulting in the restructuring of their current system.

Our project uses technology to enhance communication among program participants and aid the restructuring of present operating standards to form an integrated operating process.

2. LITERATURE REVIEW

The first section describes the NSPE organization and its mentoring program. In the second section, the history of mentoring practice and also the different types of mentoring programs are discussed. In 3rd, 4th, 5th and 6th sections, these questions are asked: how does one evaluate the health of the mentoring program? How does one create an effective mentoring model? And how does one combine multiple mentoring programs into a single operational unit?

The last part of the literature review deals with different Information Technologies that may help in integrating mentoring programs as well as enhancing the communication among the program participants and program providers.

2.1. NSPE

The National Society of Professional Engineers is an engineering society that represents individual engineering professionals and licensed engineers across all disciplines (NSPE, 2001). This organization serves over 60,000 members and the public through 53 state and territorial societies and more than 500 chapters. The NSPE was founded in 1934. It strengthens the engineering profession by promoting engineering licensure and ethics, enhancing the engineer image, advocating and protecting the Professional Engineer's (P.E) legal rights at the

national and state levels, and publishing news about the profession and providing continuing education opportunities.

The NSPE has different member categories, which are outlined as follows (NSPE, 2001):

- Licensed Member
Engineers licensed (P.E designation) in a US state or holders of an equivalent licensure from another country.
- Member
Engineer Interns (EIs)/Engineers in Training (EITs) or holders of an equivalent credential from another country. This category also includes graduates from Accreditation Board for Engineering and Technology (ABET) accredited engineering programs or the engineering equivalent.
- Student Member
Students in an ABET- accredited engineering programs or an engineering or pre engineering program that can lead to licensure.

The NSPE is also composed of a collection of specific area groups of members, which are referred to as Practice Divisions (NSPE, 2001). The following is a list of the Practice Divisions of the NSPE:

- Professional Engineers in Construction (PEC)
- Professional Engineers in Industry (PEI)

- Professional Engineers in Government (PEG)
- Professional Engineers in Education (PEE)
- Professional Engineers in Private Practice (PEPP)

These practice divisions run their mentoring services separately targeting different membership interests. This separation is what led to the disjoint mentoring programs at NSPE. Members, who were enrolled in the mentoring program sponsored by one Practice Division were not made aware of programs within other Practice Divisions. This project focuses on settling this disparity by integrating all the mentoring schemes offered by the various Practice Divisions, into one marketable and manageable program. The following is an outline of the various programs offered by the different NSPE Practice Divisions.

The NSPE primarily offers four types of mentoring programs, which are (NSPE, 2001):

- Mentoring/ Licensure

This mentoring program is sponsored by the Professional Engineers in Construction (PEC), which is a Practice Division of the NSPE. This program targets those members wishing to take the Principles and Practices exam for the P.E designation. Entry into such a program is made possible through “Request for Mentor” forms, which are then viewed by the Practice Division Manager. He/she then assigns an appropriate mentor

based on certain criteria such as location, age, discipline, etc.

- Career Transition

This is a coaching/mentoring program that is sponsored by the Professional Engineers in Industry (PEI) Practice Division. This program is targeted toward engineers who are experiencing some kind of transition in their professional lives, such as job downsizing, relocation, reorganization, early retirement or employer dissatisfaction. This program also helps members with resume preparation, personal coaching, etc. These sessions take place at the NSPE Regional meetings and also will take place during a two-day seminar to be held in the Fall of 2002.

- Online Fora

The NSPE also maintains an online forum on its web page, which is available to all members. This forum welcomes questions about the profession, licensing or other engineering issues. Volunteers are recruited to monitor the discussion boards and inquiries. This forum has issues relating to all five of the Practice Divisions.

- Mentors in Government Mentoring Program

This mentoring program was started by the Professional Engineers in

Government (PEG) Practice Division which hosts an online mentoring assistance program where users, including engineering students, can get first hand professional development expertise and career **guidance**.

New proposed mentoring programs listed above will be integrated into a single centralized program during this project. In order to accomplish the task, the four program goals and needs need to be examined, and a program that will integrate all purposes of those programs was created.

2.2. Mentoring

Mentoring programs are present in every aspect of an individual's professional and/or personal life. There are many mentoring programs for minorities, most careers, and within many companies. Tom Brown describes mentoring as, "the process in which an experienced veteran helps to shape or guide a newcomer" and "true mentoring is an extended, confidential relationship between two people who have mutual personal growth – and corporate success – as common goals" (Brown, 1990, p.18). Another definition is: "A mentor is someone who helps another person become what that person aspires to be" (Gladstone, 1988, p.23). According to Moore, "The realities of mentoring and networking, however, are more complex than popular wisdom suggests. Both kinds of relationships should be examined more critically, for although both can

be valuable in developing your career, each has limitations and even potential liabilities that must be recognized” (Moore, 1986, p.54). Through mentoring one can begin to get contacts with more established professionals.

Mentor is a noun for “wise, loyal advisor, a teacher or coach.” The word comes from a Greek Myth character “Mentor” who is the loyal friend and advisor of Odysseus, and teacher of his son, Telemachus.

2.2.1. History

Ever since 1970 mentoring has been gaining popularity (Wilson, 1988, p.8), everywhere from inner city streets, to classrooms, to the most successful corporations. Mentoring at Work (Kram, 1950) was first written in 1950 and then republished as part of the Organizational Behavior and Psychology Series. The new edition included studies that were carried out in the 1970’s to “focus on understanding the nature of mentoring in organizational settings” (Reitz, 1985, p.3). The nature of the research done on mentoring has shifted from the domain of human resource management to the domain of organizational behavior (Applebaum, 1994, p. 6). Since the 1970’s the job market has become a global arena. Networking is considered to be a crucial ingredient of success in any professional career as there are many advantages to be gained by its practice, including information exchange, collaboration, career planning and strategy making, professional support/encouragement, and access to visibility and upward mobility (Travers, 1997, pp. 61-67). Other types of mentoring programs include

those for minorities, women, and young people. Mentoring programs are so important for women, for example because everyone experiences their careers differently because of who they are. There is certain advice that a **male mentor** could not give a woman about the workplace. The advice that a woman can get from another woman is very helpful (personal interview, Blaisdell, September 17, 2001).

Mentoring scheme is used throughout the education of youth in education. According to the National Mentoring Center , there are about 660 total participants and 697 technical assistants participating in the mentoring program for youths (National Mentoring Center Two-Year Activity Report, 2000, p.1). This program's main objectives are: to improve academic and cognitive competence. Data clearly show many youths have a desperate need for positive role models. The most compelling data describe changes to the American family structure: the number of single-parent homes has radically increased, as have two-parent working families. More preventive care is needed, as are support networks to fill the void left by busy or absent parents. Other statistics are equally troubling: each day in the United States, 3,600 students drop out of high school, and 2,700 unwed teenage girls get pregnant (Petersmeyer, 1989, p.5). Another startling study is the effect of mentoring on college attendance (Figure 1).

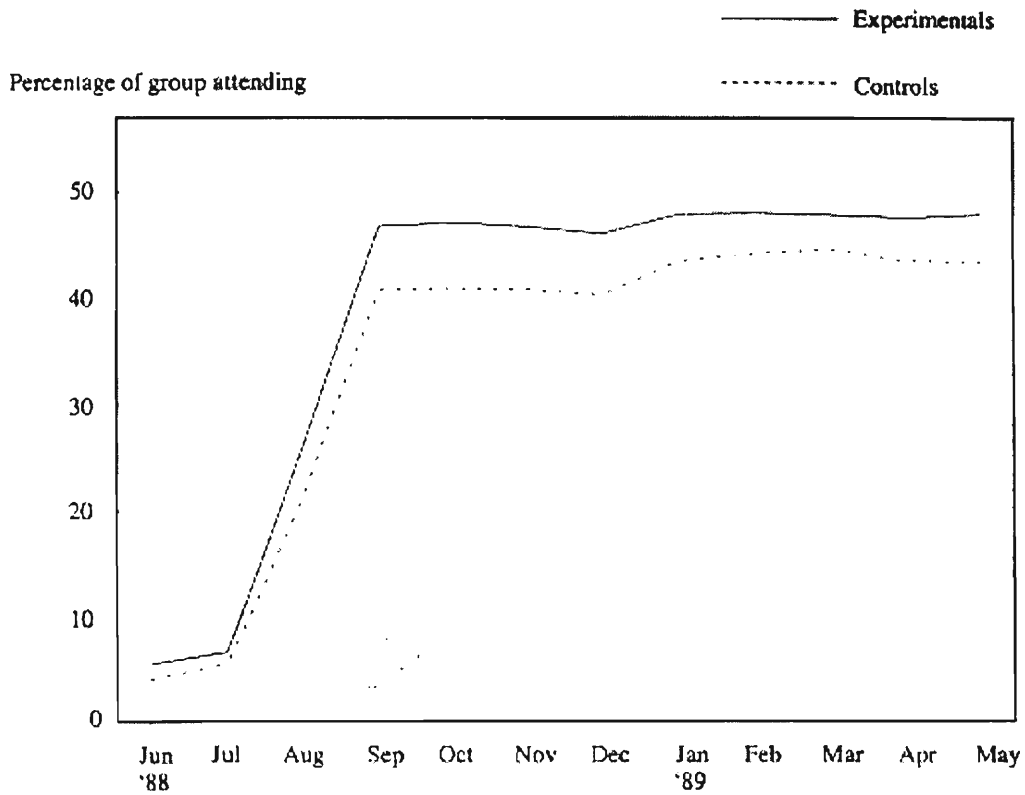


Figure 1 – Effects of the Career Beginnings program on college attendance: Monthly attendance at 2- or 4-year colleges, 1988-89

(Cave, 1990, p.8)

NOTE: The people in the study were assigned at random to either an experimental group or a control group. Experimental were eligible for Career Beginnings, which included a mentoring component; controls were excluded from Career Beginnings but were free to participate in other services available in their schools and communities (Cave, 1990, p.8).

Figure 1 shows that the more students with mentors (shown in a solid line) attended college compared to the students without the mentoring (shown in dotted line) and shows that the mentoring program does affect the behavior of students.

2.2.2. Career Mentoring

“Few mentoring programs have actually succeeded” according to one source (Matthes, 1991, p.23), however the success of a mentoring program is a complicated matter to assess just as mentoring is a complicated subject to define. According to Brown, “some observers suspect that ‘forced pairing’ violates the true spirit of mentoring” (Brown, 1990, p.18). There are many different types of mentoring, which contributes to the difficulty of pinning down one particular definition.

There are two main types of mentoring: formal mentoring and informal mentoring (Gibb, 1994). An increasing number of corporations are implementing formal mentoring programs. There are many different formats for professional mentoring programs depending on the participants’ age, gender, areas of interest, and other factors. One-on-one mentoring is very popular and is more personal. Cluster mentoring is a unique format that works for many groups. The layout is as follows: there are two or three professions of different stages in their careers who are the mentors and two or three mentorees that are on the same level (personal interview, Blaisdell, September 17, 2001).

2.2.3. Mentoring in NSPE

The four NSPE mentoring programs, which were outlined in Section 2.1. NSPE, resulted from the growing awareness of the benefits of mentoring. A current method of communication between the mentors and mentorees is the Internet, taking into account that the Internet has no time or distance limitations. In light of this, two of their mentoring programs are done primarily via their website (www.nspe.com). These programs are the 'Ask a P.E' online forum and the 'Mentors in Government' online forum. The four mentoring programs currently offered by the NSPE are:

- Licensure / Mentoring

This program is sponsored by the Professional Engineers in Construction (PEC) Practice Division as outlined in Section 2.1 of this report. The mission of the PEC Mentoring/ Licensure program is to: "Promote the competent, ethical and professional practice of engineering and to provide education, career development, networking opportunities and other benefits to engineering professionals and students: Professional Engineers in Construction (PEC) encourage and promote professional registration within the construction industry by maintaining a mentoring program designed to provide licensure process guidance to individuals with construction experience whose goal is to become licensed as a Professional Engineer (P.E.)". This mission is in accordance with the

NSPE Strategic Plan goals 1 and 3.

The target mentorees for this program are those engineers that are working towards obtaining their Professional Engineering License. These engineers are mostly those who have completed their Engineers in Training (EIT) exam, now called the Fundamentals of Engineering (FE) exam and are working towards the Professional Engineers (PE) exam.

PEC produces a '*Guide for Mentors*' and a '*Guide for Mentorees*'. This guide provides a listing of resources and articles available online which are beneficial to this program.

- Career Transition

This program as described in Section 2.1 is administered by the Professional Engineers in Industry (PEI) Practice Division. The goal of this mentoring program is to provide services that would benefit engineers going through career changes, which is parallel with the overall NSPE strategic plan goal # 3 which is :“Provide education, career development, networking opportunities and other benefits to engineering professionals and students”. The target mentorees are usually recent college graduates that feel a need for coaching about employment opportunities.

This mentoring program has an online resource page which provides a listing of useful material that can be used by both mentors and mentorees involved in this program. PEI also sponsors seminars in 5 locations

(Atlanta, Houston, Boston, Washington, Chicago) that address career related issues such as

1. Self – assessment and Skills Identification
2. Resume Development
3. Job Search Strategies
4. Interview Training
5. Campaign Management
6. Networking Skills

PEI also offers services such as counseling with a professional firm and the Career Asset Manager (CAM) tool to help in career organization. PEI is also planning to offer access to ExecuPlanet.com, an internet portal to career related sites and information. The following are other career counseling organizations suggested by PEI:

1. BakosGroup.com
2. Brilliantpeople.com
3. Right Management Consultants
4. National Engineering Search
5. IEEE-USA Career Transition Workshop

PEI also suggests a couple of self-help websites and books that prove to be valuable resources for engineers partaking in this program. PEI provides a handbook for mentors that details items such as common problems faced

in a mentor/mentoree relationship and also provides guidelines on how to approach such problems.

- Mentors in Government

This mentoring program was initiated by the Professional Engineers in Government (PEG) Practice Division and tailors its programs specifically to problems faced by engineers in government today. The mission of this program is parallel to the overall NSPE strategic goal #3 mentioned above. The process of applying for a mentor includes going online to a detailed list of PEG Mentors with email addresses listed. This enables anyone visiting this page to have direct communication with PEG mentors and also eliminates the paperwork delay that would arise from filling out applications. However, this makes tracking the number of people involved and the success of this program difficult.

- Online Fora:

NSPE has a number of online fora that are used to encourage interaction between mentors and people seeking help in the above three programs and makes use of the internet to provide added functionality and greater use. These fora are available at the NSPE website (www.nspe.org) under the 'Ask a P.E' link. There is the Young Engineers Mentoring Forum where students looking for guidance from experienced engineers can post questions.

Each of the NSPE Practice Divisions in Construction, Education, Government, Industry and Private Practice maintain their own individual fora. Certain new fora relevant to proceedings at various NSPE conventions such as the ‘Proposed PE Licensure Model forum’ are also posted.

2.3. Evaluation of Mentoring

The development and management of mentoring programs depends on evaluation that can provide a general sense of how well the program is able to meet its desired objective and also provides feedback about how it can be improved (Gibb, 1994). Given this focus for evaluation, the following three aspects of mentoring need to be considered.

a. Immediate Mentoring Outcomes:

The measurement of how well the immediate goals at the end of the mentoring relationship were met is evaluated. Have you achieved your end goals at the end of the mentoring programs? What is the value of mentoring in terms of improving the knowledge and skills of the upcoming engineer? What is the right balance between different skill areas where outcomes can be expected? These questions are the focus of these short-term outcomes of the mentoring programs.

b. Contribution of Mentoring to the Broader Initiative:

This aspect of mentoring evaluation defines the contribution that mentoring makes to the success of the broader initiative in the context of long term goals, such as promoting good practice and ethics in the workplace and also good partnerships between societies and industry.

c. Mentoring Costs:

This aspect of mentoring evaluation determines the costs and investments of effective mentoring as a method of helping engineers going through periods of changes or requiring certification assistance. A specific example in this context would be assessing the need of 'group' mentoring rather than individual mentoring in order to make maximum use of limited resources.

2.3.1. Methods of Evaluation

Evaluation should be carried out so that all the above aspects of mentoring will be accounted for. These methods also focus on further improving the quality of mentoring. The following are methods used for the mentoring evaluation (Gibbs, 1994).

a. Interviewing participants

Interviews are the best way of collecting information about an individual's mentoring experience (Gibbs, 1994). The following points should be noted when carrying out an interview.

1. Consider the experiences of both the mentor and the mentoree. Many programs depend on obtaining information from mentors who only give their half of the story.
2. Obtaining information from individual interviews or from talking with groups of mentors/mentorees can both provide valuable information.
3. When questioning people about their experience of mentoring, questions should be directed at the following areas:

- a. Factual

What has the mentoring relationship involved? For example, the frequency and the duration of the meetings.

- b. Processes

How do the participants describe their experience of mentoring?

What is the balance of psychosocial outcomes, learning outcomes and career outcomes?

- c. Affective

What are the participants' feelings about the mentoring relationship? Has it been worthwhile? How do they describe the other person? Has mentoring helped them to meet the objectives of the wider initiative?

The style of interviewing is also important. A useful distinction can be made between two types of interviewing namely, *structured* and *reflexive* interviewing (Gibbs, 1994). Structured interviewing involves asking the same set of questions to all participants which would help build an evaluation of the whole scheme. However, this mode of interviewing may not allow participants to explain their particular experiences fully. In *reflexive* interviewing, the questions asked depend on issues that the interviewees raise rather than the set of predetermined questions. This can help assess individual experiences. However, such interviews do not yield information that is easily generalizable.

b. Surveys

Surveys also provide systematic descriptive evidence about the operation of mentoring schemes (Gibbs, 1994). They can help identify whether the expected benefits of mentoring are linked to achieving the objectives of the long-term goals. Surveys are relatively easy to administer and can also provide information

that is easier to analyze than information from interviews. Surveys can be designed for multiple-choice questions or for extensive essays describing their experiences.

One substitute for surveys could be a record of mentoring experiences (Gibbs, 1994). Such a record would be a structured form that the participants could complete following each meeting. The purpose of this record would be to record the individual's account of the meeting, in terms of discussion, achievements, agreed plans and feelings. Such forms could also prove to be a disadvantage as they could be politically bureaucratic and also prove to be a strain on the relationship.

c. Analyze Cases

Rather than attempt to monitor and assess all, or most, mentoring relationships to the same degree, a different strategy would be to identify key relationships and analyze them in more detail. Key relationships would be those where significant positive effects or problems were identifiable (Gibbs, 1994). Such relationships may be identified from low-level monitoring of the mentoring scheme, or from observations that may be made about individuals. Such an analysis of cases can provide information, that both assesses individual experiences and gives some grounds for relating the role of mentoring to the long-term objectives.

Using the above evaluation methods provides an analysis of the overall value of mentoring and also helps formulate the future strategy of the programs.

2.3.2. Balanced Scorecard Technique

This section of the Literature Review deals with a measurement based management technique that is used for evaluation of many organizational schemes. This technique is the Balanced Score Card technique and was developed in the early 1990's by Dr. Robert Kaplan (Harvard Business School) and Dr. David Norton (Balanced Scorecard Collaborative) (Arveson, 1998). This technique enables organizations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results. This technique will be considered for use as an added means of evaluating the current mentoring system in place. Key indicators that will constitute criteria for monitoring progress of these schemes will be decided during the project.

Another part of the project in which the Balanced Scorecard technique is valid for implementation is for identifying effective methods of marketing these mentor programs. This helps the monitoring of the performance of the current methods used for marketing and with this technique, one will be able to obtain an assessment of the effectiveness of the marketing strategy.

The Balanced Scorecard technique requires adequate **planning** to define appropriate goals, metrics and analysis procedures. Before a full in-depth study of obtaining metric, or key indicators in any organization is carried out, the following questions must be answered (Arveson, 1998).

1. What is the organization doing?
2. How well is it doing it?
3. How does the organization know how well it is doing it?
4. How can they demonstrate to others how well they are doing it?

The use of this technique will entail the following types of metrics (Arveson, 1998)

1. Strategic needs metrics

These include ways to assess the future needs related to the agency's general mission and sub-missions based on an analysis of the environment.

2. Mission effectiveness metrics

These include ways to assess health and viability of those missions that are going to be needed in the future.

3. Operational efficiency metrics

These include ways to define the quality of the current level of processes followed by the organization.

2.4. Model for Effective Mentor/ Mentoree relationship

This section discusses certain examples of mentor/ mentoree relationships that describe various expectations that a mentor should have for effective mentorship.

A study at the Institute of Management Certificate of Management came up with a list of qualities that an effective mentor must possess (Carter, 1994).

Good Mentors	Bad Mentors
Permissive not authoritarian Well informed Analytical	Too directive Opinionated Uninformed Dogmatic Negative
Commitment to training Commitment to development	Not aware of value of training No experience or interest in staff
Good communicator Good open questioner	Poor communicator Uses closed questions Poor listener
Good knowledge of organization	Knowledge limited to department
Can apply theory to practice	Not really well educated No real understanding of management theory
Well organized	Disorganized
Knowledge of value of action learning	Lacks clarity Insensitive to process
Good time manager, time devoted to role of mentor	Poor manager; always insufficient time for mentor role.

Table 1 – Qualities for effective mentoring

(Carter, 1994).

This study also resulted in the following list of criteria that qualified mentors should comply with (Carter, 1994).

- Identifies and reviews the objectives, culture and needs of the learner’s organization to facilitate learning opportunities.
- Communicates objectives and requirements of program to members of mentorees’ organization who will be involved.
- Establishes required level of support within the organization.
- Provides constructive assertive feedback to mentoree.

- Negotiates, oversees and reviews appropriate learning opportunities.
- Maintains appropriate records and documents.
- Creates and maintains clear agreement on practical framework of mentor, mentoree interaction.

An article by Tabbron, Macaulay and Cook on *Making Mentoring Work* (1997), defines a set of people that are not suited to making a mentoring relationship work well. They are:

- The fixer – these people are too self-centered and want to sort everything out by themselves.
- The bureaucrat – too rule bound and controlling to accommodate different approaches.
- The pleaser – mentoring involves confronting, not just having a cozy relationship.
- The talker – active listening and developing rapport are key components of successful mentoring.

2.5. Program Coordination and Integration

The main goal of this project is to successfully integrate the four different programs into a centralized, interactive and cohesive program to minimize redundancy in management of the programs. NSPE also believes that this

cohesive program will enable them to give better support to their mentors and improve the service's quality. To accomplish such reorganization, it is good to have a structured reorganization procedure to follow. Chandon and Nadler (2000, p.123) suggest a method called Breakthrough Thinking (BT) organization. BT is a "set of principles, techniques, and action steps synthesized from studies of leading practitioners." They claim that in order to carry out a re-organization, the incentive may be derived from questions. The system is a guide and framework to organizing and carrying out a re-organization team. The article has a set of questions to ask in order to find the needs of the organization such as "what information should be collected or made available as we construct and implement our change initiatives?" and "what is our plan for continuing improvements?" (Chandon & Nadler, 2000, p.123). They also discuss the downfalls of individual practitioners where a good organization is thought to be a group of well performing and efficient individuals. They advocate an organization, which focuses on a social construct where a system is formed to maximize individual contributions to the organization. The article is talking about one organization, though the same could be said for four different organizations creating one larger organization.

Different examples of interdepartmental integration among various organizations were also looked at. This type of integration is the most common among large organizations and bears a good resemblance to what this project aims

to accomplish. The following section deals with the concept of logistics and explores inter-departmental integration.

2.5.1. Logistics and Inter-departmental Integration

Many logisticians speak of 'integration' within an inter-organizational context, and have not given special attention to integration within an inter-departmental context (Kahn, Mentzer, 1996). This fact does not find inter-departmental integration to be of diminished importance. In fact, this topic is vital to the success of any large organization, as it has been found to improve performance in terms of better customer service, better management of inventory levels, higher forecast accuracy and greater customer and employee satisfaction.

2.5.1.1. Definition of Integration

What is meant by 'Integration'? Many sources have failed to provide a specific definition for this term, and as such this term remains vague. One definition could be 'interaction or communication activities', suggesting that more meetings and information flows comprises effective integration between departments (Kahn, Mentzer, 1996). Another definition includes 'collaboration' which suggests that teamwork, shared resources and joint goals would constitute integration. A third definition would be 'a composite of interaction and collaboration' which would constitute a mix of joint team goals and meetings.

Having the above definitions, the question still remains, ‘Which of these three definitions should be adopted by managers in order to attain efficiency within the organization?’ The following sections answer these questions detailing these three definitions, which will help us find common ground over the definition of interdepartmental integration.

2.5.1.2. Communication Based Definition

According to Carlsson’s theory (Carlsson, 1991), communication by way of task forces is an important mechanism during the start up and final stages of product development in a company. Carlsson also found that managers tend to integrate their departments by increasing contact through information flows, which is especially interesting because indicates that many managers are ascribing to an interaction-based definition of integration.

This philosophy for managing interdepartmental relationships is believed to stem from a transaction-based philosophy that has predicated much of business theory and managerial practice (Kahn, Mentzer, 1996). Managers tend to treat contacts with other departments as transactions. Thinking in terms of transactions, departments are considered to be independent entities that compete for company resources, and the contact between departments is considered to be temporary and cost incurring. Due to competition and perceived costs, managers view meetings and information flows with other departments as negotiations, where each

department tries to get the best deal at the conclusion of the meeting or information exchange. Thus, departments in strict interaction based companies carefully weigh the resources expensed during interdepartmental activities.

This strict interaction may give a negative tone to this definition of integration. However, one cannot stress enough how essential interaction is to a company. This approach can also be called a communication-based approach to managing departments (Kahn, Mentzer, 1996). Common methods of this sort can take place by carbon copying of information, phone calls, joint meetings. However, communication alone will not ensure successful interdepartmental relationships.

2.5.1.3. Collaboration Based Definition

According to Collaboration based definition, departments work collectively under common goals (Kahn, Mentzer, 1996). In a product development context, Souder (1994) defined integration to be 'a state of high degrees of shared values, mutual goal commitments and collaborative behavior'. His research findings revealed that harmony between R&D and marketing was a promoter of success.

This collaboration philosophy of integration differs from an interaction based integration and parallels the 'relationship marketing' philosophy that is now found to rise in the marketing areas (Kahn, Mentzer, 1996). This ideology stressed relationships between departments and not entirely on transactions

between departments. Departments are considered interdependent, which facilitates a shared vision among departments and encourages them to achieve mutual goals. Because goals are similar across departments, the company's internal environment is one of cooperation and not of competition.

Another point of difference between the two approaches is that collaboration is mainly an attitudinal approach (Kahn, Mentzer, 1996). This philosophy can also be a disadvantage in that it can require a dramatic change in organizational climate and culture. Such change may not be feasible or may not be welcomed by employees. Another issue is that collaboration would encourage lower level management to work with other departments thereby decentralizing authority. Collaboration is also an unstructured process and as such can lead to confusion among the employees as to their roles in the organization, and thus might lead to frustration. Also collaboration is an involved process in that the employee may find him/herself to be not as productive, owing to time being spent in cross functional training and other cross functional activities – such training without immediate results might be undesirable as per the upper management.

2.5.1.4. Interaction + Collaboration Based Definition

This philosophy subscribes to the notion of integration being a composite of Interaction and Collaboration, where both processes of information sharing and involvement are actively pursued (Kahn, Mentzer, 1996). However, this theory suffers in the context of confusion by the employees over what the distinction

between interaction and collaboration is. This confusion requires that a clear distinction be made about information sharing via communication and working together in a team environment under shared goals.

Nonetheless, the composite view of integration as defined above, appears to be the most appealing since interdepartmental integration is a multidimensional process (Kahn, Mentzer, 1996). This definition supports the view that collaboration and interaction are separate processes. It also stems from this that different management situations would require different degrees of both interaction and collaboration.

Conclusion drawn from comparing the advantages and disadvantages of each of the above mentioned definitions of integration is that the interdepartmental integration should be a composite of both interaction and collaboration. Interaction represents communication activities such as verbal and documented information exchanges between departments, including meetings, faxes, teleconferencing, conference calls, memoranda and transmittal of standard documentation (Kahn, Mentzer, 1996). Collaboration represents activities such as willingness of departments to work together, which emphasize working together, having mutual understanding, having a common vision, sharing resources and achieving collective goals. Collaboration activities are less easy to regulate, whereas interaction activities are easily monitored.

2.5.1.5. Regions of Integration

Kahn and Mentzer (1996) describe a model of logistics integration with other departments, which consists mainly of four regions.

1. Low interaction, high collaboration
2. High interaction, low collaboration
3. Low interaction, high collaboration and
4. High interaction, high collaboration

They propose that while high levels of interaction and collaboration are good, they should correspond to the needs of the logistics situation. As suggested by Figure 2, not all situations will require high levels of interaction and collaboration.

Interdepartmental interaction	High interaction	<ul style="list-style-type: none"> • Stable product lines • Stable markets • Available time • Lower uncertainty 	<ul style="list-style-type: none"> • Complex products • Complex orders • Mission-critical items • Key customer accounts
	Low interaction	<ul style="list-style-type: none"> • Department-specific activities • Third-party logistics 	<ul style="list-style-type: none"> • Product launches • New facility parameters • Special customer orders • High uncertainty • Short-term episode
		Low collaboration	High collaboration
Interdepartmental collaboration			

Figure 2 – Logistics Integration with other departments
(Kahn, Mentzer, 1996)

These sections describe how to apply the models used for program integration at NSPE. This would help us perform an analysis of the present operating procedures. This also gives an idea about what considerations, such as extent of collaboration between the Practice Divisions and NSPE are required when designing and implementing an integration scheme at NSPE.

2.6. Data Analysis

Our project involves creating a web application to help assess the trends in the member's career, age and gender to help integrate the four NSPE mentoring programs and to better assess the quality of the mentoring program offered. Information on market research and decision-making, data collection and information analysis are required for the purposes of integration and assessment. Some knowledge in market research is required to understand the necessary types of data that need to be looked at for this project. This information will give us a good idea of what areas to concentrate on while forming the web application.

2.6.1. Data Acquisition

In market research data can be obtained from internal sources and by observations, surveys, experiments, attitude research, motivation research and managing marketing research. Some of these methods are not plausible through a web application and database, but some of them are possible.

Samli (1996, pp.49-81) emphasizes the fact that these data are obtained by different measurement methods such as internal, observed and survey collected data have their own unique advantages on offering information to aid decisions. He states that without proper interpretation, the market research may not be so successful. He also presents some ways of analyzing the data which are discussed below.

2.6.2. Sampling

The different methods and types of data research in anthropology were also reviewed. There are two main types of data: individual data and cultural data. Individual data are quantifiable facts attributed to individuals in a population. Individual data are the focus of this project. Cultural data are very difficult to analyze. Cultural data require experts on the topics, culture, and geographic region to make intelligible conclusions. When collecting data, a sample of the population is better than the entire population. Surveying the entire population introduces more complications and costs than it's worth. When surveying a sample you need a sampling frame. A sampling frame is usually a list of every member of the population that you would be interested in surveying. From this sampling frame the sample to be surveyed is blindly chosen. There are many methods of choosing a sample.

A simple random sample is usually chosen by a random number generator from a computer program or from tables of randomly generated numbers. This method of sampling is of course random, however there are other factors that may skew the data. For example, if you are conducting phone interviews between the hours of nine and eleven am, you will be missing most people who work outside the home. A systematic random sample is easier to get than a simple random sample, however it is more difficult to get a truly random sample this way. After numbers all of the names in the sampling frame are numbered pick a sampling interval, n . Starting at a random number in the sampling frame get every n th number until you reach your desired more difficult to get a truly random sample this way. After all of the names in the sampling frame are numbered, pick a sampling interval, n . Starting at a random number in the sampling frame get every n th number until you reach your desired sample size. With this sampling method, periodicity and systematic sampling may skew the data. Stratified sampling is used when the population has different characteristics that must be kept separate.

A proportional stratified random sample will best suit the purpose of the research. A proportional stratified random sample is similar to a stratified random sample, however this sample keeps the percentages of certain characteristics constant from the population to the sample. This is very important when choosing a sample for surveys at NSPE because of the low percentage of women members. There are rules for when stratification is valid. Stratify only if the differences

across the strata are great. If the differences aren't very great or if you are unsure of what is affecting your dependent variables, then stratification is not a good idea (Bernard, 2001, pp.141-152).

2.6.3. Surveying

Surveys are a very popular research tool in most developed countries all over the world. Surveys as a form of research are very credible due to their wide acceptance among professional organizations and accredited institutions. There are three different ways to collect data from surveys: mail-out surveys, telephone surveys, and in-person interviews. Based on the recommended time schedule for each of these methods of data collection the in-person survey method is far beyond our reach due to the limited time in Washington, D.C.

The time schedule that the L. Rea and R.Parker model suggested in *Designed and Conducting Survey Research* is shown in APPENDIX B.

The weeks have been changed to days along with minor adjustments to the steps involved. The adjusted timeline is shown in APPENDIX C.

There are other benefits to using mail-out surveys as a means of data collection. Mail-out surveys are inexpensive because one does not have to train interviewees, pay interviewees for their time, or pay for toll calls. Mail-out surveys are convenient and give the respondent ample time to respond. The person being surveyed can complete the survey whenever they want and wherever

they want. If they need to consult any person or document for answers, they easily can. Mail-out surveys give authoritative impressions and reduce interviewer-induced bias. The researcher can rewrite and check the survey many times, to make sure it is credible and well written. Also, because it is written, there will be no unintended induced bias caused by things such as voice inflection or misreading of the question by the interviewer. Also, mail-out surveys reinforce anonymity for the respondent since there is no direct interview-respondent interaction.

According to Rea and Parker (1997, pp.1-69) there are eleven stages to the sample survey process.

- Stage 1: Identifying the focus of the study and method of research
- Stage 2: Determining the research schedule and budget
- Stage 3: Establishing an information base
- Stage 4: Determining the sampling frame
- Stage 5: Determining the sample size and sample selection procedures
- Stage 6: Designing the survey instrument
- Stage 7: Pre-testing the survey instrument
- Stage 8: Selecting and training interviewers
- Stage 9: Implementing the survey
- Stage 10: Coding the completed questionnaires and computerizing the data
- Stage 11: Analyzing the data and preparing the final report.

Stage one includes setting the goals, objectives, and methods, all of which must be agreed upon before anything else can be done. Stage two, in most cases, will rely upon other factors dealing with the research project. The timetable and budget must be flexible so unforeseen complications can be dealt with. Stage three is crucial. A collection of resources must be formed as soon as possible. This is from where the data will be extracted. Stage four is determining who the surveyor would like to get answers from. Stage five is determining how many surveys will be conducted. This depends on many different factors including the desired confidence level, budget, and acceptable percent error. Stage six is deciding on the method of data collection (questionnaire, interview, etc.). Stage seven involves testing the survey under actual survey conditions to make sure the questions illicit the information desired by the researcher. Stage eight is selecting and training the interviewers. This part of the process is vital to data collection. This stage is usually very costly and time consuming. Stage nine is where the chosen survey instrument is used. Stage ten is the analysis of the data. Stage eleven is the preparation of the final report.

2.6.4. Analysis

2.6.4.1. TOM

There are many methods used to interpret data received from the public. Some of these methods will be reviewed to get ideas as to which method would

work best for the data being collected during our project. Samli (1996, pp.15-20) mentions some of the marketing decision methods, and one is Total Quality Management (TQM). TQM is a method for continuously modifying a system to meet customer requirements using enumerated data to assess the relation between customer needs and the actions taken. In Majid Jaraiedi and David Ritz's article, "TQM in Engineering Education" (1994, p.32), they suggest that the TQM could be used to enhance education systems. Although the main focus of the article is on education in Engineering, the author successfully tests TQM and Quality Function Deployment (QFD, which is a method similar to the Balanced Scorecard Technique to provide a numerical value for quality) on an engineering school to experimentally obtain positive results. The authors discuss their method of labeling students as the customers, and Education as the service or product, in order to apply the QFD method to improve the service. This article gave good insight into the possibility of using TQM and QFD for the database creation guideline as well as the system assessment method. However, this article was based only on one test where the TQM method was used on a service rather than a physical product at one engineering institute (TQM was aimed for product improvement and was not designed for services). It is not a sufficient sample to generalize services such as the NSPE mentoring program.

2.6.4.2. Focus Group Method

As another example of feedback used in the research field, the focus group method could be used to analyze data that have more detailed accounts of respondent experiences (Walker, 2001). Walker discusses specific issues that he had during his experiment in English Language Schools. He took feedback from the customer to obtain respondent confirmation and disconfirmation of expectations and satisfaction and dissatisfaction in the service to put into the future marketing of the service. In contrast with the article on TQM, this article focuses more on their research in a non-quantitative way. The research tries to extract what the customers do and do not-want by “Word-Of-Mouth communication,” and tries not to simplify the answers into numerical values. The experiment was done in five different English language institutions in different locations of New Zealand. While this sample is a slightly wider in range than the last article about TQM in Engineering, it still is not a good enough sample to generalize. A similar “focus group” type method may be implemented in our Online Forum where the Communication between Mentor/Mentoree will take place. This method allows for questions to get ideas about their opinions on NSPE’s newest service.

2.6.4.3. Frequency Distribution

After categorizing the data received it is possible to summarize the results in easy to read chart and diagrams using frequency distributions.

Table 2.

Example Table of Frequency Distribution		
Number of Years	f	%
Less than 1	101	13.1
1 and under 5	145	18.7
5 and under 10	149	19.3
10 and under 20	135	17.4
20 and under 30	134	17.3
30 and more	110	14.2
Total	774	100.0
No responses = 26		

Table 2 – Frequency Distribution Table

a) Likert Scale

Likert scaling or Summative scaling is a uni-dimensional scaling method. It involves assigning numbers to qualitative statements. The first step is to determine what one is trying to measure. After that one must think of the appropriate response scale that will be used. It should be either 1-5 or 1-7 agree-disagree response scale and about 80 to 100 questions must be created. After these steps are completed one should have a group of judges rate the questions on how well they favor what one is trying to measure. When selecting the questions to use, the following guidelines must be followed:

- Throw out the question with low correlation to the total board score.
- For each question get the average of the ratings of the top and bottom quarter of judges. Then do a T-test of the differences between these values and the mean values. The higher the T-test values are the higher the discriminatory factor. Use your discretion to decide if a question should be used or not.

b) Thurstone Scaling

Thurstone Scaling is based on Thurstone's Law which was presented in 1927 to relate scale values of a set of stimuli to observable properties. Similar to other scaling procedures, the first step is to define the focus of the scale. To begin, one must come up with a focus command to ask as instructions to those coming up with statements to be evaluated. After coming up with 80-100 statements, one must make each participant rank all of the statements from one to eleven depending on how favorable the statements are to the focus statement. One being least favorable, and eleven being most favorable. The next step is to compute the median and interquartile range for each statement. The last step of selecting the final scale statements is to select statements from equal intervals with the smallest interquartile range. The final step of the survey is to administer it to the public. The format is a list of statements with "Agree" and "Disagree" boxes to check. From this one should be able to get a good understanding of the persons feelings toward the focus of the survey.

c) Guttman Scaling

The Guttman method of scaling is also known as cumulative scaling or scalogram analysis. It was developed by N. Guttman to measure attitudes. It is set up so that any item that the respondent agrees with also agrees with all previous items in the list. As with the other scaling methods, the first step is to define what the focus is. The next step is to devise a large pool of items that reflect the concept that would potentially be used to measure the attitude of the respondent. After coming up with 80-100 statements, a group of judges must rank them depending on how the statement relates to the focus of the analysis. The next step is to set up a grid of all of the questions, judges, and their responses. Sort them by placing the judges who agreed with the most statements at the top. The same with the questions from left to right, which will result in a formula as that depicted in Table 3.

Respondents	Item	Item	Item	Item
	3	2	4	1
4	Y	Y	Y	Y
18	Y	Y	Y	---
6	Y	Y	Y	Y
7	Y	Y	---	Y
14	Y	---	---	Y

Table 3 – Statement Ranking for Guttman Scaling

The scale is nearly cumulative with few exceptions. Analyze the table using one of many different methods to find the right questions to use.

d) Response Scaling

Response scaling is a little different than the Likert Scale. Response scaling is used to collect the response for an item. A number is assigned to each item in a list, but the number refers to just that item. It is not cumulative like the Likert Scale.

2.7. Web Application

Using the methods mentioned above, different types of data about the program and its members was obtained. One project objective is to create a web-based application to aid the communication among the members of the mentoring programs. With different data about the mentors and mentorees as well as their communication information, a database to contain data used for such services must be created. In order to implement such an application, knowledge of some databases is needed to select/create the best database for our purpose.

2.7.1. Database

To contain all of these data a suitable database must be selected. Davidson (2001, p.35) discusses a method of database implementation to maximize efficiency (Davidson, 2001, pp.38-39). The method described here is fairly basic. The first caution the author makes regards the structure of data tables in the database. The author argues that the database should not contain multiple occurrences of the same data and suggests using a relational database, where all

fields and tables are linked. In his example for creating a library database, the author creates one table of books (with unique ID or primary key) in the library with other relevant information about the book, and one table of categories, which contains book ID for all books within each category. The general idea is to minimize the redundancy of the database to maximize performance. While this database structure is very basic, it is important in our project as it creates an efficient database to house all the collected data from our web application.

2.7.1.1. Database Structure

Ryan K. Stephens and Ronald R. Plew (2001, pp.10-30) discuss in Database Design, basic fundamentals that a database designer must understand before initiating a database design effort in a large organization. These basic fundamentals include:

- Basic Database Elements
- Business Elements used to Define a Database
- Data Integrity
- Design Concepts

Basic database elements are the core elements within the Relational Database structure. These elements include things such as tables, rows, columns, relationships and data types as well as key values (primary and foreign). In short, Database contains tables where each table contains data of certain category. All

tables have a theme, and all the data in the tables are consistent with the theme. Within the tables there are columns, which indicate different categories of data with a specified data type. There are also rows, which contain different sets of data. Some tables are related using primary keys and foreign keys to tie the tables together. Primary key is the unique number for each row in a table used to point to that specific entry, and foreign key is the number pointing to a Primary key in another table showing that this entry is related to the entry the foreign key points to. For example, in an online bookstore database, there may be a table of customers and a table of orders. Each entry in the order table will have a foreign key pointing to the primary key in the customer table. This indicates that the customer pointed by the foreign key filled in the order.

To determine the business elements, one must understand how the organization operates and the things that are required for the application that makes use of the database (Stephens & Plew, 2001, pp.29-30). The data required for the web application and their structure had to be determined. For example, this web application requires Users and Forum posts tables, and for each forum post, there needs to be a foreign key that will point to the user who posted the message.

Also, various restrictions to each of the fields must be properly handled, keeping the integrity of the database intact. This restriction is especially important to prevent a foreign key in the database pointing to an illegal primary key or primary key that does not exist.

The design concept details how the database will be used. There are two types of relational databases, each having distinct uses and characteristics. One is the transactional, or Online Transactional Processing (OLTP) database. This is a database designed to process transactions on a regular basis. The tables should be organized according to what kind of transactions takes place and what types of data are manipulated. The other is the Online Analytical Processing (OLAP) database. This type of database is mostly used for analysis and stores data that are mostly static. An example of such database would be database of company historical sales records. Such data does not change once inserted, and helps the organization make decisions later on. This type of database should have the tables organized according to which data sets are requested most frequently for analysis purposes, to maximize efficiency on retrieving these data.

2.7.2. Programming Languages

Several programming languages will also be used to implement the web application for data collection and data management, as well as forming a forum for communication aid between the program participants. Below a few different programming languages are discussed that could be considered for programming the interface and the underlying architecture to store and manage the data on the database.

2.7.2.1. HTML

HTML stands for Hyper Text Markup Language and is the *lingua franca* for publishing hypertext on the World Wide Web (HTML Homepage, 2001), as mentioned in the W3C Homepage (HTML Homepage, 2001). HTML uses tags to extensively notate different text formatting information to enable authors of the HTML web pages to have paragraphs, lists, bullets, input forms, hyperlinks, etc, within their document. The website offers much documentation on how the HTML recommended format and has many of the standards used in the current HTML market. They have “recommended” versions of HTML with different levels of support amongst the general public computers, and they have documentation on their specifications. These different versions will allow checking of the code for more compatibility throughout different target platforms.

2.7.2.2. XML

Extensible Markup Language (XML) is a language similar to HTML, but rather stricter and has more general use (XML in 10 points, 2001). W3C group explains in the W3C homepage that XML is a method for storing structured data in a text format. XML uses tags, like those in HTML, to delimit the data fields. The XML is used among database servers to store their data and transfer data from one server to the other. This is useful when transferring the data from one database software to another. Microsoft Access 2002 provides extensive support

of the XML for their database as well as other database softwares (Microsoft, 2002, p.7).

2.7.2.3. Perl

Perl is a program language originally developed by Larry Wall and is a language widely supported among developers (Brown, 1999, p.3). The Perl language excels at process, file, and text manipulation, which make it very useful for system utilities, software tools, system management tasks, database access, graphical programming networking and the World Wide Web. The tasks listed above include database access and World Wide Web programming. These are exactly the kind of tasks that are required for our web application. The author discusses different Perl programming language syntaxes and its uses. The section on web programming has a great deal of information on data collection methods, parsing and analysis. Perl also has a module for use with various database servers and their interface to manipulate the database server to store and obtain data from the desired databases. The database standards supported by Perl include Microsoft ODBC and the SQL standard. These are widely used database standards and indicate that Perl could be used along with most other database software out on the market.

2.7.2.4. PHP

PHP is another programming language, which was specifically designed to handle web-programming needs such as obtaining data from the viewer and processing request (PHP website, 2001). PHP is processed by the server and requires an installation of PHP interpreter module within the web server for PHP scripts to run properly on a particular web site. PHP module is available for many of the servers on Windows platform such as Apache, IIS, PWS and Xitami web server. It is also available as source code for people running various UNIX variant server platforms. The strength of PHP is its ease of coding and simplicity of the code, which ultimately helps in the maintenance of the code.

PHP also has a very useful function set to handle SQL commands and ODBC commands (PHP website, 2001). These are both standard instruction definitions for handling a Database Management System (DBMS), which will be used for handling the data during the project. Since the database used will be either Access or MSSQL which complies with the SQL standard, PHP will be a suitable tool for the implementation of the database front-end (Greant, Merrall, Wilson, and Michlitsch, 2001, pp.403-430). The functions include, but are not limited to, standard querying, querying with filter, grouping and sorting; inserting data and roll back.

2.7.2.5. ASP

Active Server Page (ASP) is a programming standard in Microsoft web servers, which acts similar to PHP (Eden & Hartman, 2001, p.533). It utilizes some of the features on Microsoft web servers to process requests sent from the client before sending back the request. ASP can be written directly into the HTML documents (like PHP) making the HTML document vary depending on client requests and other variables. The strength of ASP is its neutrality, since the actual code can be written in VBScript, JavaScript or Perl as long as the server side has the components required to process these languages (Microsoft MSDN library page, 2001). ASP is not a programming language but a standard that allows web programmers programming on Microsoft's web server to use some scripting language (which are supported) to create a dynamic web page like PHP.

2.7.2.6. SQL

Structured Query Language (SQL) is a database query language, which is used to interact with Relational Database Management Systems (RDBMS) (Groff & Weinberg, 1999, p.4). SQL provides the following control functions that the RDBMS supports:

- Data definition: SQL allows users define the structure and organization of the stored data and the relationships among the stored data items.

- Data retrieval: SQL allows a user or an application program to retrieve stored data from the database and use it.
- Data manipulation: SQL allows a user or an application program to update the database by adding new data, removing old data and modifying previously stored data.
- Access control: SQL allows administrators to restrict user's ability to retrieve, add and modify data, protecting stored data against unauthorized access.
- Data sharing: SQL is used to coordinate data sharing by concurrent users ensuring that they do not interfere with one another.
- Data integrity: SQL defines integrity constraints in the database, protecting it from corruption due to inconsistent updates or system failures.

SQL is a comprehensive language for controlling and interacting with a RDBMS (Groff & Weinberg, 1999, pp.4-5). Groff & Weinberg (1999) discuss in SQL: The Complete Reference, all of the SQL commands and their uses as well as database implication for each set of commands. The Data retrieval section talks about all of the methods that can be used to obtain the desired data from certain table or multiple tables, with desired sorting methods as well as filtering methods.

3. METHODOLOGY

This section of the report details the steps that were followed to achieve the main goal of this project, to develop a system that coordinates the integration and evaluation of the four mentoring program activities into a centralized web application.

Before formulating our methodology, the following factors were taken into consideration:

1) Increase membership

Create an attractive marketable mentoring program that would appeal to the engineering public and thereby increase awareness and membership of NSPE.

2) Lack of diversity among membership

While the current membership of NSPE is skewed towards older white males, this project should cater to females, younger engineers and other minorities.

3) Budget

Since NSPE is a non-profit organization, this project had a limited budget.

4) Lack of resources

The NSPE lacked an internal library which could have been useful for

researching mentoring resources. Also, the fact that the NSPE website is hosted and developed offsite hindered development efforts.

The steps taken to attain our main project goal involved collecting data from NSPE members and mentoring program participants via email/postal surveys and phone interviews. This project also involved program evaluation, software development and software documentation.

3.1. Determine Goals and Needs of Program Participants

Our first objective was to determine the individual goals and needs of the mentoring program participants. This objective was met by collecting data from program participants using interviews and surveys, and analyzing that data to determine the similarities to incorporate into the new mentoring program.

3.1.1. Interview and Survey

Interviewing and surveying were the primary means by which the individual goals and needs of the NSPE mentoring program participants was determined.

3.1.1.1. Mentor Survey

First, communication was established with current mentors via email and postal mail to get feedback about their involvement with the current mentoring programs (APPENDIX B). The questions were fairly general with some elaboration on concerns and ideas for the program. A database of all results was compiled upon receiving data from the mentors. From the database, the original sampling frame (current mentors) was divided into three groups. These three groups are: current mentors, current mentorees on file, and a stratified proportional random sample of 400 NSPE members. There were many steps taken to collect and organize the interview and survey data:

- Submitted request for records on all of the living NSPE members and licensed professional engineers. The NSPE database software divides the information for the entire membership up into many different fields. One field distinguishes between member, student member, life member, etc. Often, NSPE is not notified when members pass away, therefore, the fields specifying living members was very important when obtaining a sampling frame.
- Obtained all of the NSPE records of people in those groups from NSPE's The Association Software System (TASS) database.

- Created other tables for the results of each of the surveys as well as one for business information, engineering specialty, and program participation.
- Gave each of the three groups mentioned earlier a different survey depending on what part of the program pertains to them. The mentors got a survey asking more in depth questions including a follow-up survey and phone interview. The mentorees received one survey with basic questions about their experience in the program. The general membership got an even simpler survey asking about their awareness of the program.
- Since contact information for all of the mentors was known, extensive contact was performed.
- Sent surveys via email to those who had an email address listed in NSPE records and sent postal mail to those who did not have an email address listed in NSPE records. The initial survey asked general questions about themselves and their involvement in the mentoring programs. One of the questions was a request for a telephone interview. (APPENDIX D)
- A reminder was sent one week after the first survey was sent. (APPENDIX G)

- A second survey was written after the first one was sent out to include any questions valuable to the project including new concerns of the NSPE Mentoring Team. (APPENDIX I)
- The mentors were divided into four different groups depending on their responses to the surveys.
 - The first group consisted of those who indicated that they were no longer involved with the program. A follow-up email with a short questionnaire was sent to them. The main focus of that questionnaire was to find out the main reason for quitting the mentoring program.
 - The second group consisted of those who returned the survey, are still mentors, but refused a telephone interview.
(APPENDIX S)
 - The third group consisted of those who returned the survey, are still mentors, and agreed to a telephone interview. These members were contacted via email to obtain their telephone numbers and other needed information. They were then contacted via telephone (APPENDIX J).
 - The fourth group consisted of those who did not return the survey at all. The survey was resent. Those who did not respond were not contacted further.

3.1.1.2. Mentoree Survey

Additionally, the mentorees with known contact information were also surveyed. (APPENDIX E) The mentoree survey asked them the reason for involvement in the program and requested them to rate the program.

3.1.1.3. General Membership Survey

A survey of a random sample of the NSPE general membership was conducted. (APPENDIX H) An accurate proportional stratified random sample was not possible due to the ambiguity of some of the fields under which the data are stored at NSPE. Many of the fields on the application to become a member of NSPE are optional. Because they are optional many people have no salutation recorded. This makes distinguishing males vs. females difficult and impossible in some cases. The sample satisfied the original calculated proportions to the best of our ability. This survey helped us find out how well known the mentoring programs were among the membership (if they knew about the programs and if not participating, why?). The survey was sent via email and postal mail. In some cases, survey participants were replaced based on low response rate due to unusable email addresses. For example, if 20% of the email addresses failed then the survey was resent to different people until the number of recipients required for

sample size was reached. After the original survey was sent out an exceptionally low number of surveys were returned. In an effort to obtain more data, the survey was sent out to another random sample of 100 members with listed email addresses.

3.1.2. Survey Results

Throughout this entire process, the responses were documented in a database format. The collected data on the current NSPE mentoring programs and information about the membership obtained through the surveys and interviews are stored in a database system. The database is stored in a relational database format where the tables for the members, programs, answers to different survey or interview questions (Appendices C-K), and other various information such as a mentor mentoree contact log are stored.

3.2. Mentoring Model

A model was developed for mentors and mentorees to work together effectively. Before this model was built a number of things were taken into consideration:

- The current mentoring programs
- Mentoring models for different programs
- Feedback from participants in current program

- Structure of current fora

A large part of this model depended heavily on the structure of the program. In order to justify the web application as the base for the new mentoring program and mentoring model, research was done on how current mentors feel about web mentoring.

When the current mentors were surveyed, they were asked questions about how long they had been mentors, why they became mentors, and how they had heard about the program. From the survey answers, the following was determined: if they are comfortable mentoring, how much mentoring experience they have had, and how happy they are with current NSPE mentoring programs. Also, the mentorees were asked what format (if any) they followed regarding frequency of communication and discussion topics.

3.3. Online Forum (Engineers' Café)

One of the objectives of this project was to successfully maintain NSPE online fora and mentoring inquiries. This objective has two parts. It involves maintaining the fora currently in place and also the maintenance of the new forum (web application named Engineers' Café) that was developed. However, the development of the new fora constitutes that the maintenance of the present fora would be redundant, since these present fora will be replaced.

The Engineers' Café software was created to accomplish several objectives. The first objective of the software was to provide a central place for NSPE mentoring program web site visitors to communicate with other engineers on different engineering topics. At the same time, the software was developed to provide a NSPE members only forum for mentors and mentorees to communicate with each other to achieve their mentoring program goals. The second objective of the Engineers' Café is to provide NSPE staff with means to identify mentoring program activity and membership interests. The second objective was accomplished by monitoring the activity of different categories as well as the communication log feature for the mentors to provide feedback on their relations with mentorees.

3.3.1. Research current online fora

To generate a good online forum, research on online fora was done. This was done by browsing other similar program websites and analyzing their online fora. Special attention was paid to their organization, their structure, any appealing features as well as ease of use. By researching a number of different fora dealing with similar interests, a set of required features for the Engineers' Café was determined (Listed in Section 3.3.4. Develop Software).

The cost of implementing the forum software was determined with due attention to server software and ease of implementation in the hosting service.

Based on available funds from the NSPE, budgetary restrictions played a role in the search for suitable software.

During the research on forum software, different organization web sites as well as other personal or group web sites were reviewed for implementation ideas. All of the software reviewed during the research was also evaluated for software effectiveness as the Engineers' Café's core. Some of the organizations were referred to us by our mentor survey or by people from NSPE. The organizations referred to us by a mentor (<http://ppi2pass.com/cgi-bin/engforum.cgi>, last accessed November 30th 2001) and by NSPE staff (<http://www.NAESC.org/comm/disc.html>, last accessed November 30th 2001) used a very similar forum software as the NSPE. The NAESC forum site had several different instances of the same forum under different categories to organize the fora by different discussion topics. The same organization scheme was seen in the NSPE site as evidenced by how the fora were organized by different practice divisions of the NSPE.

The WPI Admissions Café (<http://www.wpi.edu/cgi-bin/ubb/ultimatebb.cgi>) was also looked at, which is powered by the Infopop-Corporations Ultimate Bulletin Board™ 6.1.0.2. This forum software is a commercial product and is more sophisticated. The software allows many fora to be set up under different groups of fora. This is ideal for organizing numerous fora in the same site. Also, since most of the administration is done through the web, including adding/deleting new fora, assigning moderators, permission

settings and more, the general administration of the forum software will require no help by an outside developer. As it stands now, the developer outside NSPE is paid to setup new categories and cripples flexibility.

Another software that was found in some web sites, is the Snitz Forum 2000 (<http://forum.snitz.com>), an Open Source forum software utilizing SQL, ASP VBScript and Java Script. This software resembles the Ultimate Bulletin Board™, and there is much in common between the feature set of the two forum softwares. Although for implementing the software, the Snitz forum software is a free distribution and is written in ASP, which will be favored over the Ultimate Bulletin Board™. Since the developers hired by NSPE uses ASP scripts, it was more suitable for our purposes.

The details and implications of implementing our web application in the NSPE web site were discussed in detail with NSPE IT (Information Technology) staff. This is discussed in detail later in the next section.

3.3.2. Interview NSPE web coordinator

In an effort to test and implement the Engineers' Café, much communication ensued with the NSPE Web coordinator and IT staff (Alan Thompson, Stefan Jaeger, David Siegel and Walter Bailey).

The first thing determined was the NSPE web server configuration. Two major questions were asked:

- 1) What is the WWW service software used for the NSPE web site and
- 2) What is the database server software on the web server (if there is any).

The answer to these questions were Microsoft Internet Information Service (IIS) for serving the NSPE web site, and Microsoft SQL server 2000 for the database service.

Initially, a development environment was created using IIS on the office desktops with Microsoft Access as the backbone database server. This was not the best environment for developing and testing since there is a slight difference in the NSPE web server and this development environment. The Engineers Café is highly dependent on the database, and development on Microsoft Access may cause problems when our software is to be deployed on the NSPE web server with MS SQL server 2000 as its database server. The NSPE IQP team initially requested a test web space and a database for testing our software, though this was not possible since the web development company hired by NSPE was involved in a major website reform effort and were reluctant to change any settings on the test server. Because of the communication difficulties and high costs of communicating with the outsourced developers, the development version of the SQL server 2000 was purchased towards the end of the project. The development version of the SQL server along with the IIS 5.0 provides a testing environment very close to the NSPE web server configuration and further, the software can be guaranteed to operate on the NSPE web site.

Immediate implementation of the Engineers Café on NSPE web site was not possible due to outside provider reforms. To overcome this, a transition plan was developed with NSPE IT staff and the outside web developers. The transition plan (APPENDIX Q) was aimed to gradually replace the existing forum site eventually ending up with the Engineers Café software as the main Mentoring forum on the NSPE web site. The initial stages are aimed at putting the Engineers Café into the public domain within the Ask A PE site with transition notification posted to the public. The second stage aims to put the Engineers Café software in front of the NSPE home page. Third and fourth stages move the current forum under “Ask a PE” into the Engineers Café and leaves them just as reference to the older posts. The fifth stage removes the old fora and completes the transition.

3.3.3. Test web software for our purposes

Some software languages for implementation of the web application as well as the forum software was evaluated, which became the base of the Engineers Café. Some programming languages as well as different Forum Software were evaluated to determine what was to be used in our product. Programming language and the base software for Engineers’ Café was mostly determined on the server configuration information that was obtained from the IT staff at NSPE to keep the compatibility with the server. Also, to allow easy maintenance of the program code by the outsourced developers, the same

language as used in current NSPE site (ASP) was chosen for the coding of the software. From this the following specification for Engineers' Café was determined:

- Runs on MS IIS
- Coded mainly by ASP and VBScript
- SQL server 2000 will be used for the database service
- To access the database, only plain SQL will be used (obviously incompatible Query language style should be avoided to keep compatibility with most other databases).

With this information, a forum software that meets the needs of our Engineers Café forum and fulfills the specifications listed above was selected. The search targeted forum software since a majority of the Engineers Café would be the forum section. Also, designing a good forum is time consuming and would not be feasible to create a well-designed forum with the time given. The forum software listed in section 4.3.1 was considered and the decision was made to use the Snitz forum 2000 for the basis of our Engineers Café web application. The Snitz forum possesses all off the attributes that was desired in the forum section and meets all of the specifications listed above.

Once the software was chosen, a test environment with the chosen software installed was set up on the desktop PCs provided by NSPE. This machine, at the time, ran MS IIS 5.0 and used Access 97 as the backbone database server. Even though the database server was not the SQL server 2000 as

specified, testing of the software went without worries about the differences in the database server. Such flexibility in testing was mainly due to the fact that the Snitz Forum was written to be compatible with Access 97, MS SQL server 2000 and other database servers. Also, Snitz forum 2000 had a configuration script that handled all database specific aspects of the program code. Once the installation was complete, the forum software was tested further to weed out any bugs and looked into the source code to determine how the Engineers Café specific code should be implemented. As result of testing, minor interface bug arose and were removed from the forum software. Also, the research in the software code revealed that the structure o the code allowed modular design and that new features could be implemented seamlessly into the existing framework.

3.3.4. Develop Software

The actual development of this software started after suitable forum software for our portal site was found. This software is the base of the web application as discussed above, and was expanded as needed to encompass all of the features that were viewed necessary for NSPE mentoring website coordination needs. Some of the necessary features our portal site contains are:

- User login that can distinguish the users membership status and program participation status

- Communication log for Mentors to report on their Mentor/Mentoree relation
- Category based forum, allowing each post to be categorized. Also allowing moderators and administrator to edit categories.
- Forum activity monitor (tallies on message posts for statistical reporting)

These features were identified as necessary over discussion and from researching other forum sites. The features were believed to be the basic features required in the Engineers' Café software.

The development of the forum started after the forum software was chosen. The user login and category based forum posting was already implemented by the developers of the Snitz Forum 2000, so it was not modified.

The majority of the development effort went into the Communication log for mentors and forum Key Indicator. Also, the member only and mentor only areas were added. The database table design modification from the original Snitz Forum 2000 is shown in the APPENDIX A of the Training Manual. The table modification was done to add all of the new features such as the mentor/mentoree communication log feature. This for example, required a table containing Mentoree list listing all of the mentorees and their mentors, and a table of all of the logs.

Also, a whole set of ASP scripts were written to implement the interfaces for all of the added features. Counter page, which originally counted the whole

fora activity, was modified to also include category specific activity on the forum software. The mentor menu was added for all mentors to enter their Communication log with their mentor as well as view their old logs.

Another part of the development was to develop a manual for all necessary options for the NSPE administrator in charge of our final product. This documentation will serve any NSPE staff, who need to use some of the features, including the database, to analyze the information obtained from the Engineers' Café. The documentation includes a section on some implementation specifications as well as installation instructions for the developers who will set the Engineers' Café software up on the NSPE web server and maintain the software. This Manual is published as a separate document with this report.

3.4. Evaluation

One of the goals of this project was to evaluate the effectiveness of each program based on certain criteria, which can be applied to future mentoring programs. To accomplish this goal the following procedures were taken:

- Conducted surveys to get feedback about effectiveness of present programs
- Obtained data on participant Goals vs. Accomplishment of these goals.
- Obtained outcome assessment of feedback.

- Applied the 'Balance Score Card' Technique based on feedback to create key progress indicators.
- Modified key indicators for application to future mentoring programs.

Our first step, upon arrival at Washington, was to conduct interviews and surveys of all present mentors and mentorees enrolled in the various NSPE mentoring programs through email or postal survey as detailed in the preceding section. Obtaining comments about the success and effectiveness of NSPE's mentoring programs was a primary focus. During this process, the goals and needs of each respondent were identified. The creation of an analysis table as a measure of how the current mentoring system satisfies each of the goals outlined by our mentoree sample was planned. Contact information for many mentorees was unavailable, skewing the data. In the absence of a representative sample of mentorees the data was supplemented with interviews from people in other mentoring programs and feedback from NSPE staff. The creation of the data table helped with determining how many of the goals are being satisfied and also provided valuable input regarding goals that were not being addressed by the NSPE's mentoring system.

After these steps, the 'Balanced Score Card' technique was used to create a set of Key Indicators. This set of Indicators provides a numerical system of ranking the effectiveness of each mentoring program, which is included as an

additional feature in the Forum software. The key indicators NSPE had in place were examined as well as the data collection system NSPE uses and the evaluation system of the collected data. Upon completion of this task, a timeline that detailed the periodicity of the application of this technique to mentoring programs was also created. This timeline is the first few steps to the Evaluation procedure.

3.5. Marketing

This objective required the project team to suggest new means of marketing the new web application / online forum as a way to attract new members. This subject was explored and suggestions to include in the revised mentoring schemes were developed as an added bonus. The following is a list of the procedures that was followed:

- Researched the scope of online forum in marketing terms
- Conducted interviews with NSPE Marketing Division
- Obtained feedback from ex-NSPE members
- Surveyed sample of general NSPE membership
- Analyzed procedures followed
- Submitted tabulated recommendations to NSPE Marketing Division.

Once the web application was in place, the Marketing Division was notified of software features that will make the programs more appealing to new

members. Providing these details to the NSPE Marketing division helped them direct their strategies to different age groups, different disciplines or different ethnicities. This ultimately will result in the increase in new memberships, which was the ultimate goal of the NSPE.

4. RESULTS AND DISCUSSIONS

4.1. Determine Goals and Needs

This section will discuss the discoveries made during data collection about the goals and needs of the NSPE members and program participants. The data collection included a series of interviews and surveys given to a number of different people from different sampling frames.

4.1.1. Interview and Survey

In order to determine the participant's goals and needs, a series of interviews and surveys were conducted. The completion of this objective was a big part of this project. Besides compiling and analyzing the data, other tasks included finding the samples from a database and compiling the samples into a readable spreadsheet.

4.1.1.1. Mentor Survey

The mentor survey was sent to all mentors with the hopes of collecting demographic information about them, information on the program, and updating the mentor list.

The first survey sent on November 6, 2001 was sent to 76 mentors (74 via email, 3 via postal mail). 26 of 76 (34%) returned the survey, which is illustrated in Figure 3. Only one response was a refusal to participate in the survey.

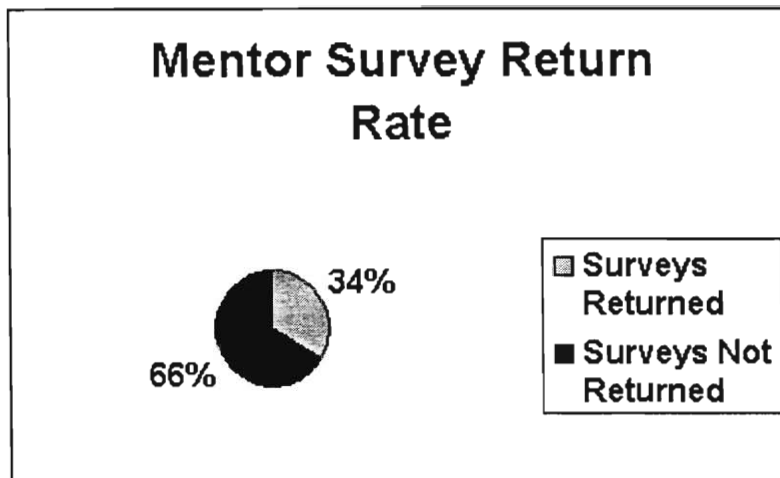


Figure 3 – Mentor Survey Return Rate

The survey was sent out again as a reminder to those who had not returned it the first time it was sent. The poor response rate was an indication that the remaining 66% of those listed are either no longer mentors, not interested in the program, not receiving information from NSPE, or did not respond for another reason. The following describes the questions that were asked in the survey and also provides an analysis of the results obtained for each question.

(1 - 4) The purpose of questions 1 through 4 was to collect data on those listed as mentors. Regardless of whether or not they are still involved in the program, this data will help determine trends with the mentors.

1. Are you: MALE or FEMALE ?
2. Which age range are you in?
0 – 35 , 36 – 45 , 46 – 55 , 56 – 65 , over 65 ?
3. What is your engineering specialty? _____

4. Are you a licensed Professional Engineer? YES [] NO []

Of the 25 respondents, 8 (32%) were female and 17 (68%) were male as represented in Figure 4. The percentage of female NSPE members is considerably lower than the percentage of female NSPE mentors. Females wanting to encourage other females to pursue engineering as a career may be an explanation for the higher percentage of female mentors. One mentor expressed how helpful a mentor would have been to her when becoming a Professional Engineer.

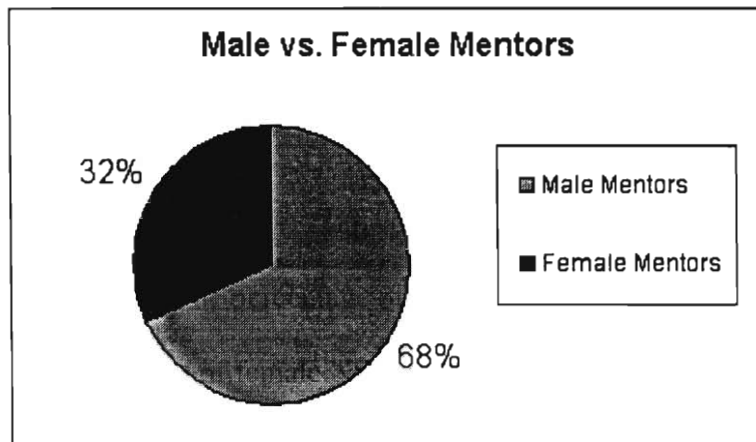


Figure 4 – Male vs. Female Mentors

The average age of an NSPE mentor was found to be 50 years old. The age distribution is illustrated in Figure 5. This is an expected result since at 50 years, one would be in the advanced stages of his/her career and thus would be in a good position to offer advice as a mentor.

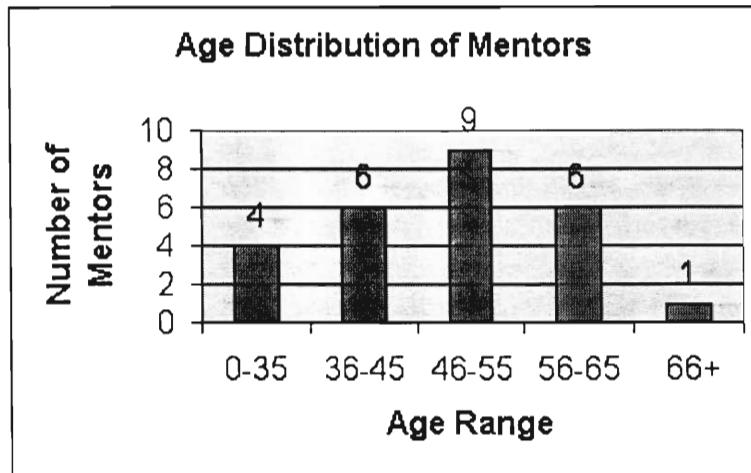


Figure 5 – Age Distribution of Mentors

The graph of age distribution of mentors when compared to the age distribution of the general membership are opposite curves. This shows that even though the membership for that age range is the lowest, there is a higher percentage of active members. This is illustrated in Figure 6.

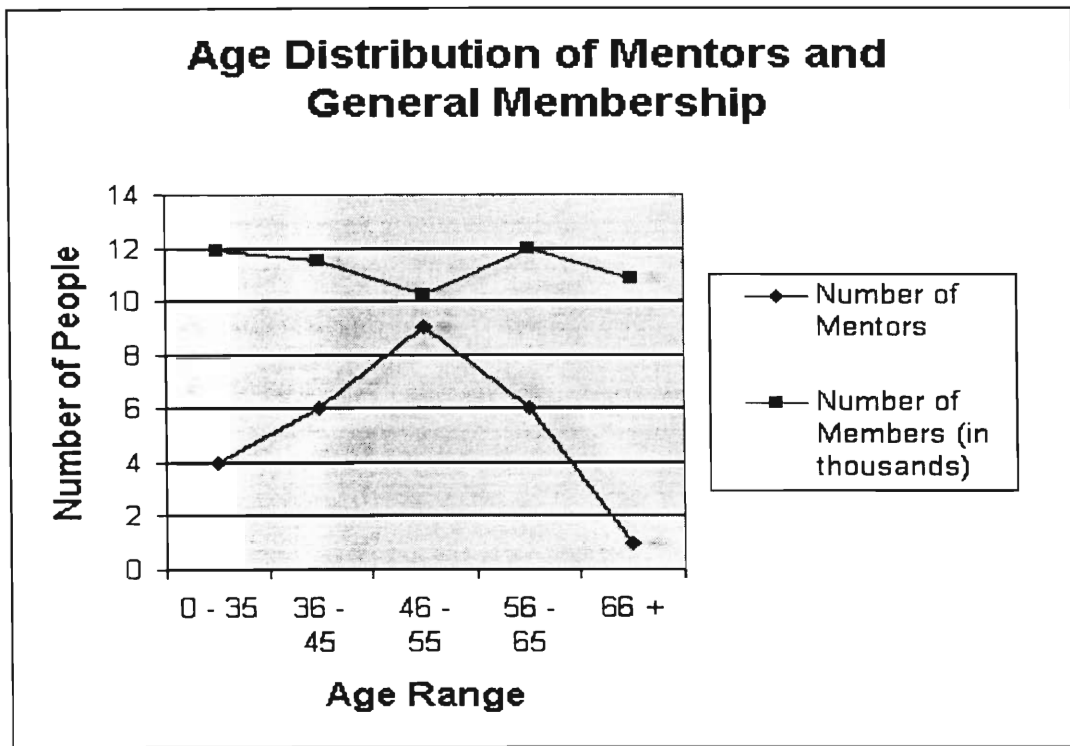


Figure 6 – Age Distribution of Mentors and General Membership

The average age of a female NSPE mentors was found to be 41 years old.

The age distribution is illustrated in Figure 7 and Figure 8. These results are in line with what was expected considering the low percentage of female members in the NSPE, the low percentage of women in the engineering profession in the early to mid 20th century, and the exceptionally low number of females in the NSPE from the time the NSPE was established to the mid 20th century (interview with Sally Brassé, NSPE Program Development, December 17, 2001). 1 (13%) of the mentors is in the 0 – 35 age range, 4 (49%) of the mentors is in the 36 – 45, 3 of the mentors (38%) are in the 46 – 55 age range. These results were expected

considering the age that most people consider themselves experienced Professional Engineers.

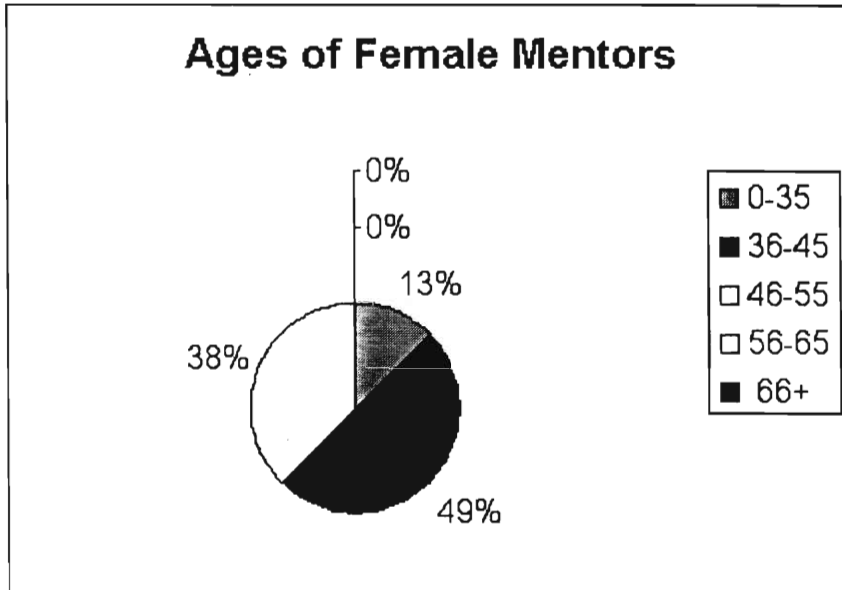


Figure 7 – Ages of Female Mentors

Figure 8 is another illustration of the age distribution of female NSPE Mentors.

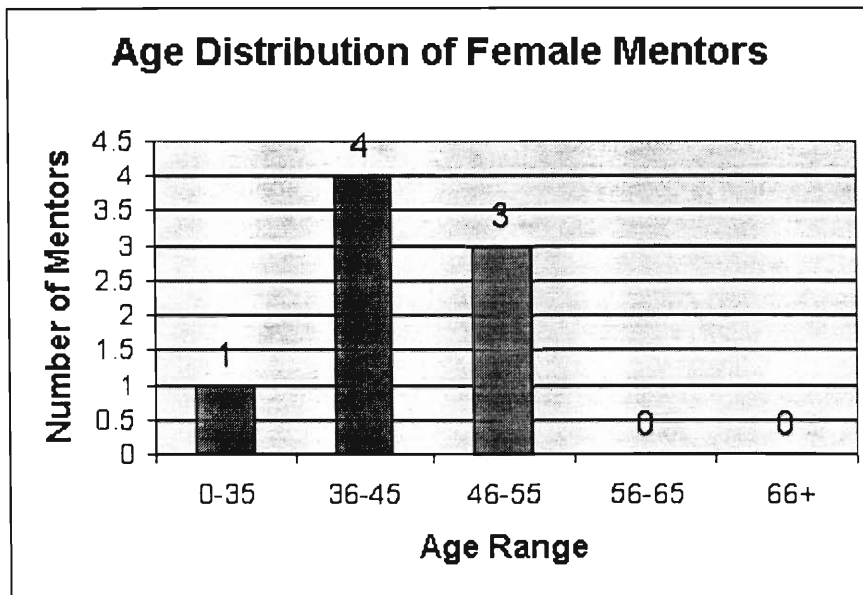


Figure 8 – Age Distribution of Female Mentors

The average age of male NSPE mentors was found to be 55 years old. The age distribution is illustrated in Figure 9 and Figure 10. 3 (17%) of the mentors are in the 0 – 35 age range. 2 (11%) of the mentors are in the 36 – 45 age range. 6 (33%) of the mentors are in the 46 – 55 age range. 6 (33%) of the mentors are in the 56 – 65 age range. 1 (6%) of the mentors is in the 66 + age range. These results were expected with the exception of the 17% of the mentors being in the 0 – 35 age range. Being a mentor in the Mentoring/Licensure Mentoring Program involves helping engineers pass the Professional Engineering exam, it is good that some of the mentors are the right age to have recently passed the test. Younger Professional Engineers can pass on valuable knowledge about current effective studying techniques and resources.

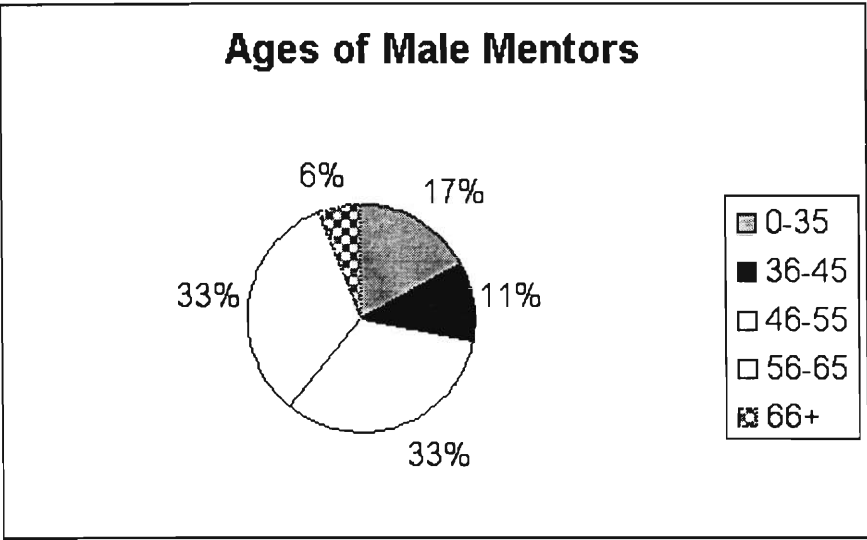


Figure 9 – Ages of Male Mentors

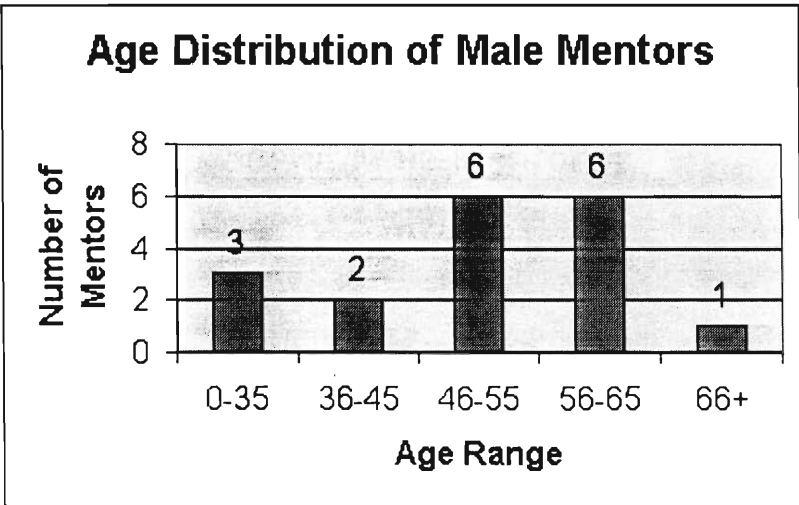


Figure 10 – Age Distribution of Male Mentors

The survey results from question 3 show an uneven distribution among engineering specialties. This was expected considering the scope of the individual mentoring programs. 13 (54%) of the Mentors are Civil Engineers. Civil Engineering is very popular within the NSPE Membership and especially within the Mentoring programs because of the Mentoring/Licensure Program.

Many Civil Engineers become licensed because of the job advancement opportunities in doing so. The distribution of engineering specialties among mentors is illustrated in Figure 11.

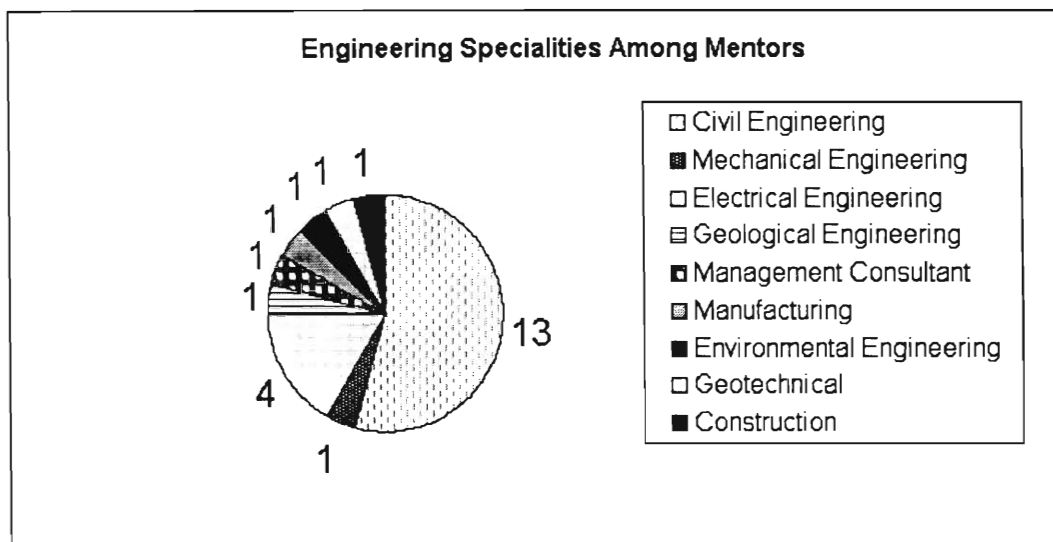


Figure 11 – Engineering Specialties Among Mentors

The response to question 4 was expected. 100 percent of the mentors who returned the survey (all 26) indicated that they are Professional Engineers. Being a Professional Engineer is not a requirement to be a Mentor, however, it is an unwritten understanding.

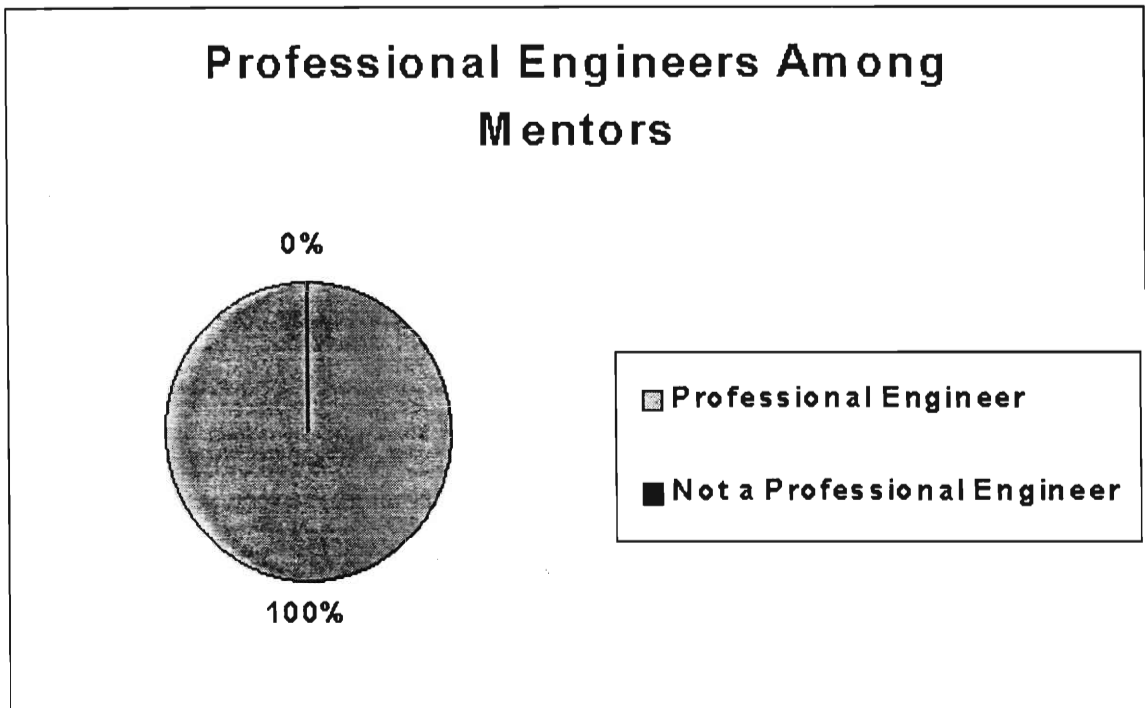


Figure 12 – Professional Engineers Among Mentors

(5) The purpose of Question 5 was to determine if the mentors are still involved in the program and which of the four current programs they are involved in.

5. Are you currently a mentor for one or more of the NSPE's Mentor Programs?

YES please check all that apply

Mentoring/Licensure

Career Transition

On-Line Fora

Mentors in Government

NO

From the responses received, only 3 of 25 (12%) are no longer in the program, illustrated in Figure 13.

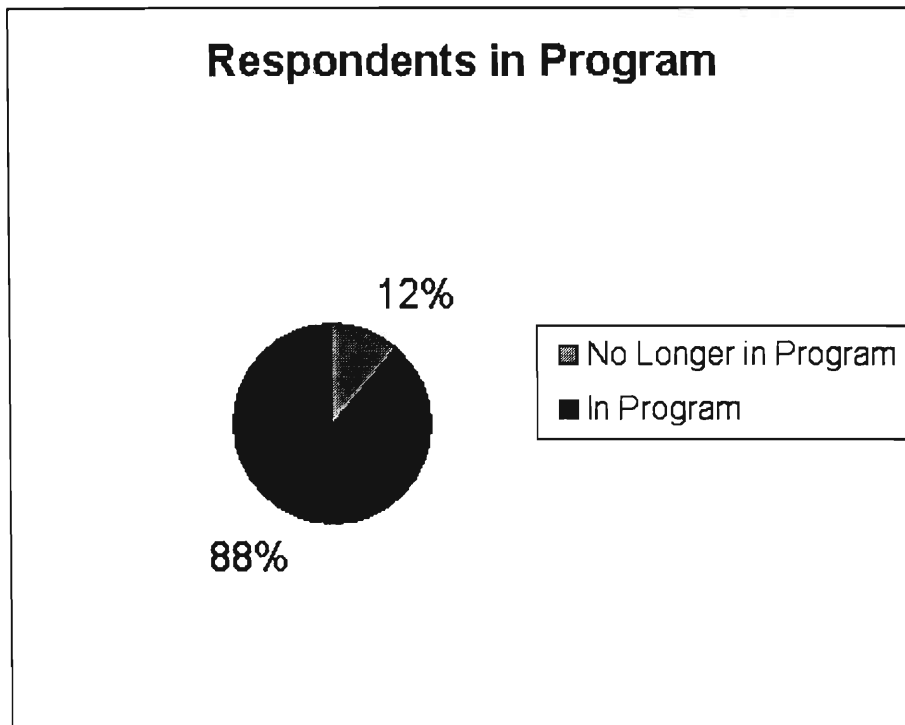


Figure 13 – Respondents who are in Program

Figure 14 is an illustration of the distribution of the number of mentors in each mentoring program.

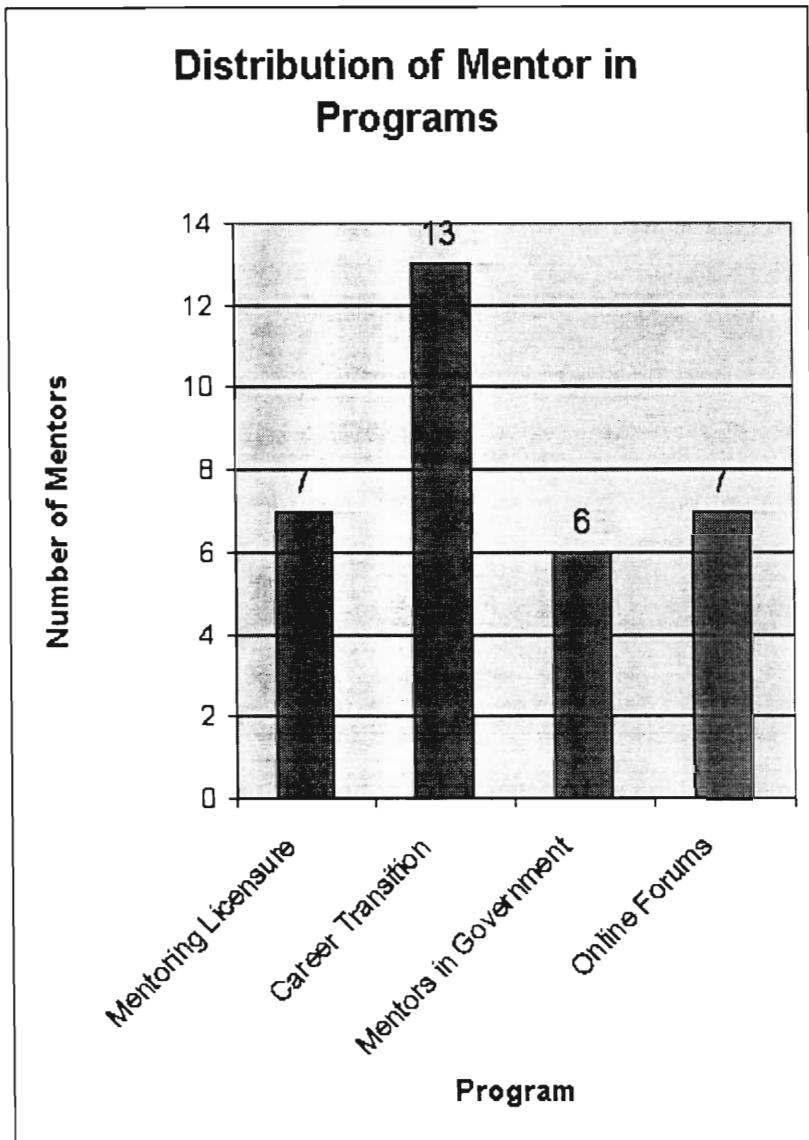


Figure 14 – Distribution of Mentor in Programs

As is evident, the Mentoring/Licensure Program has many more participants than the other programs. The Mentoring/Licensure program is perhaps the most attractive mentoring program to young engineers. This program travels around the country making presentations and recruiting young engineers. The second most popular program is the Career Transition Program. The PEI

division who created the Career Transition Program also does mentor recruiting. Both of the divisions mentioned have mentoring handbooks with information from outside sources. It appears as though the steps taken by these two programs are worth the effort in increasing interest in the programs. The other two programs are lacking in numbers. The Online Fora have 7 mentors and the Mentors in Government Program has 6 mentors.

Most mentors are involved in more than one of the mentoring programs. 5 out of the 7 (71%) people that are involved in the Online Fora are also involved in either Mentoring/Licensure or Career Transition. This is illustrated in Figure 15.

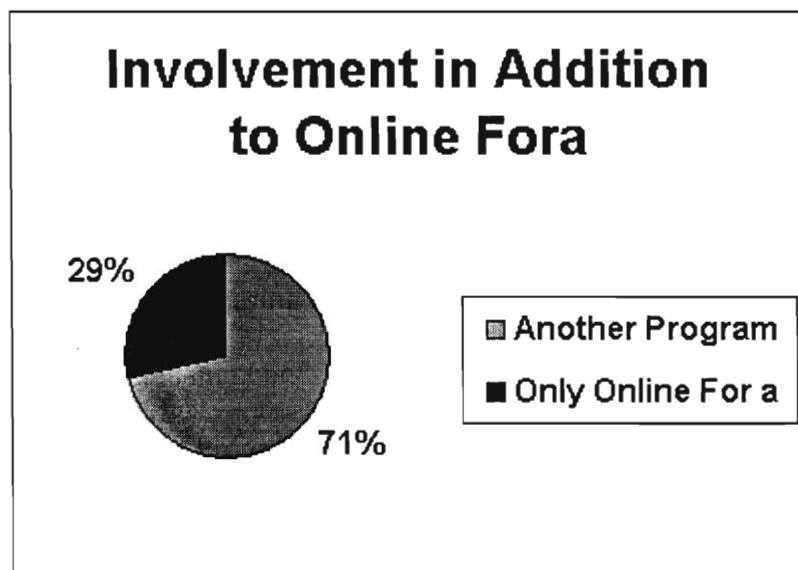


Figure 15 – Involvement in addition to Online Fora

The result in Figure 15 suggests that perhaps the mentors join the Online Fora after being recruited for another program. 3 out of the 6 mentors (50%) that

are involved in the Mentors in Government are also involved in another program.

This is illustrated in Figure 16.

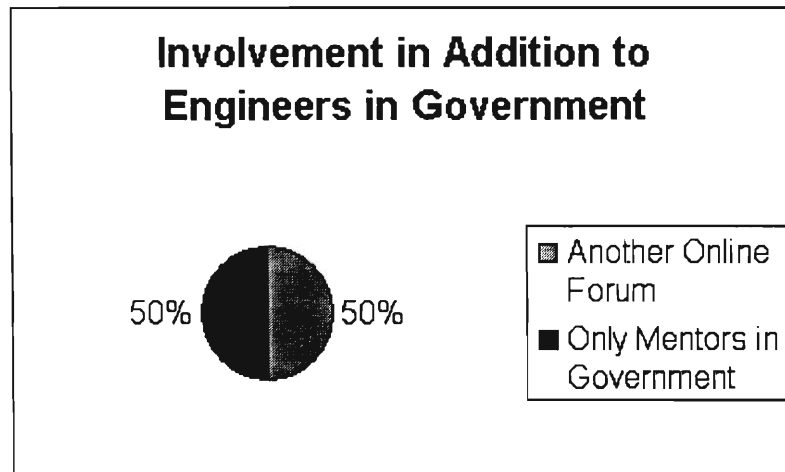


Figure 16 – Involvement in Addition to Engineers in Government

Considering how specialized this mentoring program is combined with the lack of recruitment the low numbers are not surprising.

(6) The purpose of question 6 was to get an idea of how the program was currently doing.

6. How many mentorees are you currently communicating with?

This question will confirm or refute the number of mentorees the NSPE has on file. The plan was to also get contact information for the mentorees from the mentors. Unfortunately, out of the 25 people interviewed only 7 (22%) had mentorees. This is illustrated in Figure 17.

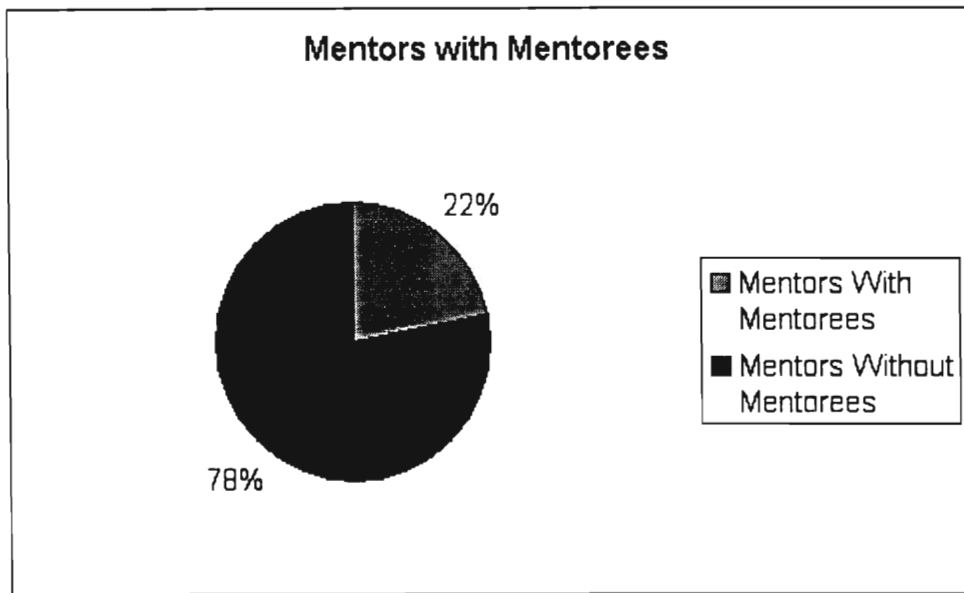


Figure 17 – Mentors with Mentorees

The distribution of the number of mentorees per mentor is illustrated in

Figure 18.

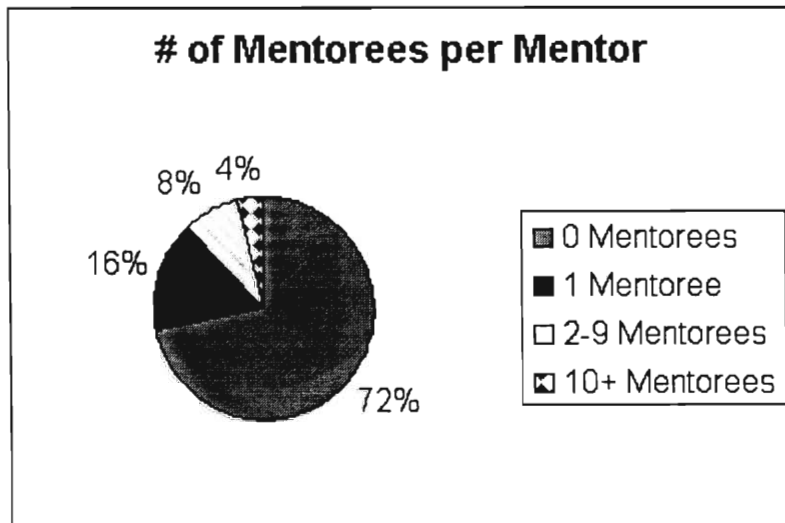


Figure 18 – Number of Mentorees per Mentor

18 (72%) of the mentors have no mentorees, 4 (16%) of the mentors have 1 mentoree, 2 (8%) of the mentors have between 2 and 9 mentorees, and 1 (4%) of the mentors have 10 or more mentorees. This was very surprising and an indication that the mentoring program is not doing very well. Another type of illustration of the Mentor/Mentoree Distribution is Figure 19.

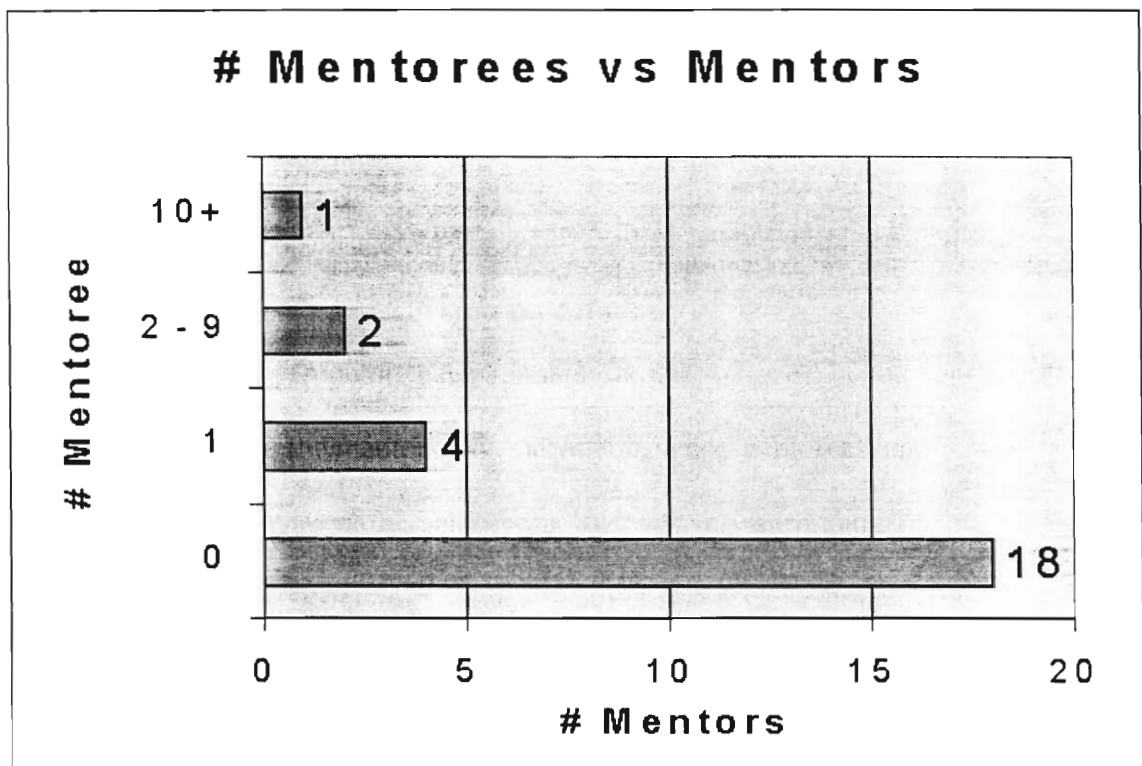


Figure 19 – Number o Mentorees vs. Mentors

Looking more closely at the results, the respondents without any mentorees do not indicate any age dependent trends. Figure 20 is an illustration of the age distribution of mentors who do not have any mentorees.

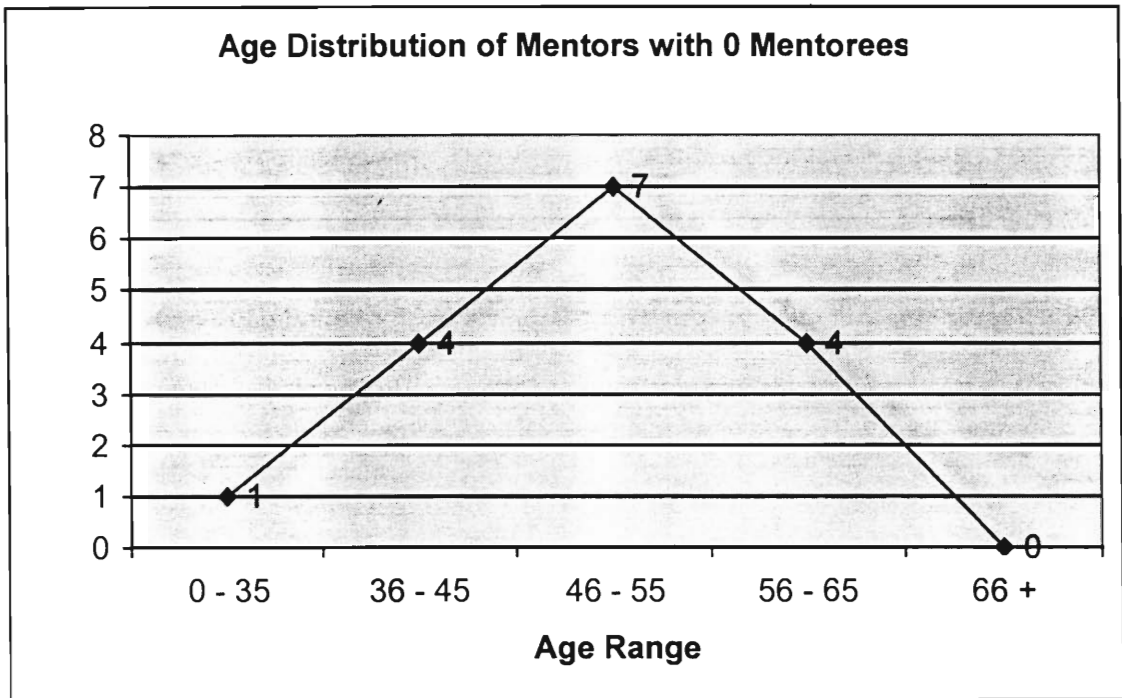


Figure 20 – Age Distribution of Mentors with 0 Mentorees

As is evident from Figure 20, the distribution of mentors with no mentorees is uneven with the majority being in the 46 – 55 age range. Comparing this graph to the total distribution of mentors it shows that there is a decrease in mentorees nearly all across the board. This illustration is in Figure 21.

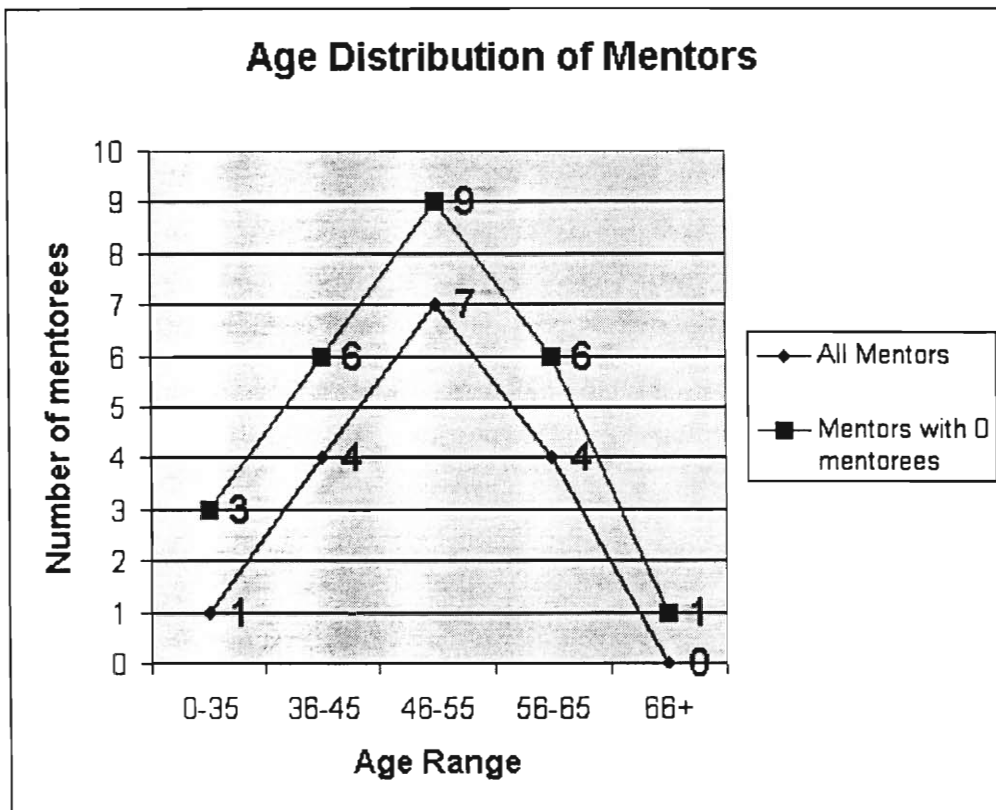


Figure 21 – Age Distribution of Mentors

(7) The purpose of question 7 was to get an idea of what past marketing techniques have been most successful.

7. How did you first hear about the mentoring program?

To show the data received in a more concise way the responses have been put into the following categories:

- Approached by NSPE Member / Employee
- Began Mentoring before Programs Began
- Involved in Founding Program
- NSPE Meeting/Conference
- Web

The above topics were not given as choices to those surveyed. These categories were made up after the results were received as to not sway the respondents' answer by prompting them to choose from a list. The answers were categorized based on the topic that was addressed. 9 (39%) mentors said that they found out about the NSPE Mentoring Programs through an NSPE Meeting or NSPE Conference. 8 (35%) mentors said that they found out about the NSPE Mentoring Programs by an NSPE Member or NSPE Employee. 3 (13%) mentors said that they heard about the NSPE Mentoring Programs by being involved in founding one of the programs. 2 (9%) mentors said that they found out about the NSPE Mentoring Programs from the Web. 1 (4%) mentor said that they found out about the NSPE Mentoring Programs by being a mentor before the programs were started. The distribution within these categories is illustrated in Figure 22.

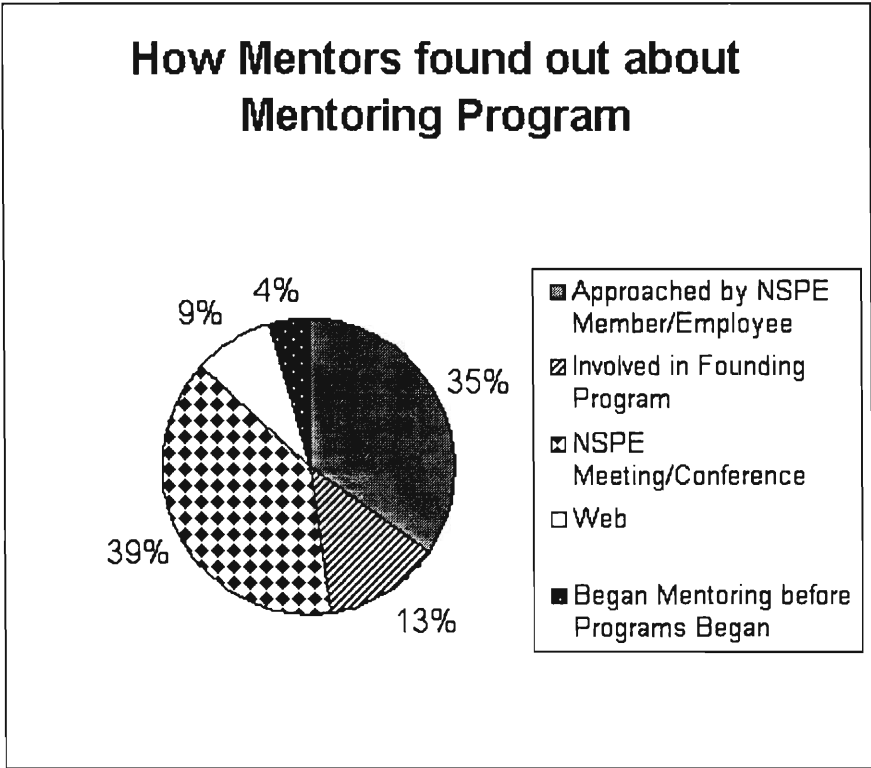


Figure 22 – How Mentors found out about Mentoring Program
 Another type of illustration of the same data is seen in Figure 23.

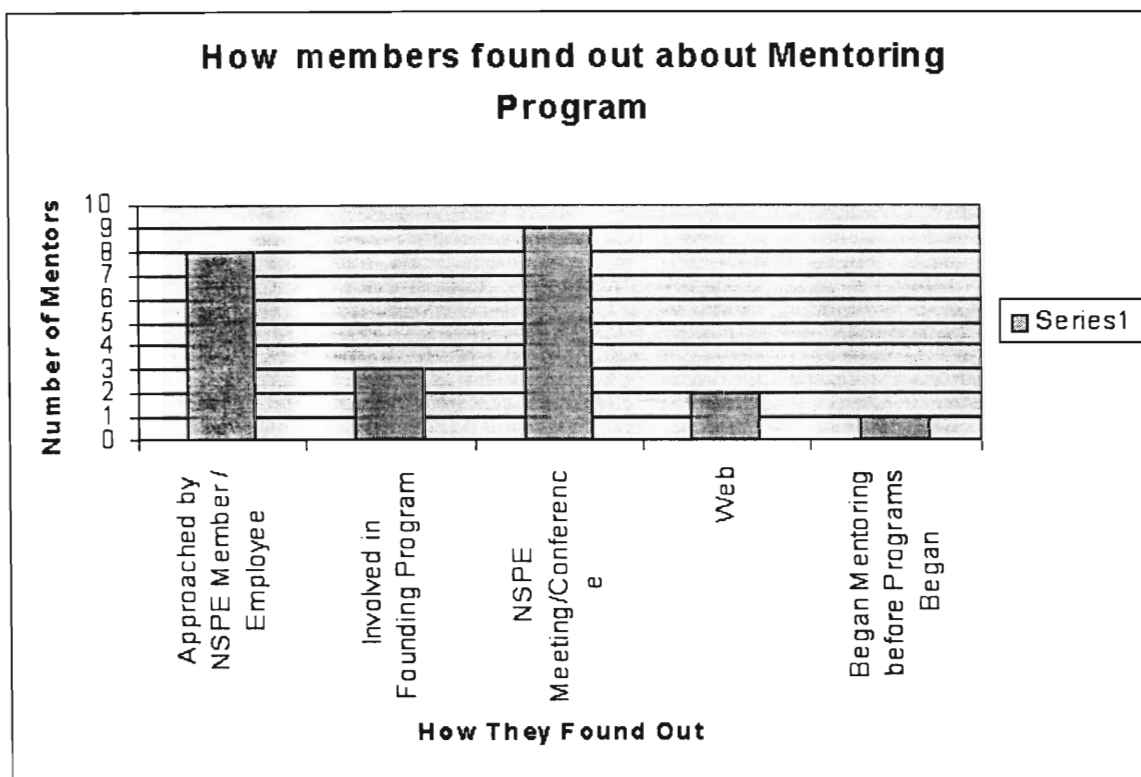


Figure 23 – How members found out about Mentoring Programs

As is evident from Figure 23, the most effective recruitment methods are NSPE conferences and meetings and by NSPE staff approaching individual people. Both of these methods have a down side. The NSPE conferences and meetings are only for NSPE members to attend which limits the numbers and types of people that can be reached. For example, most NSPE members who attend the conferences are already Professional Engineers. The other effective method of recruiting is having the NSPE staff approach people individually. This method is indeed effective but not efficient. The NSPE staff has other jobs they are employed to do besides calling individual members for recruitment purposes. Also, if the NSPE were to contact each member individually, then those contacted

would feel obligated to join the program which would not reflect their true interest. The fact that the other two methods of recruitment were not as effective may be because the recruitment effort was lacking for the mentoring programs. The comments from the mentors who returned the survey are listed anonymously in APPENDIX T.

(8) The purpose of question 8 is to find out what attracts people to mentor in the NSPE programs. We can use this data to see what about the program would be the best thing to advertise about.

8. Why did you become a mentor? _____

The data received from this question were categorized into the following topics as reasons for joining:

- To Help Others
- For the Profession
- To help NSPE
- Felt Forced/Committed
- For Personal Satisfaction

As with question 7, those surveyed were not given this list to chose from. The most popular reason was “To Help Others” with 38% of the vote with “Felt Forced/Committed” being the second most popular reason with 27% of the vote. The distribution is illustrated in Figure 24 and Figure 25.

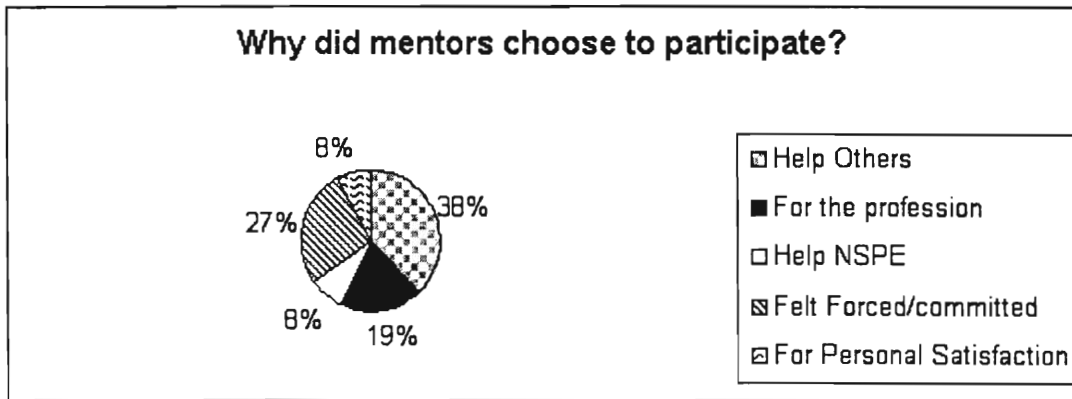


Figure 24 – Why did mentors choose to participate? (Pie Chart)

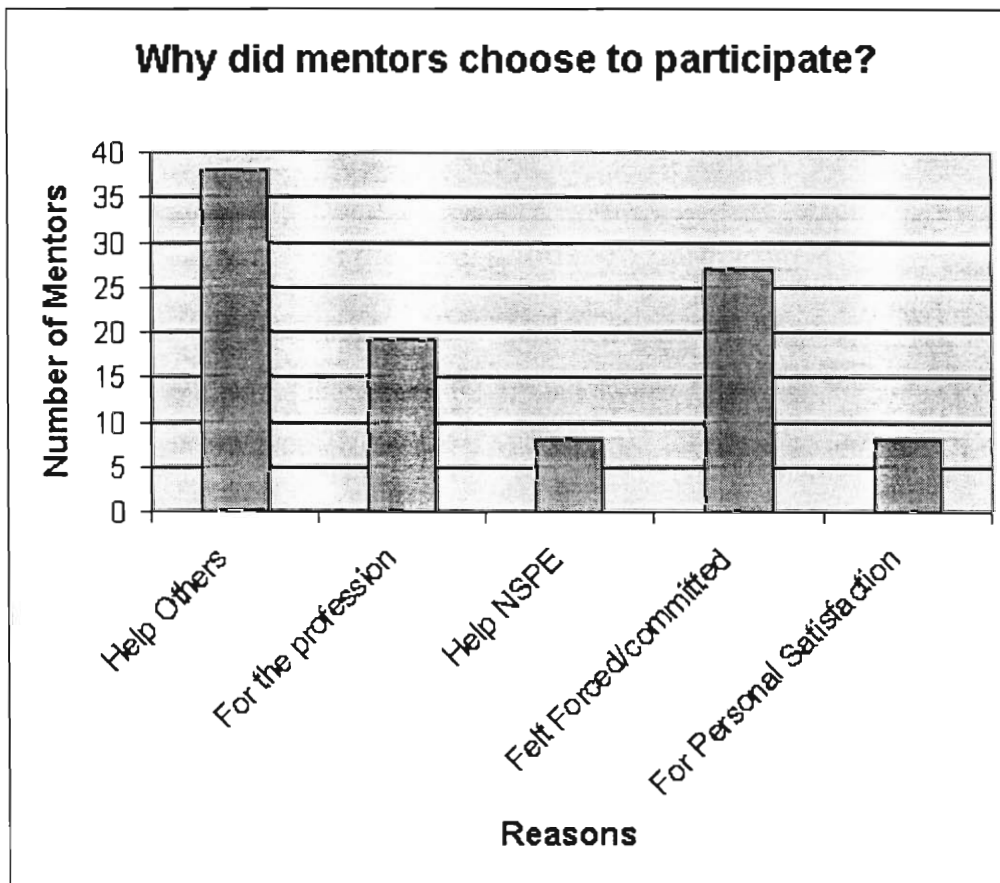


Figure 25 – Why did mentors choose to Participate (Bar Graph)

The most popular reason (to help others) was expected, however, the second most popular reason (felt forced/committed) was not expected prior to the

survey. After learning of how popular the NSPE staff contacts were in recruiting mentors the number of people who felt pressured or committed to participating was not surprising.

(9) The purpose of question 9 was to ultimately get more information from the mentors who were willing to talk over the telephone.

9. Would you be willing to participate in a more in-depth phone interview (approximately 10-15 minutes) with the WPI Interns?
 YES NO

Of the 25 mentors who returned their surveys, 24 (96%) agreed to a telephone interview. An illustration of these results is in Figure 26.

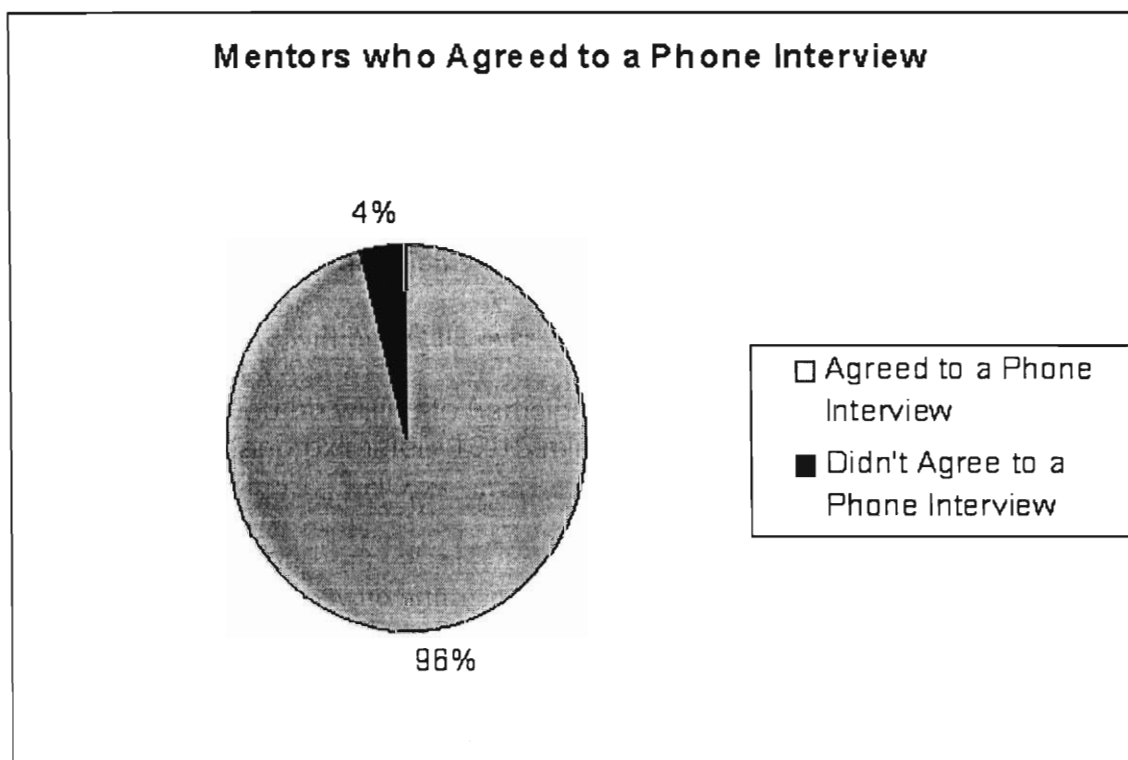


Figure 26 – Mentors who Agreed to a Phone Interview

The results of those interviews are in the next section. The following sections details the survey questions asked to those mentors who did not take part in a phone interview and to those who did.

4.1.1.1.1. Mentor Phone Interview Refusals

This section contains the questions asked via email to those who refused a telephone interview. Out of the 37 replies from mentors received, only 1 out of 25 refused a phone interview.

A second survey was sent to all of the mentors. The point of the second survey was to ask questions about issues that were raised between the time the first survey was sent off and the cut-off time for accepting responses for that survey. The survey for mentors who refused a phone survey was slightly different than the survey for those who agreed to a phone interview. Below are the questions for the survey.

The purpose of question 1 was to get an idea of how highly mentors think of online mentoring considering that the bulk of the mentoring would be done online and that the scope of our project deals with mostly the online aspect of the mentoring program.

1. In general, how valuable do you think a strictly online mentoring relationship would be? 1 (not at all) 2 (fairly valuable) 3 (extremely valuable)

The purpose of question 2 is to find out how comfortable the mentors would be mentoring online.

2. As a mentor – are you comfortable with an online mentoring relationship?

- 1 (very uncomfortable)
- 2 (mildly uncomfortable)
- 3 (fairly comfortable)
- 4 (very comfortable)
- 5 (most comfortable)

The one mentor who refused a telephone interview did not respond to the second survey, therefore, there is no data to analyze from this survey. Also, we prepared a set of questions to ask over email in place of the phone interview questions. Most of them are the same, but formatted differently to ensure the answers are as clear as possible.

(1-2) The purpose of the following first two questions was to identify a relationship between people joining NSPE and participating in the mentoring programs. Does an NSPE member wait a certain number of years before become a mentor, is the number of years they wait a trend?

1. How long have you been a member of NSPE?

2. How long have you been an NSPE mentor?

(3) The purpose of question 3 was to find out how many of the mentors have not mentored in the program yet.

3. How many people have you mentored in the past?

(if answer is 0 skip to question 6)

(4) The purpose of question 4 was to find out if one of the programs was very popular in the past, which would lead to more research as to why that changed.

4. What practice division was it for?

- Mentoring/Licensure (PEC)
- Career Transition (PEI)
- On-Line Fora
- Mentors in Government (PEI)

(5) The purpose of question 5 was to find out if mentorees were leaving the program because they achieved their goal, were unsatisfied with the relationship, or other reasons.

5. Why did your past mentorees leave the program?

(6-8) The purpose of questions 6-8 was to find out from the mentors what the programs are lacking and what should be changed. They deal with the mentorees on a level that the NSPE does not. Their input is very valuable.

6. How can we make the program more valuable for the mentors?

7. How did you think we can make the program more valuable for the mentorees?

8. How do we make the program more attractive to perspective mentorees?

This survey was not sent to the one respondent who refused a telephone interview. The mentor answered the first survey with enough explanation that contacting him further was not necessary.

4.1.1.1.2. Mentor Phone Interviews Given

The second survey was sent to all of the mentors who agreed to a telephone interview and the survey included a question asking for an available day, time, and phone number as well as the questions asked to those who refused a telephone interview. The point of the second survey was the same as for the mentors who refused a telephone interview (to ask questions for issues that were raised between the time the first survey was sent off and the cut-off time for accepting responses for that survey). Below are the questions from the survey.

The purpose of question 1 was to get an idea of how highly mentors think of online mentoring considering that the bulk of the mentoring would be done online and the scope of our project deals with mostly the online aspect of the mentoring program.

1. In general, how valuable do you think a strictly online mentoring relationship would be? 1 (not at all) 2 (fairly valuable) 3 (extremely valuable)

Of those surveyed, 0 mentors said that online mentoring relationships were not valuable at all, 13 (93%) said that online mentoring relationships were fairly valuable, and 1 (7%) said that online mentoring relationships were extremely valuable. This result is very positive for our project. This shows that the end product of the project will be useful according to the mentors. An illustration of the response to this question can be seen in Figure 27.

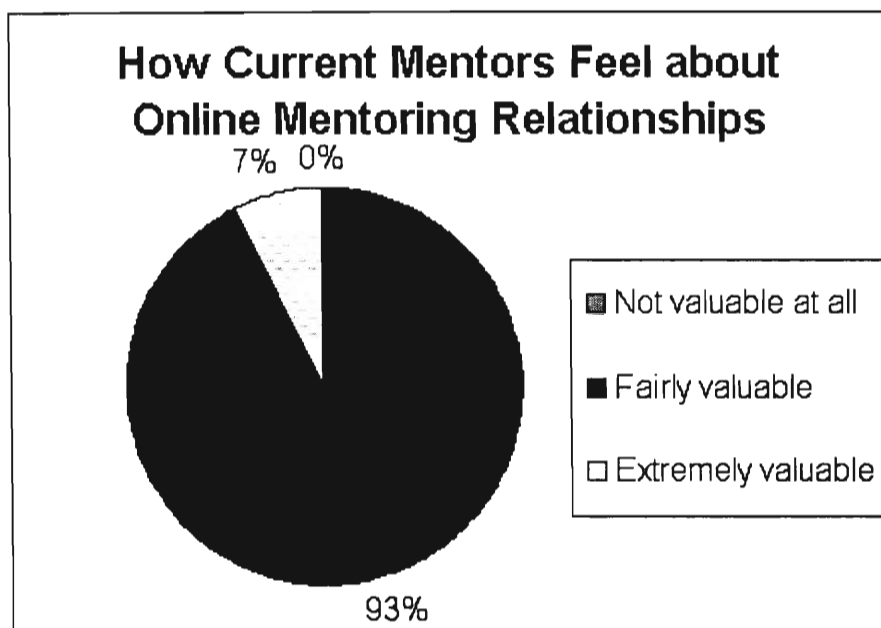


Figure 27 – How Current Mentors Feel about Online Mentoring Relationships

The purpose of question 2 was to find out how comfortable the mentors would be mentoring online.

2. As a mentor – are you comfortable with an online mentoring relationship?

- 1 (very uncomfortable)
- 2 (mildly uncomfortable)
- 3 (fairly comfortable)
- 4 (very comfortable)
- 5 (most comfortable)

Of those surveyed, 1 (7%) mentor rated their comfort level with online mentoring as being very uncomfortable, 0 rated online mentoring as being mildly uncomfortable, 8 (57%) rated online mentoring as being fairly comfortable, 5 (36%) rated online mentoring as being very comfortable, and 0 rated online

mentoring most comfortable. These results are positive for our project as they indicate a general comfort level to using the Engineers' Café. The one person that rated online mentoring as very uncomfortable is in the age group of 56-62 which is understandable as computers were not widespread during the time of this generation.

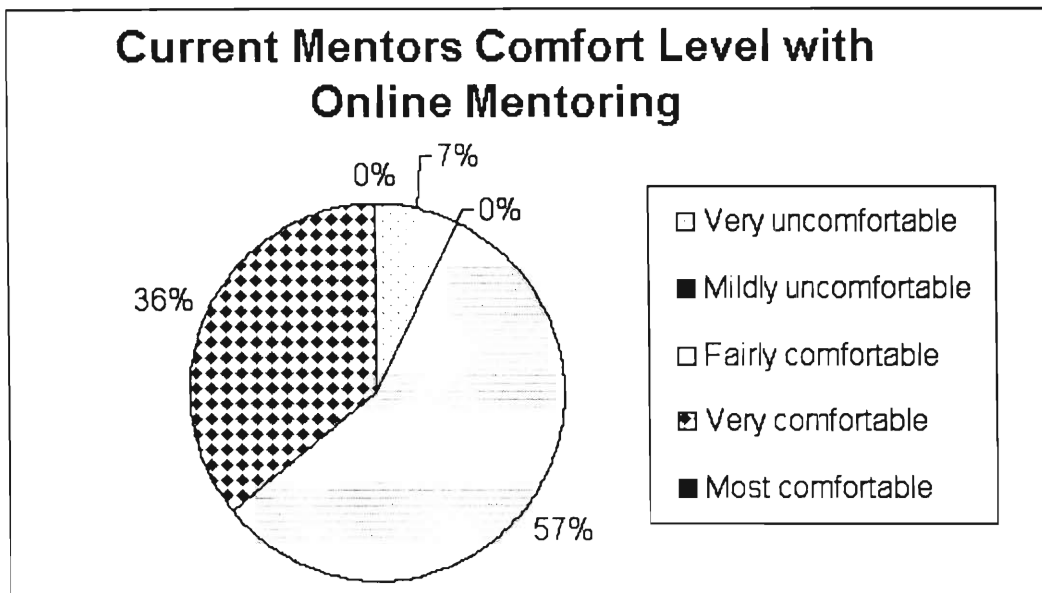


Figure 28 – Current Mentors Comfort Level with Online Mentoring

(3) The purpose of question 3 was to find out what day and time to contact them as well as what phone number to contact them at.

3. Available times for telephone interviews?

Monday (11/12) anytime between 9am – 5pm.

Tuesday (11/13) anytime between 9am – 5pm.

Wednesday (11/14) between 9 – 10am and 1 – 5pm.

Friday (11/16) anytime between 9am – 5pm.

Name: _____.

Please indicate a time _____.
Please indicate a phone number _____.

The results of this question are not relevant to the analysis of the data and hence will not be included in the report.

Questions asked

This section will contain the questions asked to the 25 mentors who agreed to have a phone interview along with the results of those interviews.

(1-2) The purpose of the first two questions is the same as for the last survey, to identify a relationship between the time someone is an NSPE member and the time they become an NSPE mentor.

1. How long have you been a member of NSPE?
2. How long have you been an NSPE mentor?

Most mentors have been NSPE members between 31-50 years. This is not surprising. It confirms the fact that not many members become mentors soon after joining the NSPE. The results from this question can be seen in Figure 29.

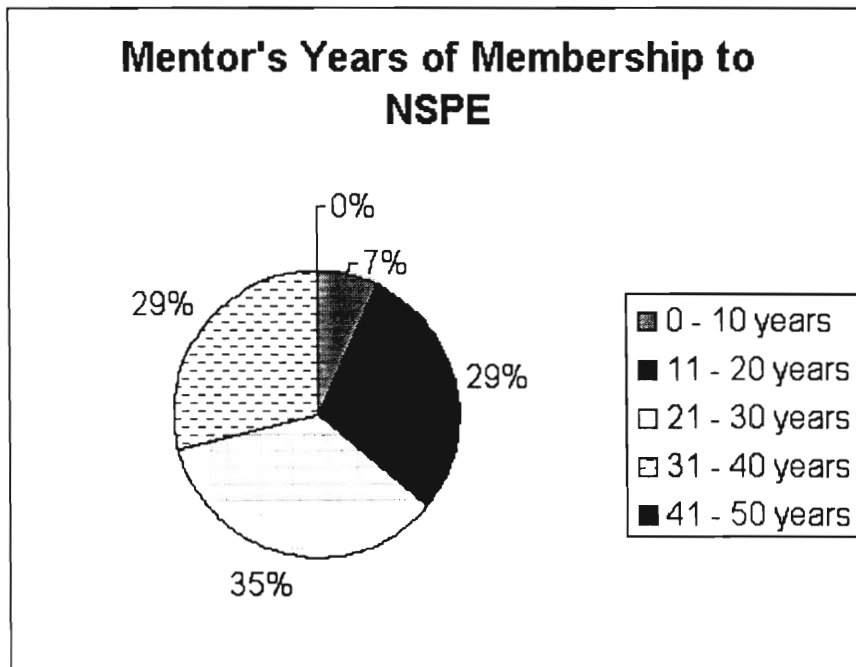


Figure 29 – Mentor' Years of Membership to NSPE

The Mentoring Programs are fairly new. They were all started within the last five years. The majority of the mentors interviewed, 5 (46%) said that they have been mentors less than 1 year. 4 (36%) of those interviewed said that they have been mentors for between 1 - 2 years. 2 (18%) of those interviewed said they have been mentors in the programs for between 5 – 6 years. These results were surprising. They indicate that not many of the mentors involved with the program when it started are still involved.

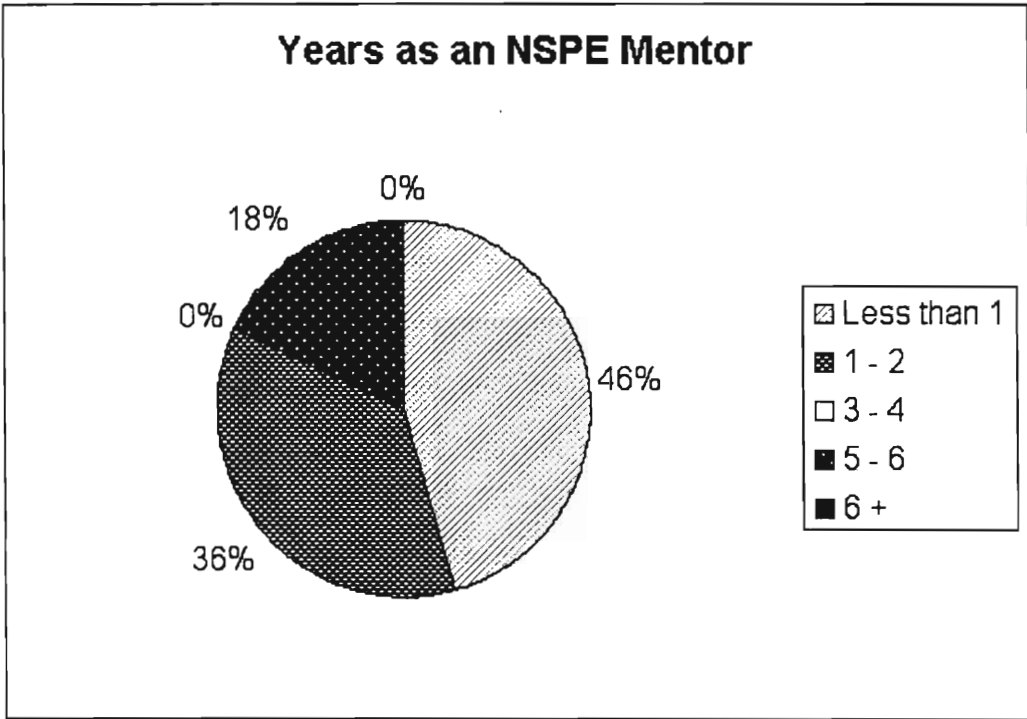


Figure 30 – Years as an NSPE Mentor

3. How many people have you mentored in the past?

The majority of the mentors interviewed have never mentored an NSPE member. Their experience in the program is not what they expected. The program is not doing well. In the past year the recruitment for mentors has been successful, much more successful than the recruitment for mentorees. These results are illustrated in Figure 31.

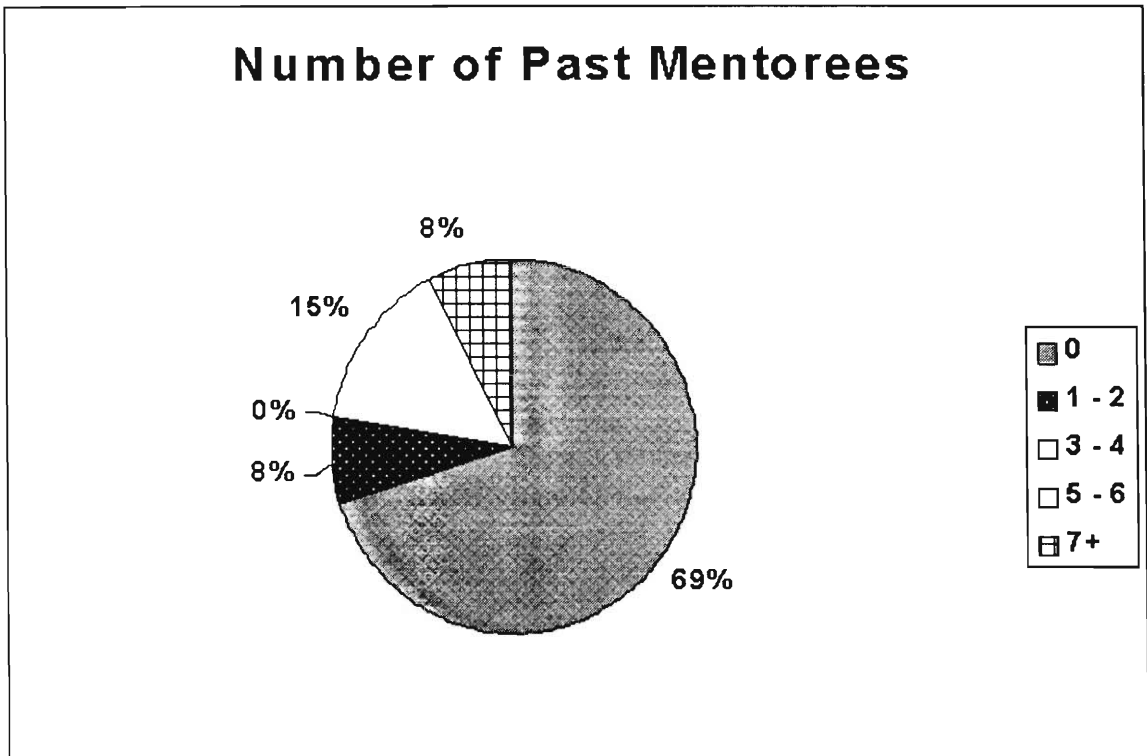


Figure 31 – Number of Past Mentorees

4. What practice division was it for?

The results from this question were surprising. The results were distributed much more evenly than expected. The Ask a PE web forum was a little more popular than the other practice divisions.

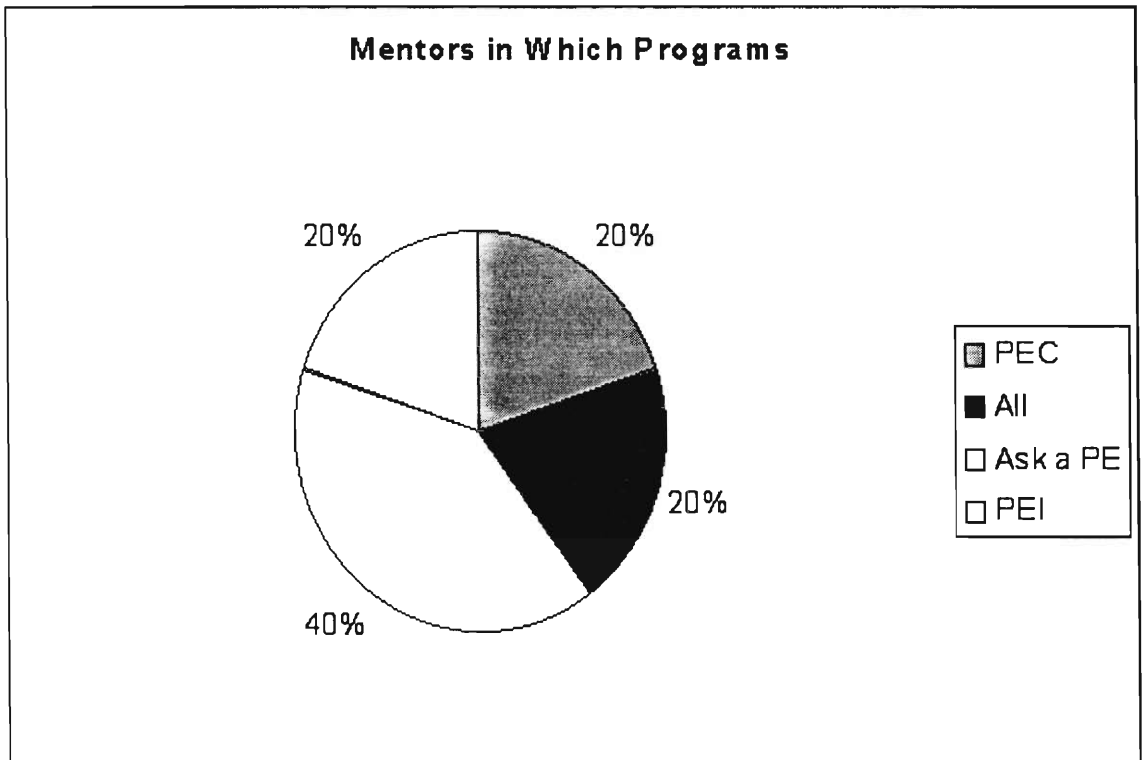


Figure 32 – Mentors in Which Programs

5. Why did your past mentorees leave the program?

This question did not apply to many of the mentors because most of the mentors have never mentored anyone in the NSPE mentoring programs and because of the nature of the Ask a PE web forum. The responses are in Figure 33.

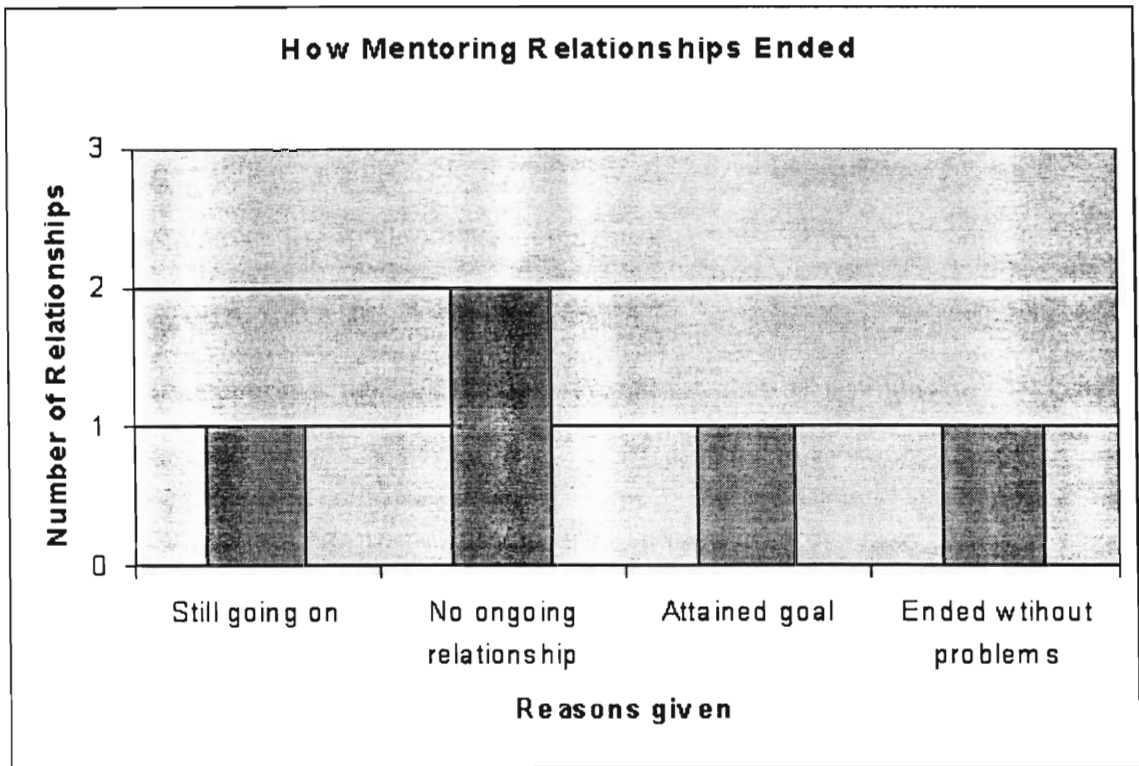


Figure 33 – Ho Mentoring Relationships Ended

6. How can we make the program more valuable for the mentors?

The results from this question were very spread out. This means that there is no quick and easy way to improve the program for all mentors by changing one aspect of the program. The results are illustrated in Figure 34. All of the answers to this question are written out anonymously in APPENDIX T.

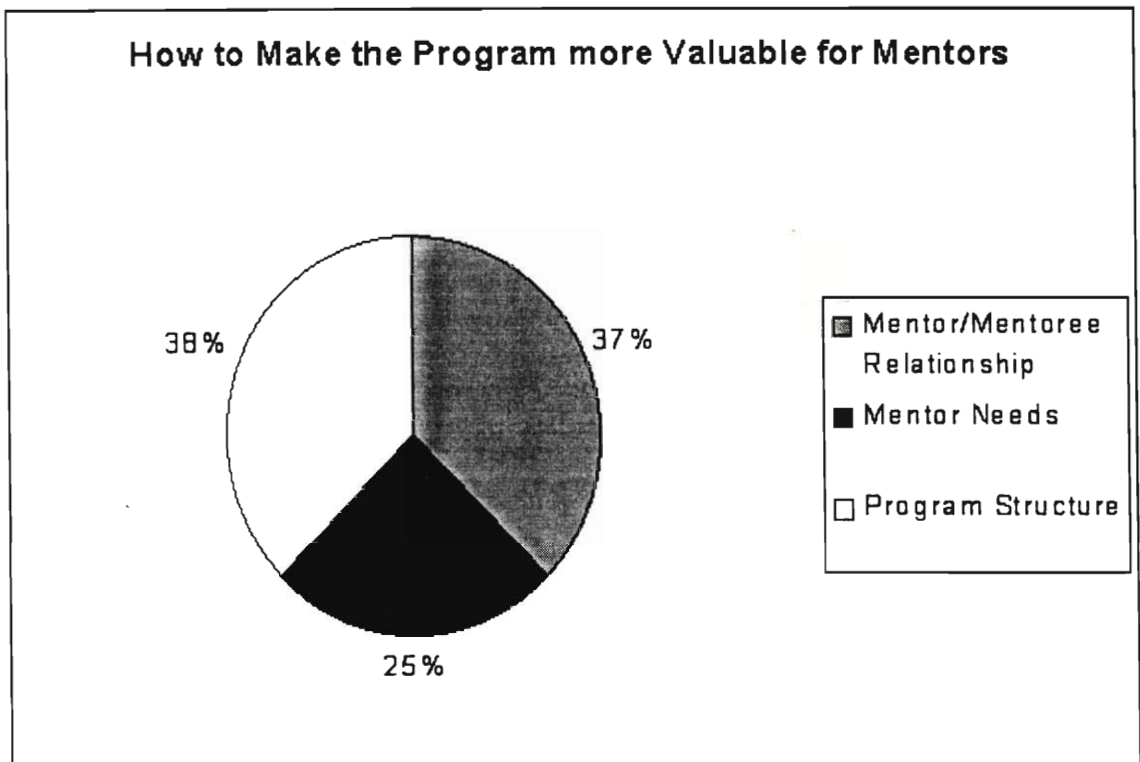


Figure 34 – How to Make the Program more Valuable for Mentors

7. How do you think we can make the program more valuable for the mentorees?

The results for this question were very similar to those for the last question without the input on the mentor’s needs. These ideas do not represent how the mentorees would have answered the same question, but only the opinion of the mentors. The results are illustrated in Figure 35. All of the answers written out anonymously can be found in APPENDIX T.

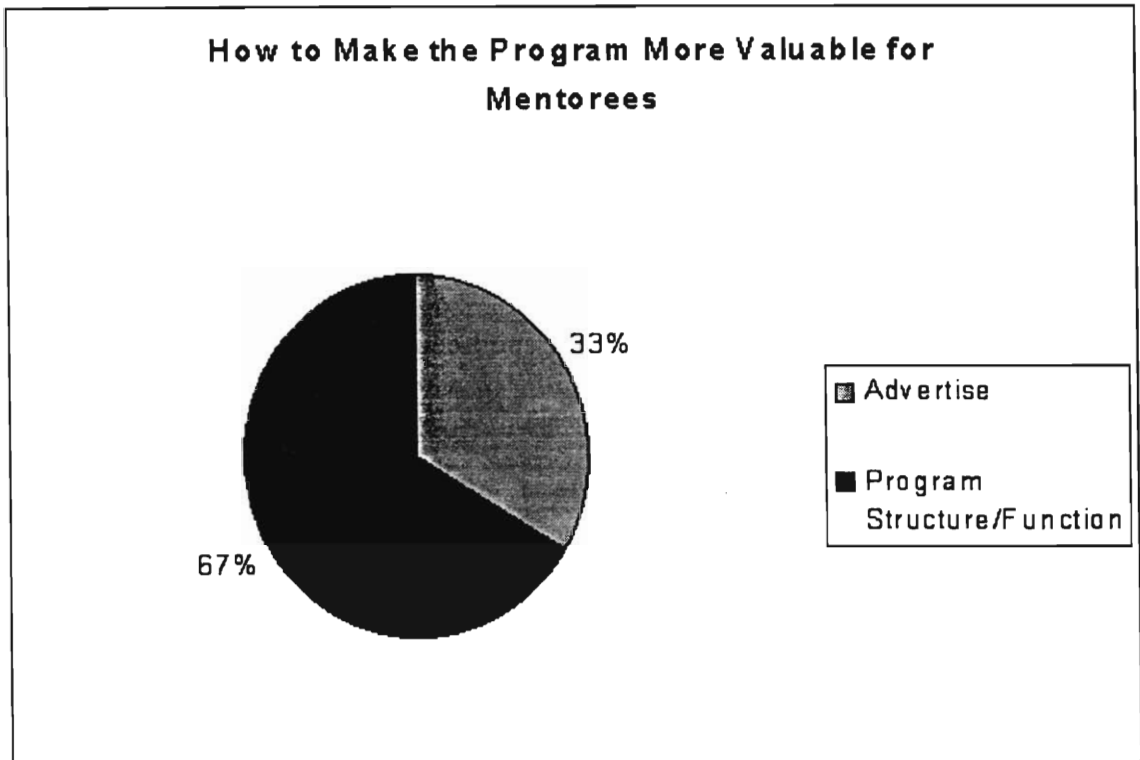


Figure 35 – How to Make the Program More Valuable to Mentorees

8. How do we make the program more attractive to perspective mentorees?

The results to this question were what we expected. The mentors had some very good ideas. 100% of the answers came down to marketing strategy and method. These results are illustrated in Figure 36.

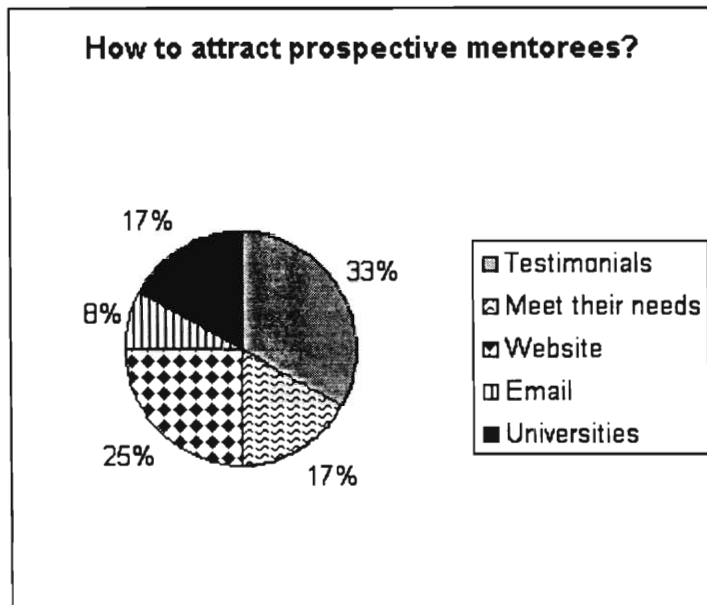


Figure 36 – How to attract Prospective Mentorees

4.1.1.2. Mentoree Survey

This survey was written and sent out to 17 mentorees, but only one was returned. The data is not representative. The answers can be found in APPENDIX U but will not be analyzed here.

(1-4) The purpose of questions 1-4 is to get general information about the mentoree to use for identifying trends.

1. Last Name _____
2. First Name _____
3. Gender Male
 Female
4. Age under 35
 36-45
 46-55

- 56-65
- over 66

(5-6) The purpose of questions 5-6 was to determine what program the mentoree is involved in and why. This could help with the marketing of the programs as well as with the formation of the new integrated mentoring program (to ensure the retention of the well liked features of the current programs).

- 5. Mentoring Program that you are involved in
 - Licensure
 - Career Transition
 - Mentors in Government

- 6. Reason for Involvement:
-

(7-9) The purpose of question 7-9 was to compare what the mentorees expected to what actually happens and how they communicate. The data from these questions would give up a little insight into how the program is living up to the mentorees expectations as well as how likely the mentorees would be to use the online forum/email part of the new mentoring program.

- 7. How many times have you communicated with your mentor over the past 6 months?
- 8. How many times would you like to communicate?
- 9. What means of communication do you use e.g. phone, email?

(10-11) The purpose of questions 10-11 are just to rate the program as it is. This is the easiest way to get an idea of how well the programs are suiting the mentorees. There is also a space for comments under each other questions in case the mentoree would like to communicate something else to us about the programs.

10. How would you rate your experience in the mentoring program, on a scale of 1-5?

- 1 - Poor
- 2
- 3
- 4
- 5 – Best

Comments:

11. How would you rate the program overall, on a scale of 1-5?

- 1 – Poor
- 2
- 3
- 4
- 5 – Best

Comments:

(12-13) The purpose of questions 12-13 was to get ideas on what to add to the new mentoring program. As part of the mentoring model we have created the mentorees will be filling out an evaluation once every three months and it is important to find out how they would prefer to fill it out. Also, asking the mentorees what kinds of services they would like the NSPE to offer is the best way find out what the program is lacking.

12. Would you prefer filling out a Program Evaluation form online?

Yes

No

13. What other types of services related to mentoring would you like the NSPE to offer, or what service do you anticipate a need for in the future? _____

(14-15) The purpose of questions 14-15 was to find out if the mentorees would be willing to be interviewed by us and to find out how they would like to be contacted for future reference.

14. Would you be willing to participate in a phone interview (10-15 min) with the WPI Interns?

Yes

No

15. Do you prefer future contact via email or phone?

Email

Phone

4.1.1.3. General Membership Survey

The purpose of question 1 was to find out how much of the general membership has heard of the mentoring programs. Also, this question will show who is currently participating in the programs and who has considered participating in the programs.

1. Are you familiar with the NSPE Mentoring programs? (Yes/No)

The results to this question were much worse than expected. Only 2 (17%) of the general members have heard of the NSPE mentoring programs.

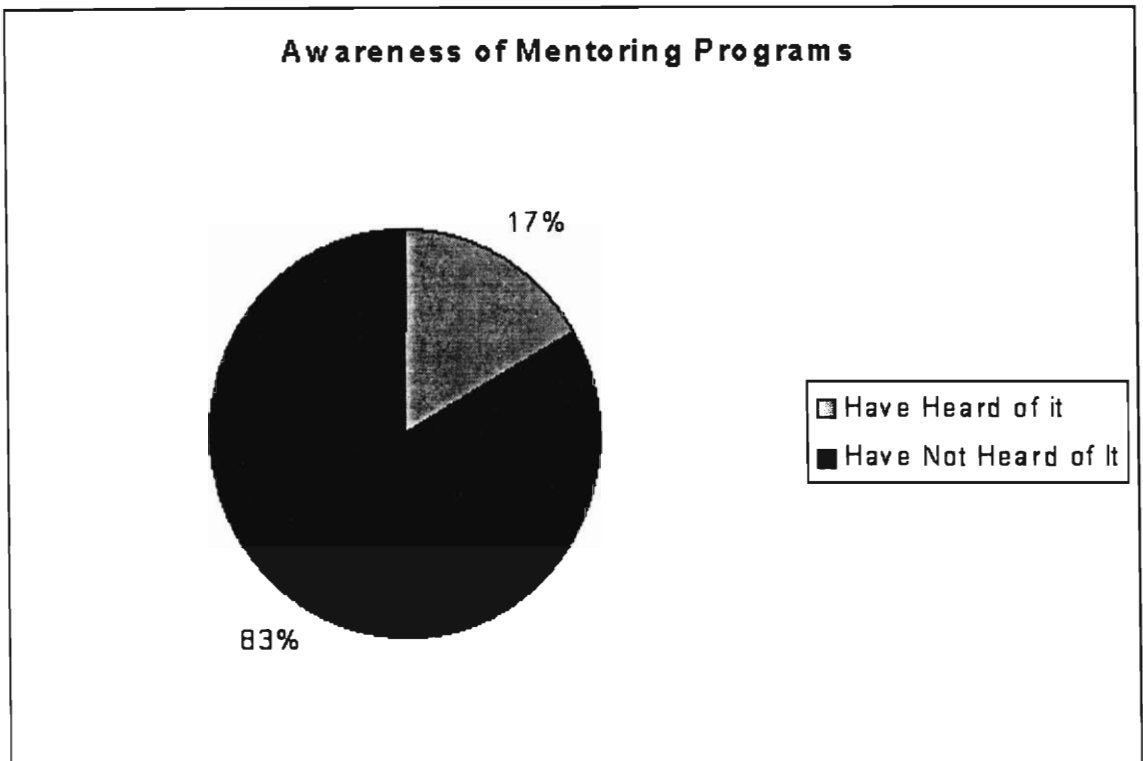


Figure 37 – Awareness of Mentoring Programs

1.1 If you answered "Yes" to question 1.:

- i) Are you currently participating in any of the programs? (Yes/No)
- ii) Have you considered participating in any of the programs? (Yes/No)
- iii) Why of why not?

Of the 17% of those who are familiar with the mentoring programs 0% of them are currently participating in them. None of them have considered participating in any of the programs. These results are illustrated in Figure 38 and Figure 39.

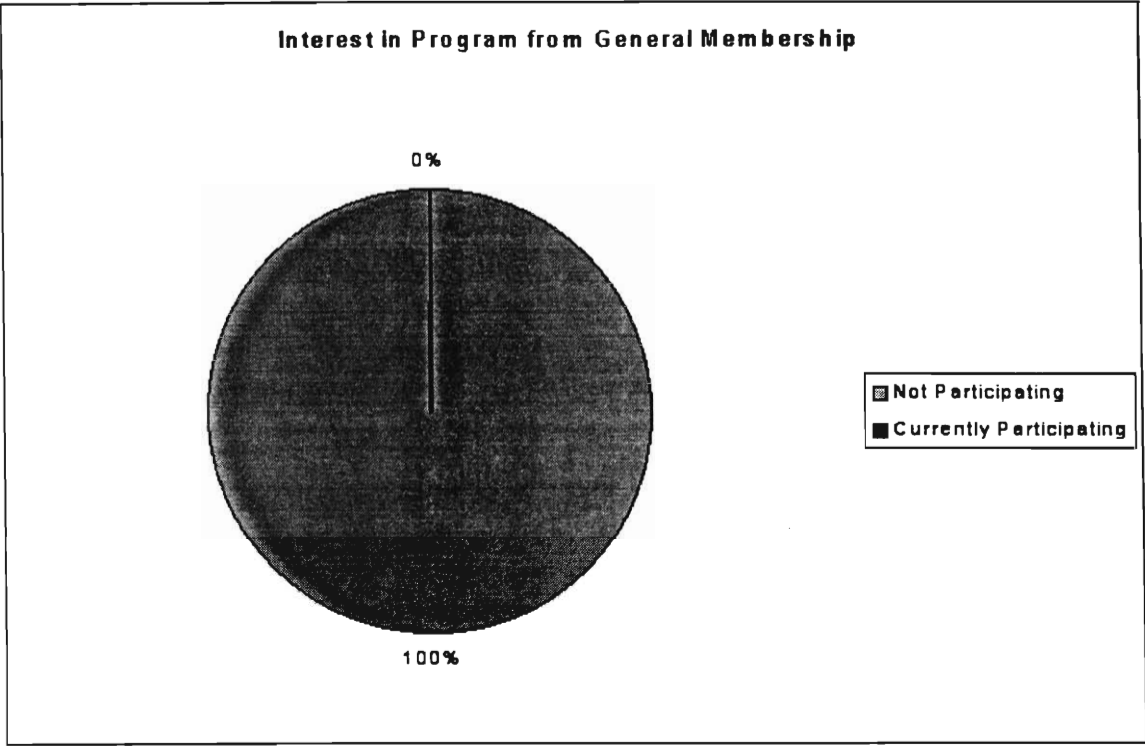


Figure 38 – Interest in Program from General Membership

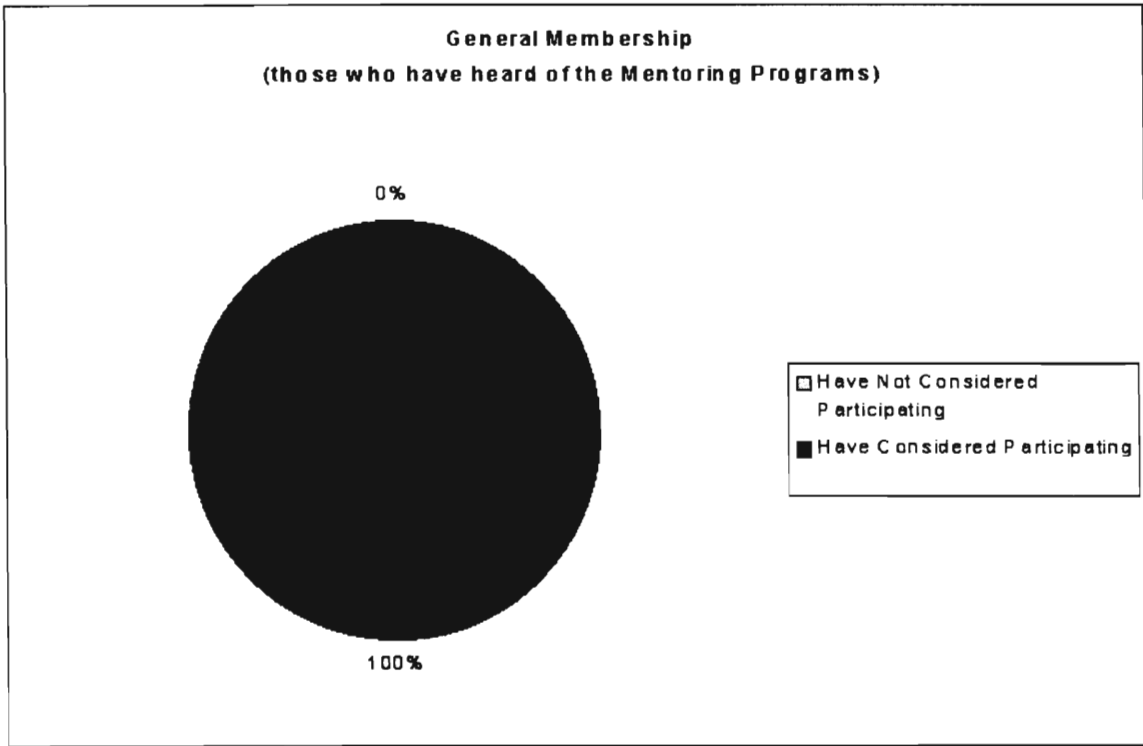


Figure 39 – General Membership (those who have heard of the Mentoring Program)

1.2 For people who answered “No” to questions 1.:

- i) Would you consider joining any of the current mentoring programs? (Yes/No)

For those who indicated that they had not heard of the mentoring programs

12 (43%) out of 21 of them would be interested in participating. This is illustrated in Figure 40.

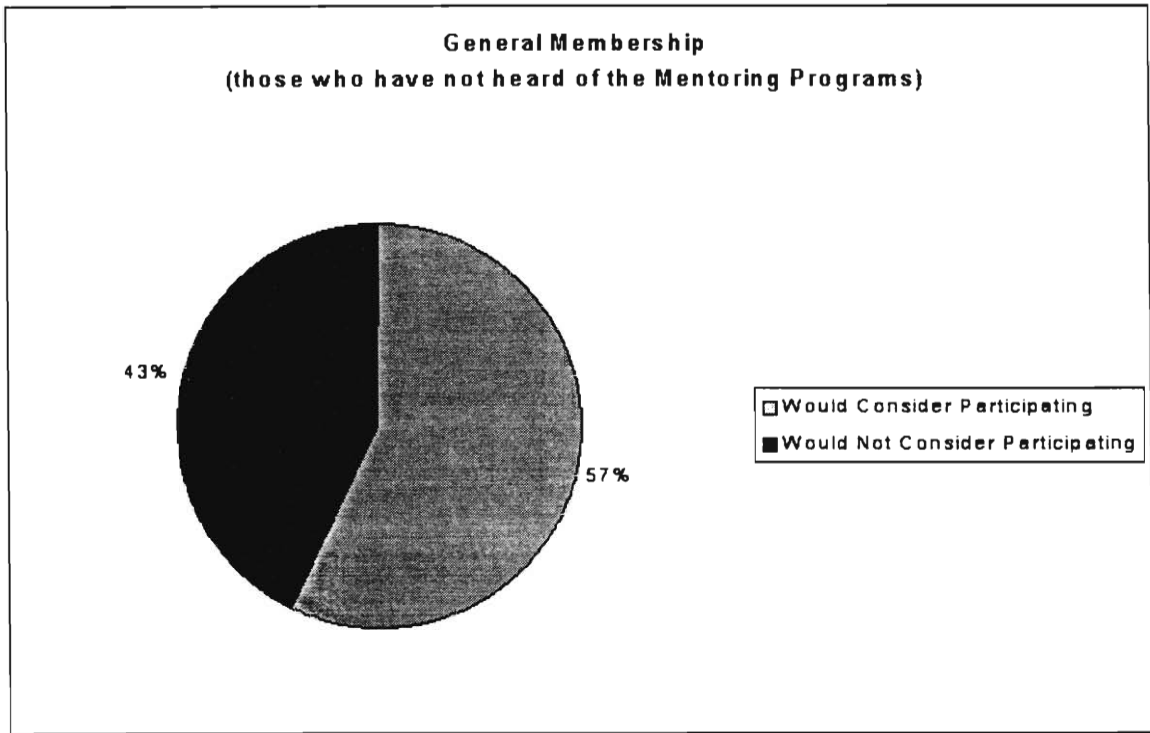


Figure 40 – General Membership (Those who have no heard of the program)

ii.) Why?

3 (34%) of the general members who returned surveys indicated that the reason they would not participate was because of a lack of time. 2 (22%) of the general membership indicated that they are not sure the services pertain to them. 2 (22%) of the general membership indicated that they did not have time to be involved. 1 (11%) of the general membership indicated that they were not interested because they were not satisfied with past services, and 1 (11%) of the general membership indicated that they were not healthy enough to be involved in the program. An illustration of the responses to this question is in Figure 41.

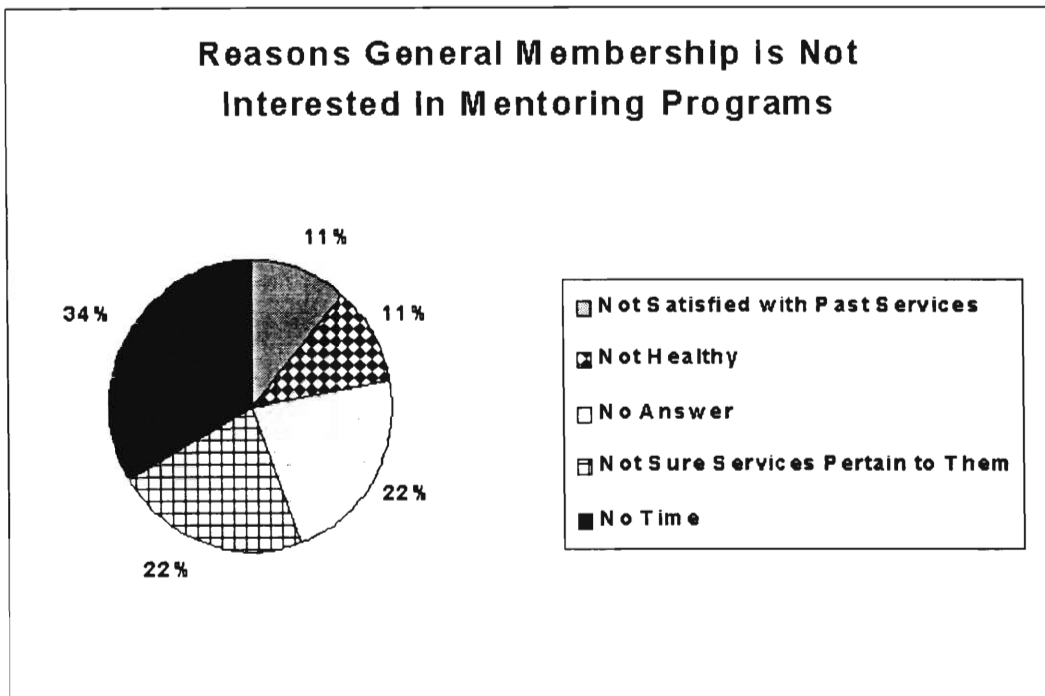


Figure 41 – Reasons General Membership is not Interested in Program

(2) The purpose of question 2 is to determine how the general membership is receiving updates currently and why they haven't heard of the mentoring programs yet.

2. How do you receive updates on what services NSPE has to offer?
- Postal Mail
 - NSPE Website
 - e-mail
 - other Please Specify: _____
i.e. "know someone working at NSPE"

The results to this question show that nearly ¼ of the general members who responded currently receive NSPE Updates via postal mail which is a costly option. Over 60% use either email or the website to get updates. Those options

are the most convenient and cost effective. The results to this question are illustrated in Figure 42.

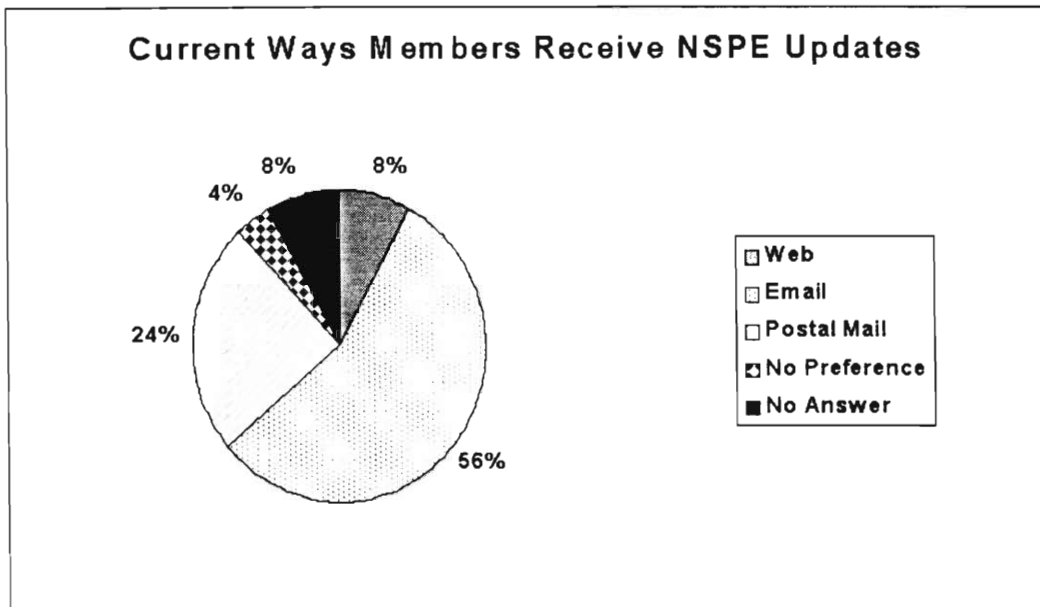


Figure 42 – Current Ways Members Receive NSPE Update

(3) The purpose of question 3 was to find out what form the general membership prefers to receive NSPE mail.

3. In what form do you prefer to receive information about NSPE?

The results from this question are illustrated in Figure 43. 12 of the members (66%) indicated that they would prefer to receive updates about NSPE via email and 3 of the mentors (16%) indicated that they would prefer to receive updates about the NSPE via postal mail. One mentor preferred visiting the website, one had no preference, and one did not answer. These answers show that a higher percentage would like to receive email updates than are currently

receiving them. Also, these results show that a smaller percentage of members would like to receive postal mail updates than currently do. The reduction of postal mailings would decrease cost for the NSPE. The response to this question is illustrated in Figure 43.

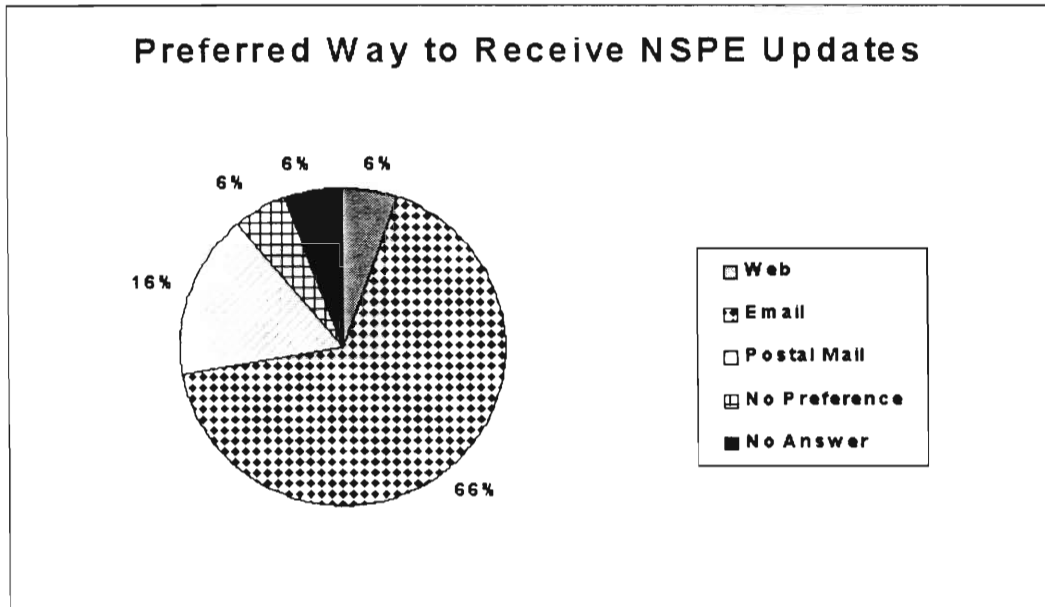


Figure 43 – Preferred Way to Receive NSPE Updates

The current method of receiving NSPE updates is compared with the preferred way of receiving NSPE updates. This shows how it could change. The numbers are uneven because some respondents selected multiple items.

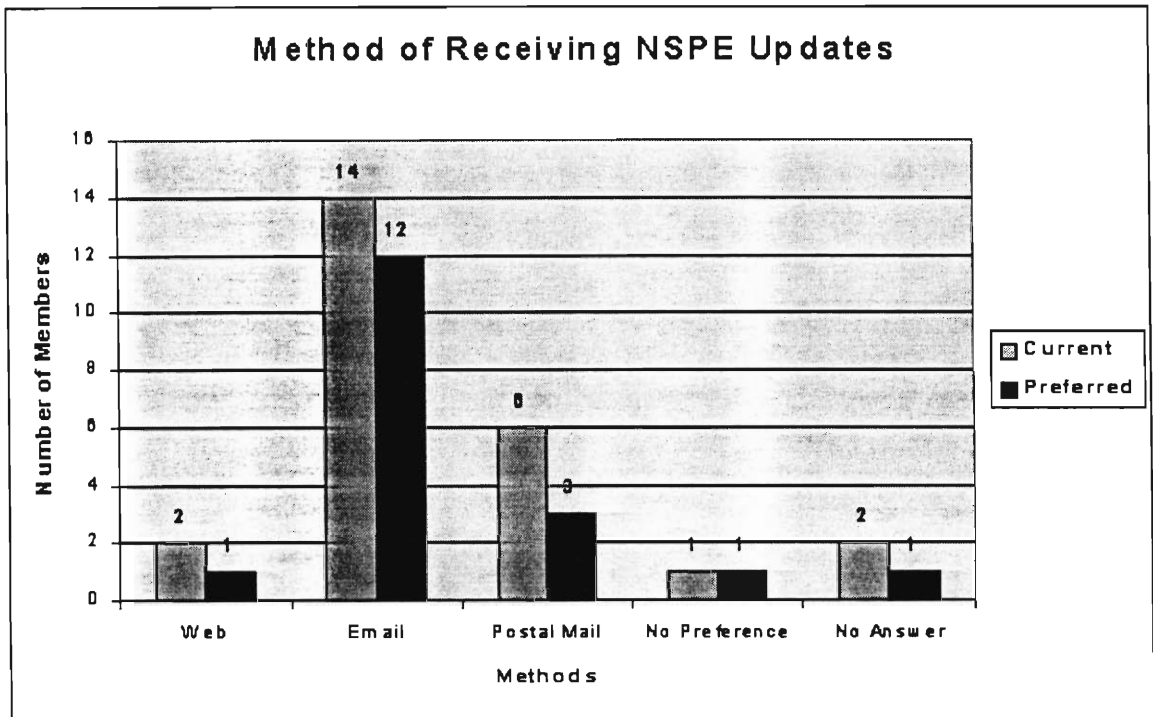


Figure 44 – Method of Receiving NSPE Updates

(4) The purpose of question 4 was to get email addresses for members who do not currently have an email address on file with the NSPE.

4. email: _____

Many people who indicated that they would like to receive NSPE updates via email did not enter an email address (5 of 12 did not enter email address). The surveys were sent via email; therefore the recipient of the results could manually enter the addresses into the database. If the answers for this form were automatically entered into a database then those who selected email would not receive updates. The result for this question is illustrated in Figure 45.

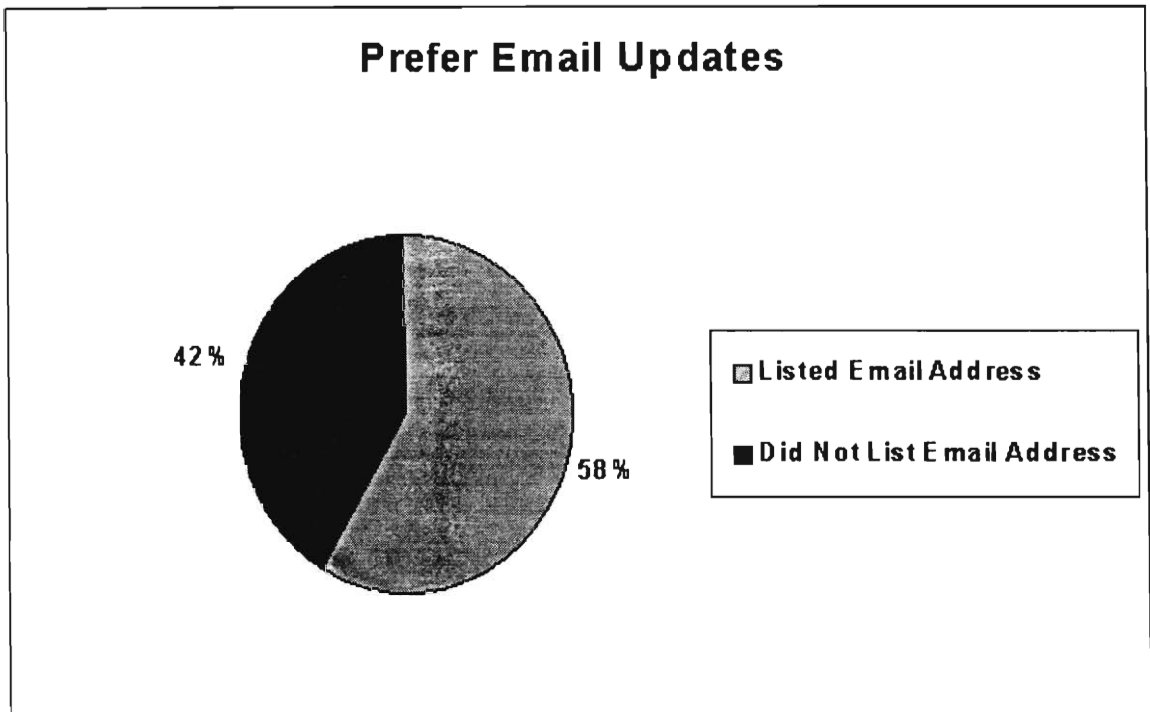


Figure 45 – Prefer Email Updates

(5) The purpose of questions 5 was to get input from the general membership on services that interest them.

5. What services would you like NSPE to offer?

The majority of the members (52%) who returned this survey did not answer this question (9 of 17). Out of those who did answer it, 2 (12%) had no suggestions and 2 (12%) said they were happy with the services offered now. 1 person (6%) suggested In-House Continuing Education Courses for credit, 1 person (6%) suggested Mentoring for Young Engineers, 1 person (6%) suggested Online Fora, and 1 person (6%) suggested Employment Opportunities. These

answers are illustrated in Figure 46. A number of the suggestions are already in place. This shows that overall the General Membership is happy with the services that the NSPE offers. The problem is the awareness of the programs.

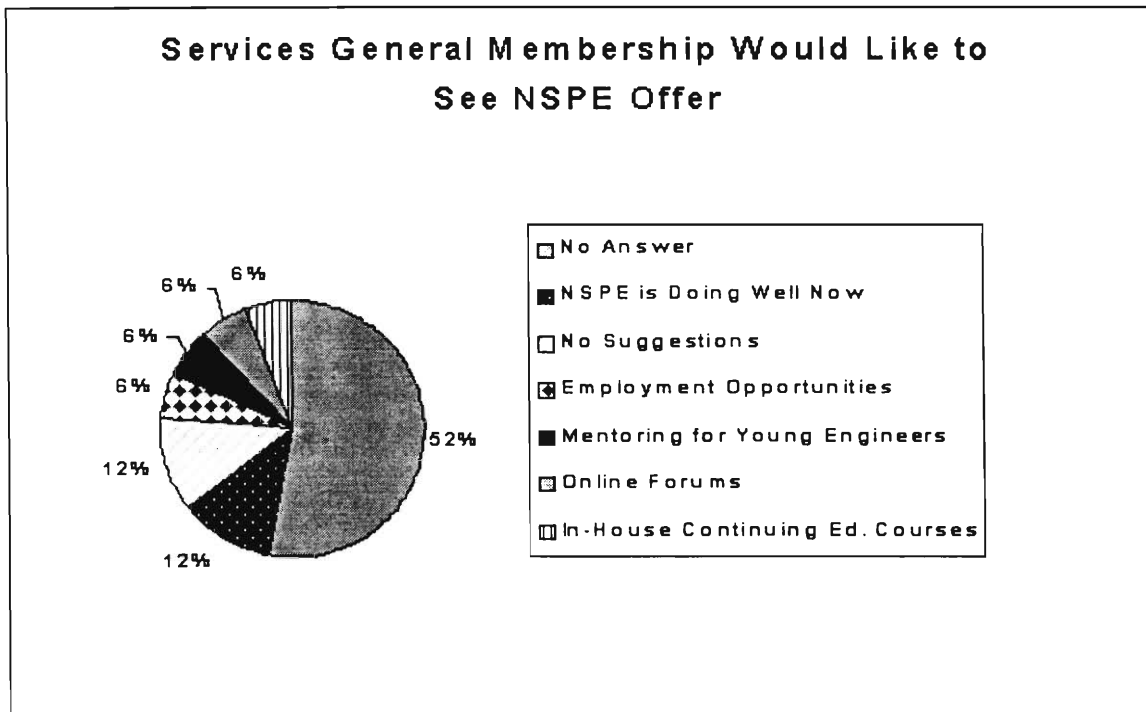


Figure 46 – Services General Membership Would like to see NSPE Offer

4.1.1.4. State Society Survey

A letter was sent to 51 of the 52 State Societies. The letter can be found in APPENDIX R. This letter was intended to get information from them about current programs or interest in participating in NSPE Mentoring Program. 10 of the 51(20%) State Societies responded. This is illustrated in Figure 47.

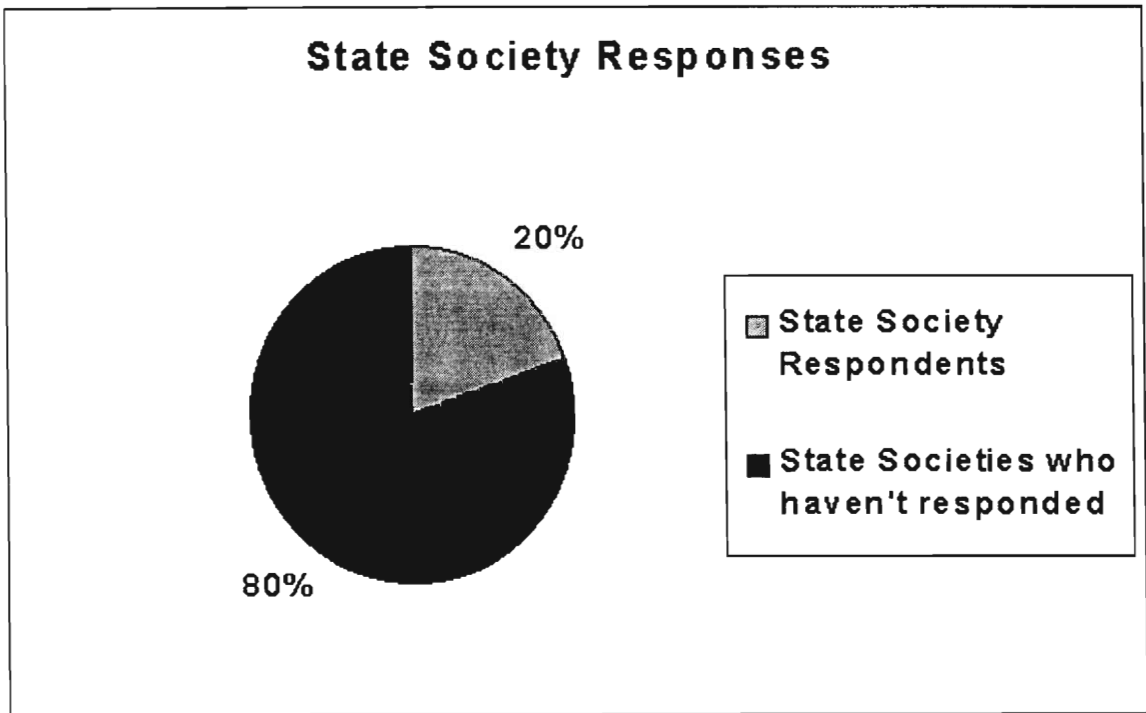


Figure 47 – Stat Society Response Rate

2 of the 8 (20%) Societies that responded currently have a mentoring program. This is illustrated in Figure 48.

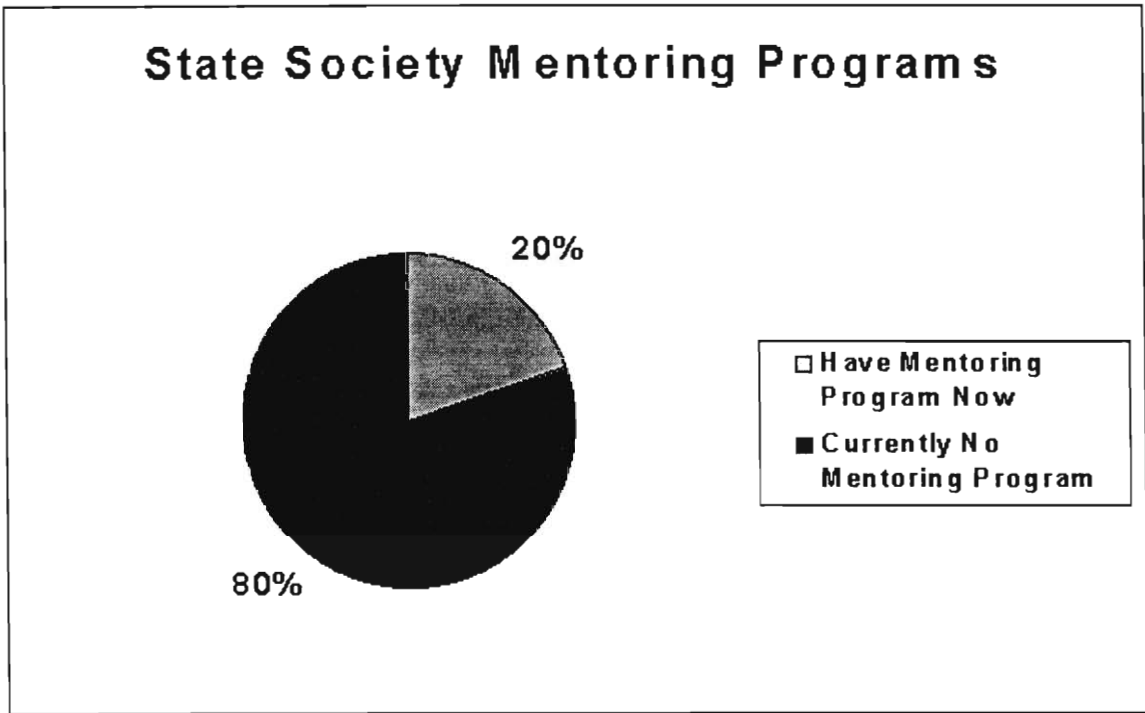


Figure 48 – State Society Mentoring Programs

Half of the Societies that responded (5 of 10) are interested in the NSPE mentoring program. 20% (2 of 10) of those that responded maybe be interested (2 of 10), 20% (2 of 10) are not interested in mentoring and 10% (1 of 10) gave no indication one-way or another regarding interest in the program. The results from the question are illustrated in Figure 49

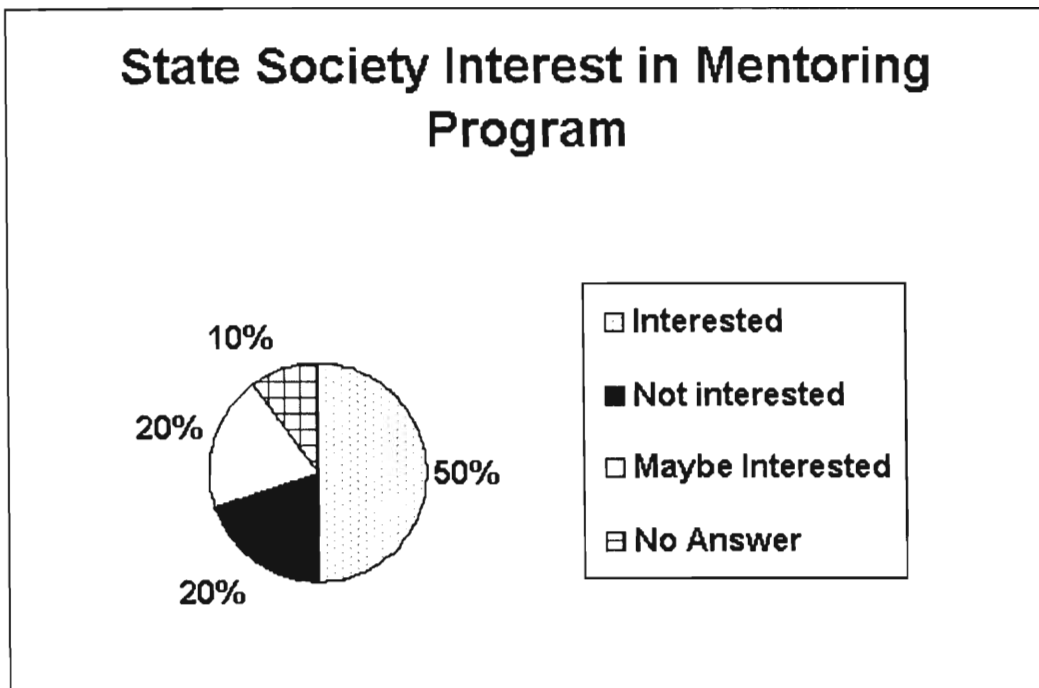


Figure 49 – State Society Interest in Mentoring Program

4.2. Relationship Model

The relationship model for effective mentor/mentoree relationships was also formulated during this project. The model developed is in flow chart form. It does not have a timeline associated with it because of the uniqueness of the different programs that will be using it. The model can be seen in APPENDIX L. The model starts with the pool of mentors and general members as being separate. After the general members are interested in the program and apply for a mentor an NSPE staff member matches them up. Communication begins via whichever means they prefer. The model then shows the mentors and mentorees communicating with each other as well as the general public and general

membership via the Engineers' Café. The mentors and mentorees fill out an evaluation either every month or every three months. The NSPE reviews these evaluations to make sure everything is in order. Once the mentors and mentorees are matched up all of the following events are shown in a continuous loop until the relationship ends.

4.3. Engineers' Café

At the end of the project, the software was developed and packaged with documentation. The software was developed from the Snitz Forum 2000 and the following additional features were implemented for NSPE mentoring program:

- NSPE Membership identification and NSPE Members only fora.
- Assigning Mentors.
- Mentor only fora allowing Mentors to privately communicate.
- Mentor/Mentoree Match up to keep track of who is Mentoring who
 - Mentor / Mentoree Communication log to obtain feedback on mentors and mentorees relations
- Key Indicator page displaying a more detailed report on the activity of each forum.

More information on the Engineers' Café features its operation and implementation detail is shown in the Training Manual at the end of the document.

4.4. Evaluation

The survey of the mentorees and the general NSPE members provided valuable feedback on the effectiveness of the current mentoring programs, and also helped in the tailoring of an implementation of an evaluation system for the new Engineers Café.

1) Current Mentoring programs

The mentoree surveys as well as the NSPE member surveys included questions pertaining to the effectiveness of the mentoring programs that were currently offered by the NSPE. From the 20 mentoree surveys that were sent out, there was only one response who gave the overall program a good rating, and also mentioned his mentoring experience as being average. A preference to filling out a program evaluation form online was also indicated.

These results would point to rating the current mentoring system as being largely disorganized. This is due to the fact that these mentoring programs are fledgling programs require extensive marketing.

The survey of the mentorees and the general NSPE members provided valuable feedback on the effectiveness of the current mentoring programs, and also helped in the tailoring of an implementation of an evaluation system for the new Engineering Café.

2) Engineering Café Evaluation system

The development of the Engineering Café provided ample opportunities to investigate the success of these programs. An integral part of the Engineering Café is the *Key Indicator Evaluation Page*. This page provides details about the traffic in the various sections of the forum. This is illustrated in Figure 50 and it describes the total post count, the total number of registered users, the Café usage by the mentors, the NSPE members and the nonmembers. This data is represented per forum, and this enables to determine the inactive fora, and this would result in more attention being paid to marketing these fora better. Using this system, the NSPE will be able to gauge the effectiveness of this new system.

Key Indicator Evaluation Page	
Total Topics:	10
Archived Topics:	1
Total Posts:	16
Total Archived Posts:	1
Total Topics Replies:	6
Registered Users:	7
Mentor Topic Count	
Category: Career Transition	1
Category: Mentors Only	4
Category: NSPE Mentoring Team	1
Category: NSPE Test Forum	4
Mentor Reply Count	
Category: Career Transition	1
Category: NSPE Test Forum	4
Nonmember Topic Count	
Nonmember Reply Count	
Category: NSPE Test Forum	1
NSPE member topic count	
NSPE member reply count	

Figure 50 – Key Indicator Evaluation Table on Engineering Café page

This evaluation page is meant to abide by the standards of the Balanced ScoreCard Technique (Dr Robert W. Sisson). Plans to make use of this technique are described in greater detail in the Suggestions section of this report.

4.5. Marketing

The results from the general membership survey indicated that the marketing for the mentoring programs is not effective. (See Figure 37 on page 117) Only 11% of the general membership who returned the survey had heard about the programs. Also, some results from the mentor survey were reflections on the marketing of the mentoring program. When the mentors were asked how to make the program more valuable to mentorees, 33% of them answered to improve advertising of some sort. 100% of the mentors who made suggestions about how to attract perspective mentorees included advertising.

As of now, NSPE has never placed any advertisements in Engineering Times for the Mentoring Program. According to the 2001 Lewis & Clark Research survey for Engineering Times 87% of the members who receive Engineering Times (58,406 members) go through their issue each month. The NSPE does advertise the mentoring programs in email updates approximately 6 times a year.

5. SUGGESTIONS

5.1. Recruitment / Marketing

In order for the NSPE to increase interest in the Mentoring Program as well as membership, new marketing techniques should be used. This section provides details about new marketing techniques.

5.1.1. Recruitment of New Members

The goal of this project was to integrate the mentoring programs for many reasons. One reason was to make the mentoring programs more marketable increasing interest and ultimately helping to increase membership. There are other ways that the NSPE could increase membership besides changing the mentoring programs.

The results from the general membership survey reflect the fact that the general membership is not well informed about services offered by the NSPE. If the members are not aware of the benefits of the NSPE, they will not draw in as many new members or get the most out of their membership. The NSPE has a healthy, growing membership, however there are many engineers who are unaware of the NSPE or the benefits of being a member. Some areas that should be worked on are: increasing the number of student chapters, reaching out to more young engineers, and reaching out to more engineers on the corporate level.

5.1.1.1. Student Members

Recruitment of student members is very important to the expansion of the NSPE. Currently, the NSPE does not invest much time or money on recruiting student members or chartering University chapters. Investing in the recruitment of student members is not profitable for the NSPE for a number of reasons. The most important reason being the cost of processing the applications and the time commitment of tracking the members. It is difficult to keep up with University chapters, and the NSPE does not have the resources to contact each engineering university individually with a sales pitch and keep an up-to-date roster of student members. Others organizations, such as the State Societies, with a common interest in the universities may have the resources for such tasks. The task of compiling a list of engineering universities would be more suited to the State Societies (State Societies with mentoring programs in place may have already done this). The State Societies are in the best position to contact the universities then pass on information relevant to mentoring onto the regional societies. Once a region has a high concentration of student chapters, the NSPE should hold regional conventions of University chapters with presentations and exhibits suited for engineering students, for example:

- P.E. Licensure Information
- Mentoring Information

- Career Selection Tips
- Companies looking for engineers – presentations/job recruitment
- Resume Company Exhibit

Regional Conventions for student chapters may be a long way off, but there are many other things to do to attract student members without getting the regional societies involved. If the NSPE had a list of contacts at all engineering universities, many other options would be available for recruitment. Without a list of contacts there are many others options. On the University level, Career Fairs are big events that attract students thinking about their future career and ways to better prepare themselves. If the NSPE sent information to be distributed at these events or sent a representative it would be a great recruitment tool. Most engineering schools are four year institutions, therefore, sending a representative every two years would suffice. Besides recruitment on the University level there are other ways to get the attention of a large groups of engineering students at once. A small amount of research must be done to find out what national events or organizations a large number of engineering students belong to, to know where it would be most economical to recruit. This could be done by taking a sample of current student NSPE members and asking them about what organizations they are involved in or what organizations are offered at the universities they attend. An example of such a national event is the NAESC National Conference.

5.1.1.2. Attracting Young Engineers

From the graph of the age distribution of the entire membership of NSPE (Figure 6 on page 79), it is apparent that there is a greater number of students and young engineers than there are executive engineers. Despite this fact, the NSPE could still increase the recruitment of young engineers. A large resource for recruiting young engineers would be university contacts, however if those are unavailable there are other ways. NSPE should purchase banner advertisements at job finding websites that cater to engineers. Resume websites, career magazines, and graduate school information websites would also be a good place to put advertisements for the NSPE.

5.1.1.3. Attracting Engineers on the Corporate Level

The NSPE currently has many different marketing methods to attract small and large engineering companies. Some of these include insurance plans and NSPE credit cards for smaller companies as well as discounts for larger companies that approach the NSPE. It would be ideal if the NSPE kept track of how many members they have for particular companies. Once a certain number of people join from a company, then someone from the NSPE can contact the company with special offers for group rates for the NSPE as well as all of the other benefits including the mentoring program.

5.2. Marketing NSPE Mentoring Program

Many of the State Societies currently have a mentoring program and many of those that do not expressed an interest in obtaining information and/or making an effort to participate in the NSPE mentoring program. The NSPE should look into the State Societies that currently have mentoring programs paying special attention to the make-up of their membership, their contacts, and methods of recruitment. Besides the State Societies as a means of recruiting people for the mentoring program, advertisements in various places would work well. All of the NSPE literature should contain ads and updates about the new and improved mentoring program. According to NPSE records, the member circulation of the Engineering Times Newsletter is 58,406. It is reported that 87% of these recipients go through their issue each month, however only 11% of those who returned our general membership survey were aware of the mentoring programs. If frequent advertisements and articles appeared in Engineering Times many more people who be familiar with the NSPE mentoring.

The Mentors who have answered our phone interview seem to agree that the mentoring program should be marketed more. The comments in APPENDIX T includes the comment on how to make the Mentoring program attractive and lot of mentors agreed that the program should be marketed in various locations.

5.2. Software

During the development of the Engineers Café software, several features and implementation methods were considered but were not implemented at the end of the project due to time and resource restrictions. This section will introduce those features and the Engineers' Café implementation method as suggestions for the software use.

5.2.1. Transition

As discussed in Section 3.3.2, the Engineers' Café was not implemented in the NSPE web site. Also, it was notified by the web coordinator of NSPE (Stefan Jaeger) that changes in the front page of NSPE web site are not easy to implement due to the fact that the front page has to incorporate all the NSPE divisions and not just the mentoring programs. With this in mind, the transition plan in APPENDIX Q was developed. The transition plan was developed as a five-phase transition. The sections below will discuss the reason and justification for each of the transition phases.

5.2.1.1. Start of Transition

To start the transition smoothly, the first phase of the transition will be to install the Engineers Café into the NSPE web site and introduce the transition from the legacy system to the new Engineers' Café to the visitors of this web site.

This way the frequent users of this web site will have a time period during which they can adjust to the new forum and start using the forum.

5.2.1.2. 2nd Phase

The intent of the second phase of the transition is to introduce the new Engineers Café in the NSPE front page by giving the Engineers' Café a link of its own in the front page side bar (a list of links to different parts of NSPE). At this stage, the links to the former "Ask a PE" are kept as is and a link to the Engineers' Café is added. This way, the new name will be introduced and can provide a time frame for the users to transfer from using "Ask a PE" link to the new link.

5.2.1.3. 3rd Phase

In the third phase, the "Ask a PE" link will be removed to notify that the old system will be removed. This way the transition will be firm and forces that the users will use the new system in the future. At this stage, the link to old fora should be placed somewhere in the disclaimer page explained in the second stage (in APPENDIX Q). By leaving a link to the old system within the new page, the users would still be able to see the old discussions, but will be able to notify them through the disclaimer page to use the Engineers Café for new topics.

5.2.1.4. 4th and Final Phases

The 4th stage is to lock all the old fora to restrict any new posts. This way, the users will still be able to read old topics but will be required to use the Engineers' Café. At this point any problems with the systems should be fixed as well as any features the NSPE decided to implement on top of our features should be present.

The final phase will be to remove the old system completely from NSPE web site and this will conclude the complete transition from the old forum system to the new Engineers' Café.

5.2.2 Upgrade

The Engineers' Café was designed to allow expansion and modification. A few options were not implemented, due to time constraints, however, the compatibility of this software allows these features to be developed easily. One such option is the implementation of key indicator evaluation graphs in line with the Balanced Scorecard technique (Dr Robert Sisson) as indicated in Figure 51. The pink triangle in Figure 51 indicates the current level of performance and provides a graphical way of representing progress. These can be added using simple applets written in Java.

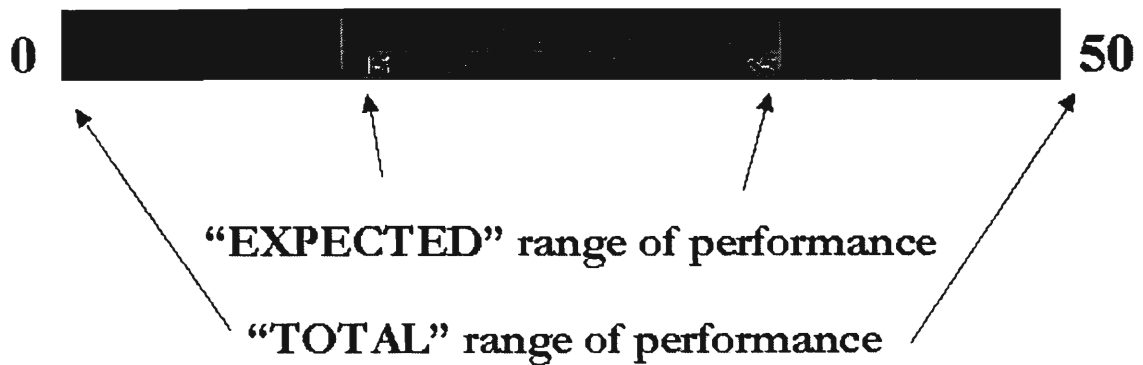


Figure 51 – Balanced Scorecard Indicator graphs

5.2.3. Maintenance

There are several maintenance requirements for the Engineers’ Café to ensure proper operation of the software. Procedure for upkeep of the database must be done by the developers of the web servers and is recommended to be automated in section 5.2.2.3. Most others can be taken care of through the use of Administrative options of the Engineers’ Café.

5.2.3.1. NSPE Membership Database upkeep

The database table in Engineers’ Café that contains the NSPE Membership ID and the corresponding names are currently disjoint from the NSPE membership database, and until the NSPE finishes its upgrade on the membership database for web accessibility, data on all of the new member names and their membership ID must be updated periodically in the Engineers’ Café’s database table. This is required to allow members of NSPE to register as a NSPE member

in the Engineers' Café, providing them with access to the NSPE member only fora defined in Engineers' Café. This will be unnecessary as the upgrade on linking the Engineers' Café database and the main database is completed.

5.2.3.2. Forum Upkeep

To maintain an active forum site, administrator in charge of the Engineers' Café must periodically assess the categories and fora defined in the site and decide whether to remove any inactive forum or add new forum / category upon high demand. The Key Indicator Evaluation Page in the administrator option discussed in section 4.4 will help on this evaluation. Constant upkeep of the forum and providing new topics will attract any visitors and increase frequent users on the site.

On top of managing the whole system in the Category / Forum level, moderators to categories or fora should be assigned (possibly assigning mentoring task force members) to oversee all the posts made to the fora. The moderators' main job will be to make sure there will be no objectionable commentary in the fora they are in charge of, and keep the posts within the fora focused on the type of topic intended for the specific forum. By keeping a forum without hostile comments and keeping the topics in line with the category or fora intended topics, users of the forum will be able to get to the topic they want quickly and have a pleasant discussion experience.

5.2.3.3. Mentor / Mentoree User upkeep

To make sure the mentor / mentoree tracking mechanism works correctly within the system, the system has to be notified of any changes in the Mentor / Mentoree users. An update action must be made when a member becomes a Mentor, or a Mentor is assigned to a Mentoree. Anytime someone becomes a mentor or mentoree, they should be entered into the Engineers' Café as users (unless they are already users of the forum). This should be taken care of by adding several fields to the application. The application should include the user name if they already use the Engineers' Café, otherwise their desired username and membership ID to allow the users access to the member only fora.

When a user becomes a mentor, the administrator of Engineers' Café must edit the corresponding users profile and change the user designation to a "Mentor." This change will allow the users access the Mentor only fora intended to allow mentors to discuss issues on mentoring and help each other. Also, when a mentor is assigned a mentoree, the match-up has to be notified to the system by the administrator. Mentors with assigned mentorees in Engineers' Café will be asked to fill in a Communication log with their mentorees whenever the administrator asks for one (preferably every month). The information collected here will help on the evaluation of the relationships.

5.3 General

This section details suggestions that could benefit many aspects of the NSPE, and are not limited to the mentoring programs.

5.3.1 Uniform Application Procedure

A present stumbling block faced by the NSPE mentoring program is the lack of a uniform application for mentors and mentorees for all mentoring programs. The lack of this presents a problem for recruiting mentors and hence mentorees.

The Engineers' Café is easily modifiable and new features can be added with great ease. One feature that would be a good addition to the Engineers' Café would be this uniform application procedure to register as a NSPE mentor or mentoree. The applicant would be able to indicate what specific mentoring program he/she would like to participate in as a mentor or mentoree. An example of such a unified form is in APPENDIX V. Having such a feature will minimize the delay involved with posting applications and will cut down on application processing time.

5.3.2 NSPE Award Ceremonies

Having an NSPE Award Ceremony presents itself as a marketing event that can be used to gather NSPE members and more specifically mentors from

different parts of the country. Awards such as 'Mentor of the Year' award, 'Recruiter of the Year', 'Corporate Recognition' awards and 'Sustaining Firm' awards can also be presented at such an event or can be spread out throughout the year at the various NSPE General conferences. These events will encourage participation from the NSPE members and will also increase interest in the NSPE mentoring programs.

6. CONCLUSION

A system for evaluation and integration of the four mentoring programs was completed with the conclusion of this project. Deliverables of this project include preliminary findings from surveys conducted and a centralized online interactive system named the Engineers' Café that provides an integrated solution to the problem of uncoordinated mentoring programs at the NSPE.

Several recommendations pertaining to the use and expandability of the Engineers' Café were given. These recommendations were based on results obtained from the surveys conducted.

With the deliverables from this project, the NSPE will be in a better position to integrate its mentoring programs and will have a better tool aimed at increasing its web appeal. The NSPE will also be able to use the survey results obtained to better direct its marketing efforts to increase membership.

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8. GLOSSARY

ASP	Active Server Pages. Microsoft standard for web programming. Allows developers to create interactive web pages by embedding program codes within the web site.
Delimit	To enter columns of data in text format by separating each column using a special character (i.e. comma, tab, space, colon) “drawing the boundary of columns”
EIT Engineering Times Engineers’ Café	Monthly Newsletter published to NSPE Members. Software developed in this project. Forum software with specialized feedback collection and activity monitor for NSPE Mentoring programs.
Legacy System Mentoring Team	Old system originally used (outdated system). NSPE staff team in charge of the mentoring programs at NSPE. Team in charge of integrating the four mentoring programs.
Logisticians	Expert at procuring, maintaining, and transporting material, personnel and facilities.
Open Source	Computer Program code released to the public as “Free” under the GNU General Public License
Parsing (in Perl)	To go through the input data and manipulate the data with a certain defined operation (such as search and replace, extract certain information or reformat etc.)
PE	Acronym for Professional Engineer. Professional Engineers are licensed engineers who has passed the professional engineers exam after about 5 years of experience in the field of engineering.
Primary Key	An ID number assigned to organize data in database tables.
Snitz Forum 2000 SQL	Open Source Forum software. Structured Query Language. Standard language used to manipulate data in a Database Management Systems.
TASS	NSPE’s main membership database containing information about their biographical information as well as the membership information.
W3C	Organization which defines the web standards such as HTML, DHTML and XML.
Young Engineer	Engineers just out of education who are pursuing to attain the PE License.

APPENDIX A: NSPE BACKGROUND

NSPE Mission

The NSPE is the national society of engineering professionals from all disciplines that promotes the ethical and competent practice of engineering, advocates licensure, and enhances the image and well-being of its members (NSPE, 2001). NSPE values, protection of the public, ethical conduct, professionalism, competency, and fulfillment of member needs, service to the public, and licensure. There are following five major goals of this organization.

- Promote the competent, ethical, and professional practice of engineering.
 - Where they promote to other engineers to be licensed by licensures defined by various jurisdictions, and collaborates with other programs to enhance standardization of the licensing procedure as well as effectively communicate the need for ethical, professional practice among engineers.
- Enhance the image and stature of engineering professionals.
 - Continuously implement and monitor the public image campaign.
 - Publicize major achievements of engineers and engineering professionals.
 - Develop education campaigns on the importance of licensure.
 - Publicize Society activities to the trade and general media.

- Develop a campaign to enhance the recognition and stature of engineering professionals in the workplace.
- Develop a program to educate engineers regarding improvement of their own public image.
- Encourage engineers to participate in civic, educational, community and governmental activities and projects, including boards and commissions.
- Promote awareness of engineering to pre-college students.
- Provide education, career development, networking opportunities, and other benefits to engineering professionals and students.
 - Improve NSPE's role of serving as an information resource to members, chapters, state societies, and other engineering societies.
 - Provide educational opportunities for students and engineering professionals.
 - Create and implement career planning and development initiatives, including career-growth and licensure mentoring opportunities and managerial skills development.
 - Develop models for encouraging student chapters and student involvement in chapters and state societies.
 - Publicize the benefits of NSPE membership, with specific focus on younger engineers and students.

- Develop ideas and programs to facilitate networking opportunities.
- Advocate the interests of engineering professionals and protect the public through an effective government relations program.
 - Monitor national, state, and local public policy issues (legislation, regulations, and administrative orders).
 - Facilitate efforts of national, state, and local resources on public policy issues.
 - Advocate on behalf of the engineering professionals on public policy issues.
 - Communicate with stakeholders (engineering professionals, public officials, the general public, et. al) to raise awareness of public policy issues of interest to engineering professionals.
 - Promote political involvement by engineering professionals.
 - Choose strategic alliances to increase NSPE's effectiveness on legislative and regulatory issues.
- Align the structure, activities, and governance of the society to optimize support and resources for all programs.
 - Improve and mature the streamlined governance model at NSPE, including the regions and the practice divisions.
 - Continue effective operation of and improvements to the records management system.

- Explore new ways, including the use of distance-access technology, to optimize participation by members in NSPE meetings.
- Increase net membership by continuing the implementation of improved membership marketing.
- Improve inter-professional and inter-society interactions.
- Strengthen the partnership and communication of programs and activities among national, regional, state, and chapter organizations.
- Improve the use of technology to enhance member awareness, involvement, participation, and efficiency of Society operations.
- Commit to the ongoing strategic planning process, including the allocation of resources according to the plan and the elimination of programs that cannot be linked to the plan.

General Facts

(NSPE, 2001)

Founded: 1934

Members: 60,000

State Organizations: 53 state and territorial societies

Local Chapters: more than 500

Budget: \$6,000,000

Staff: 49

Executive Director: Patrick J. Natale, P.E.

Phone: 703/684-2800

Fax: 703/836-4875

E-mail: For general inquiries, customer.service@nspe.org

Membership Categories

- Licensed Member—Engineers licensed in a U.S. state (Professional Engineers) or holders of an equivalent licensure from another country
- Member—EIs (Engineer Interns)/EITs (Engineers-in-Training) or holders of an equivalent credential from another country
- Member—Graduates of Accreditation Board for Engineering and Technology (ABET)-accredited engineering programs, or the international equivalent
- Student Member—Students in ABET-accredited engineering programs or an engineering or pre-engineering program that can lead to licensure

All memberships are individual; there are no company memberships (except in relation to certain practice divisions).

Activity Areas

- Engineering licensure
- Government relations
- Professional issues

- Ethics
- Legal issues
- Continuing education
- Employment
- Salaries
- Practice areas
- Publications
- Public relations
- Student issues

Practice Divisions

- Professional Engineers in Construction
- Professional Engineers in Education
- Professional Engineers in Government
- Professional Engineers in Industry
- Professional Engineers in Private Practice

Major Publications

- Engineering Times, monthly, with special Practice Division section
- "U.S. Engineering Press Review," weekly broadcast e-mail
- "NSPE Update," monthly broadcast e-mail

- NSPE Income & Salary Survey, annually
- Compensation & Benefits in Consulting Engineering Firms, annually
- Engineering Licensure Laws: A State-by-State Summary and Analysis

World Wide Web Site

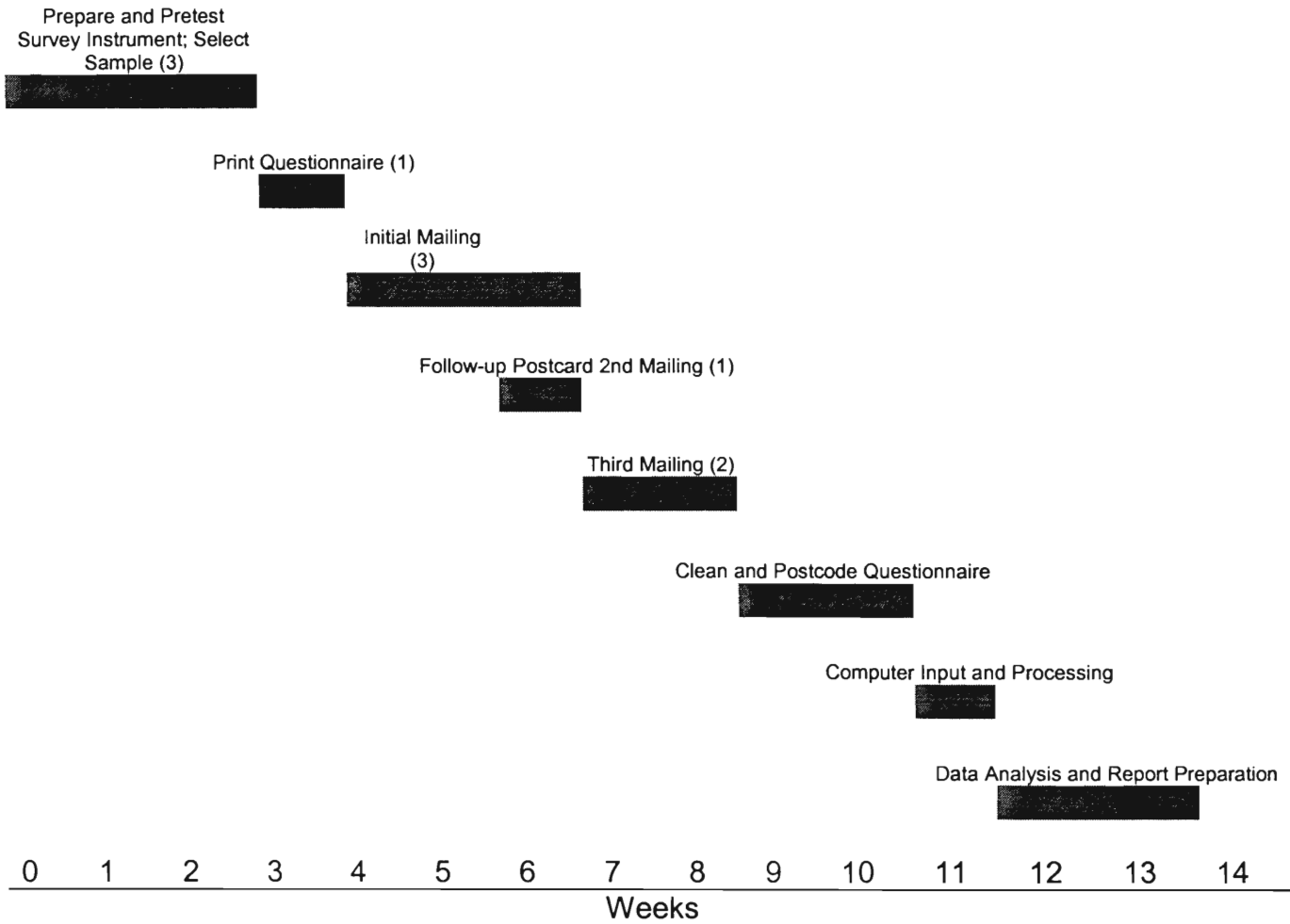
www.nspe.org

NSPE Annual Convention and Exposition

July 26-30, 2001, Detroit, Michigan

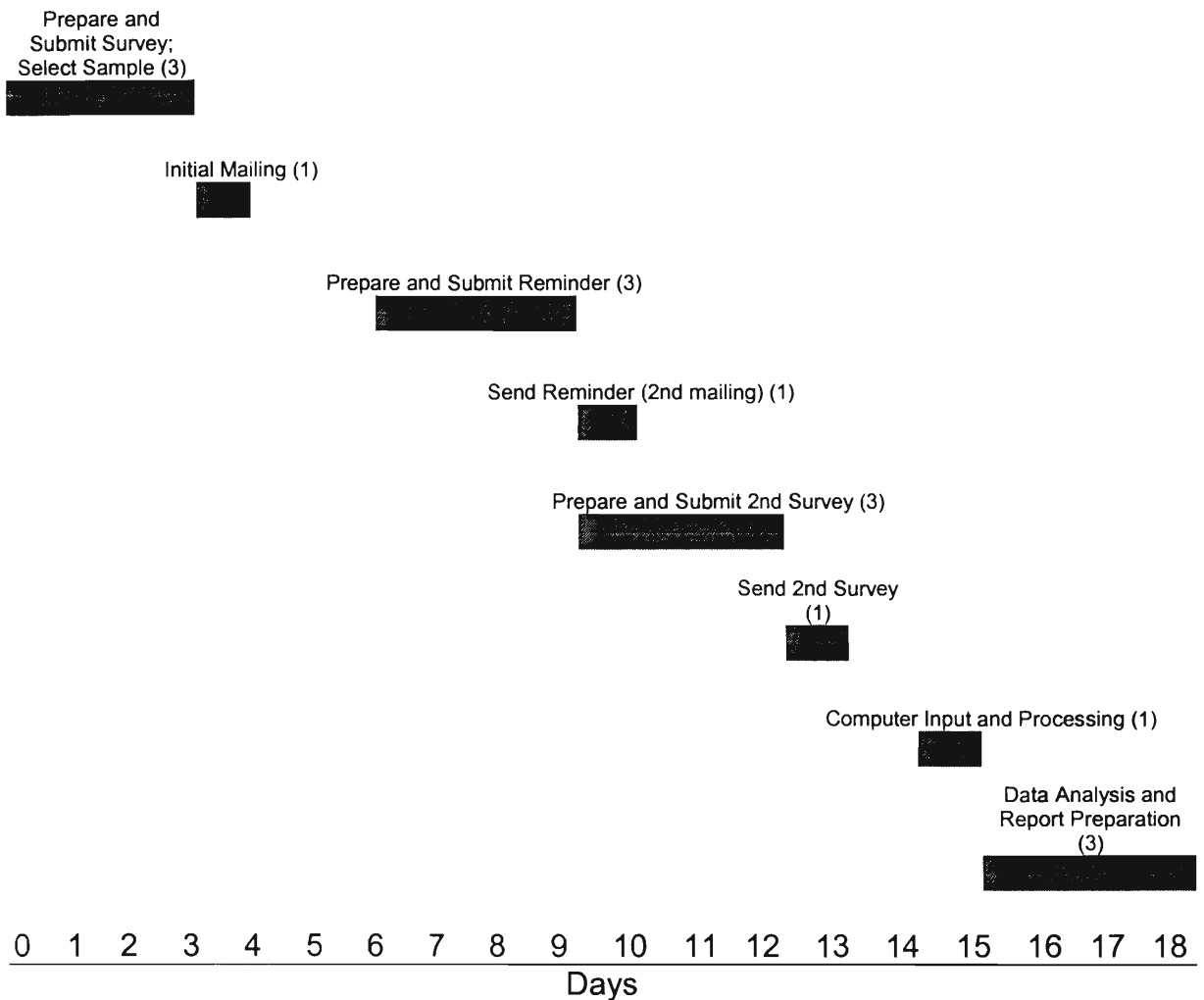
APPENDIX B: Survey Time Schedule

Time Schedule - Mail-Out Survey



APPENDIX C: Adjusted Survey Time Schedule

Time Schedule - Mail-Out Survey



APPENDIX D: NSPE Mentor Survey

November 6, 2001

Dear NSPE Mentor:

Each year Worcester Polytechnic Institute (WPI) partners with the National Society of Professional Engineers (NSPE) in a mutually beneficial project. This year three WPI Interns will work at NSPE Headquarters to research, coordinate and develop NSPE Mentoring Programs.

Our goal is to create a centralized program that is more accessible and useful for mentors and mentorees. Furthermore, we hope to coordinate all NSPE Mentoring Programs into a more cohesive initiative where one program integrates with another.

To do this, we need your input. Any feedback you can provide will give us a better understanding of the success of the current programs and the extent of membership involvement.

Please complete the enclosed survey and email it back to jgray@nspe.org or fax it to (703)836-4875. Thank you for taking time to participate in this important project!

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
WPI NSPE IQP Team

Survey for NSPE Mentors:

Are you: MALE or FEMALE ?

Which age range are you in? 0 - 35 , 36 - 45 , 46 - 55 , 56 - 65 , over 65 ?

What is your engineering specialty? _____

Are you a licensed Professional Engineer? YES NO

Are you currently a mentor for one or more of the NSPE's Mentor Programs?

YES please check all that apply

Mentoring/Licensure

Career Transition

On-Line Fora

Mentors in Government

NO

If you marked no here your survey is complete. Please return it to jgray@nspe.org or fax it to 703-836-4875. Thank you for your time.

How many mentorees are you currently communicating with? _____

How did you first hear about the mentoring program? _____

Why did you become a mentor? _____

Would you be willing to participate in a more in-depth phone interview (approximately 10-15 minutes) with the WPI Interns?

YES NO

Please return this survey to jgray@nspe.org or fax it to 703-836-4875. Thanks again for your time.

APPENDIX E: NSPE Mentoree Survey

November 2, 2001

Dear NSPE Mentoree:

Each year Worcester Polytechnic Institute (WPI) partners with the National Society of Professional Engineers (NSPE) in a mutually beneficial project. This year three WPI Interns will work at NSPE Headquarters to research, coordinate and develop NSPE Mentoring Programs. As you may know, NSPE currently offers four different Mentoring Programs:

- Mentoring/Licensure
- Career Transition
- On-line Fora
- Engineers in Government

Our goal is to create a new centralized program that is more accessible and useful for mentors and mentorees. Furthermore, we hope to coordinate all NSPE Mentoring Programs into a more cohesive initiative that integrates one program with another.

In order to do this, we need your input. Please complete the enclosed survey and return to: Jennifer Gray either by faxing it to (703)836-4875 or by sending it in the enclosed envelope. Any feedback you can provide us will be greatly appreciated.

Thank you for your time.

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
WPI NSPE IQP Project

Mentoree Survey

Please indicate your choice with an [X] or provide information where appropriate.

1) Last Name _____

2) First Name _____

3) Gender Male
 Female

4) Age under 35
 36-45
 46-55
 56-65
 over 65

5) Mentoring Program that you are involved in
 Licensure
 Career Transition
 Mentors in Government

6) Reason for Involvement: _____

7) How many times have you communicated with your mentor over the past 6 months?

8) How many times would you like to communicate?

9) What means of communication do you use e.g. phone, email?

10) How would you rate your experience in the mentoring program, on a scale of 1-5?

1 - Poor
 2
 3
 4
 5 - Best

Comments: _____

11) How would you rate the program overall, on a scale of 1-5?

1 - Poor

2

3

4

5 - Best

Comments: _____

12) Would you prefer filling out a Program Evaluation form online?

Yes

No

13) What other types of services related to mentoring would you like the NSPE to offer, or what services do you anticipate a need for in the future?

14) Would you be willing to participate in a phone interview (10-15 min) with the WPI Interns?

Yes

No

15) Do you prefer future contact via email or phone?

Email

Phone

Please return to jgray@nspe.org. Thanks for your time.

APPENDIX F: NSPE Member Survey

November 4, 2001

Dear NSPE Member:

Each year Worcester Polytechnic Institute (WPI) partners with the National Society of Professional Engineers (NSPE) in a mutually beneficial project. This year three WPI Interns will work at NSPE Headquarters to research, coordinate and develop NSPE Mentoring Programs.

Our goal is to create a centralized program that is more accessible and useful for mentors and mentorees. Furthermore, we hope to coordinate all NSPE Mentoring Programs into a more cohesive initiative where one program integrates with another.

To do this, we need your input. Any feedback you can provide will give us a better understanding of the success of the current programs and the extent of membership involvement.

Please complete the enclosed survey and mail it back in the enclosed envelope or fax it to (703)836-4875. Thank you for taking time to participate in this important project!

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
WPI NSPE IQP Team

NSPE Member Survey

1. Are you familiar with the NSPE Mentoring programs? (Yes/No)

1.1. If you answered "Yes" to question 1.:

- i) Are you currently participating in any of the programs? (Yes/No)
- ii) Have you considered participating in any of the programs? (Yes/No)
- iii) Why or Why not?

1.2. For people who answered "No" to questions 1.:

- i) Would you consider joining any of the current mentoring programs?
(Yes/No)
- ii) Why?

* additional information about the NSPE Mentoring programs is provided at the end of this e-mail.

2. How do you receive updates on what services NSPE has to offer?

- Postal Mail []
- NSPE Website []
- e-mail []
- other [] Please Specify: _____
i.e. "know someone working at NSPE"

3. In what form do you prefer to receive information about NSPE?

4. email: _____

5. What services would you like NSPE to offer?

Thank you for taking the time to answer our survey.

Current NSPE Mentoring programs:

Mentoring/Licensure:

This program is specifically targeted toward engineers who are preparing to take the principles and Practices exam for the Professional Engineer (P.E) designation. NSPE members can request mentoring services from the PEC Practice Division.

Career Transition:

If you are changing your career, moving onto another company, or in any phase of career transition, this program, sponsored by Professional Engineers in Industry (PEI) will help you through the process.

Engineers in Government Mentoring Program:

The Professional Engineers in Government (PEG) host an online mentor assistance program where users, including engineering students, can dialogue on professional development issues and get career guidance.

Online Fora:

A service available through the NSPE web page, Online Fora welcomes questions from engineers (and others) about the profession, licensing, and engineering issues. Volunteers are recruited to monitor the assorted topic boards and inquiries that are posted every day.

APPENDIX G: Mentor Survey Reminder

Sub: Mentor Survey Reminder

Dear NSPE Mentor,

You are receiving this email as a follow up to the NSPE Mentoring Email Survey that you was sent on October 2, 2001. As you might recall, we gave you a brief overview of ourselves; the WPI interns, and the mentoring project we are working on at NSPE.

If you have already completed and returned the survey, then we thank you for your time. Your feedback is valuable and will help us assess the quality of the services offered and determine the need for additional services.

If you have not had the opportunity to complete and return the survey, we ask that you take a moment and do it now. Your feedback is extremely valuable!

Again, thank you for taking the time to participate in this important project!

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
WPI NSPE IQP Project

APPENDIX H: NSPE Member Survey Reminder

Dear NSPE Member,

You are receiving this email as a follow up to the NSPE Mentoring Email Survey that was sent to you last week. As you might recall, we gave you a brief overview of ourselves; the WPI interns, and the mentoring project we are working on at NSPE.

If you have already completed and returned the survey, then we thank you for your time. Your feedback is valuable and will help us assess the quality of the services offered and determine the need for additional services.

If you have not had the opportunity to complete and return the survey, we ask that you take a moment and do it now. Your feedback is extremely valuable!

Again, thank you for taking the time to participate in this important project!

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
WPI NSPE IQP Project
jgray@nspe.org

APPENDIX I: NSPE Mentor Survey 2

Dear NSPE Mentors,

Thank you very much for responding to the earlier survey! We look forward to talking with you. Below are a few questions and information regarding a phone interview. Once again, thank you so much for your input.

Sincerely,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
NSPE WPI IQP Team

Questions:

In general, how valuable do you think a strictly online mentoring relationship would be?

1 (not at all) 2 (fairly valuable) 3 (extremely valuable)

As a mentor – are you comfortable with an online mentoring relationship?

1 (very uncomfortable) 2 (mildly uncomfortable) 3 (fairly comfortable)
 4 (very comfortable) 5 (most comfortable)

Available times for telephone interviews?

Monday (11/12) anytime between 9am-5pm.

Tuesday (11/13) anytime between 9am-5pm.

Wednesday (11/14) between 9-10am and 1-5pm.

Friday (11/16) anytime between 9am-5pm.

Name: _____.

Please indicate a time _____.

Please indicate a phone number _____.

Return this survey to jgray@nspe.org. Thank you.

APPENDIX J: NSPE Mentor Phone Interview

Phone interview Questions for Mentors

DATE of interview: _____ TIME: _____

- 1.) Name _____
- 2.) Phone number: _____
- 3.) Location _____
- 4.) Access ID # _____
- 5.) Gender + Age _____

Notes interviewer should know!!

Questions:

- 1.) How long have you been a member of NSPE? _____
- 2.) How long have you been an NSPE mentor?

- 3.) How many people have you mentored in the past? _____
- 4.) What practice division was it for? _____
- 5.) Why did your past mentorees leave the program?

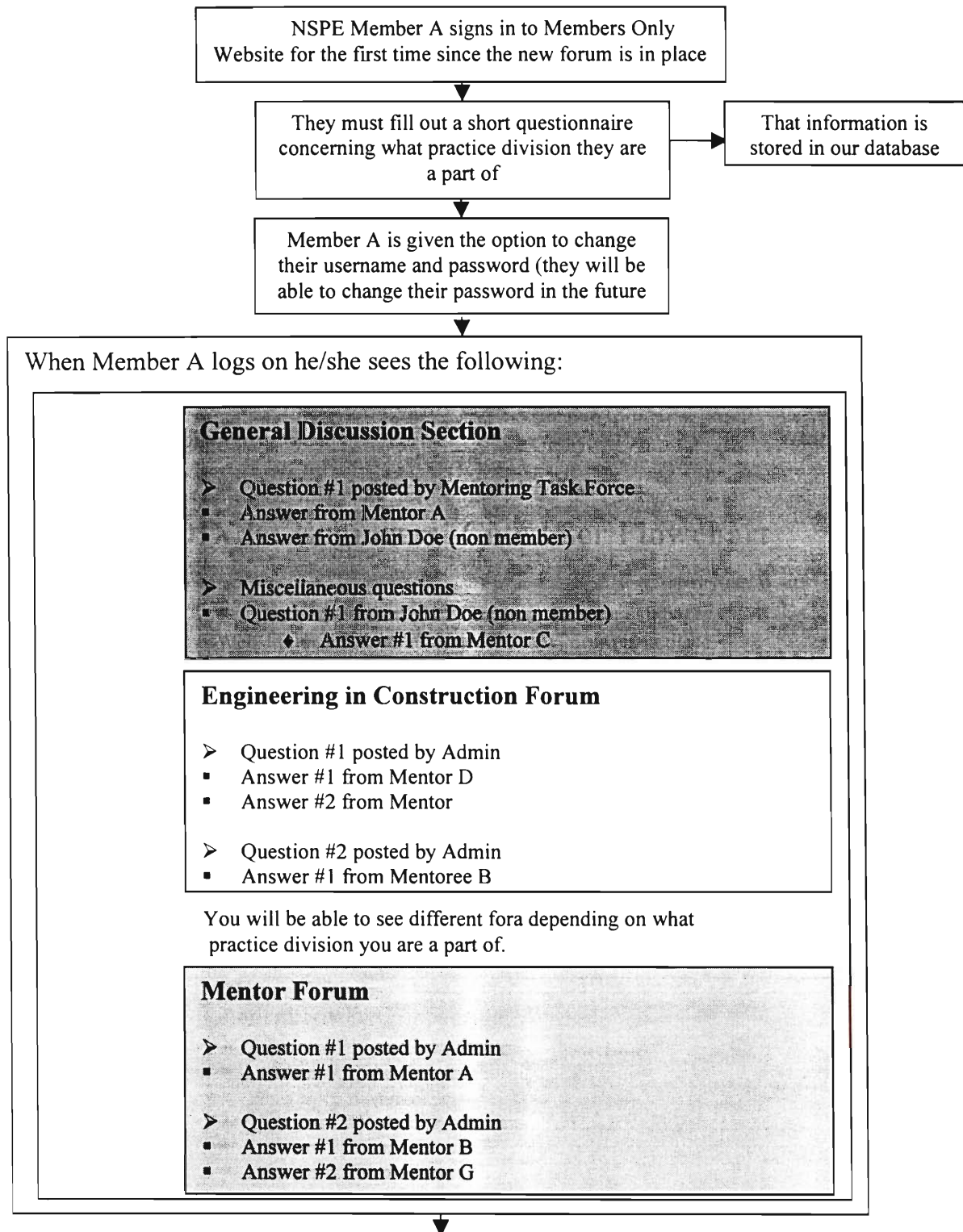
- 6.) How can we make the program more valuable for the mentors?

- 7.) How do you think we can make the program more valuable for the mentorees?

- 8.) How do we make the program more attractive to prospective mentorees?

Thank you so much for your time!!!

APPENDIX K: Engineers' Café User Flowchart



Database records:

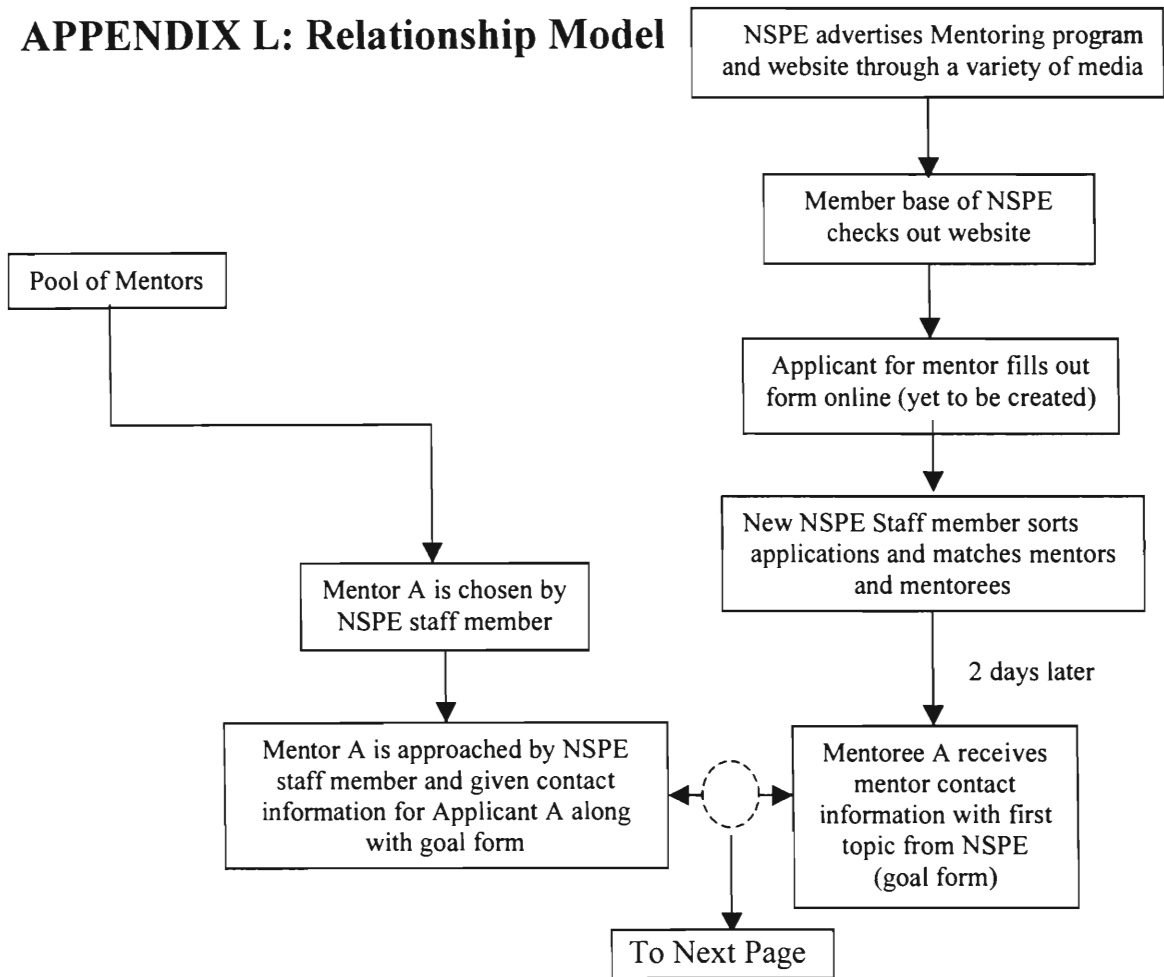
- How many times people log in
 - Number of people reading questions without posting answers
- Number of post of each division and question within the divisions

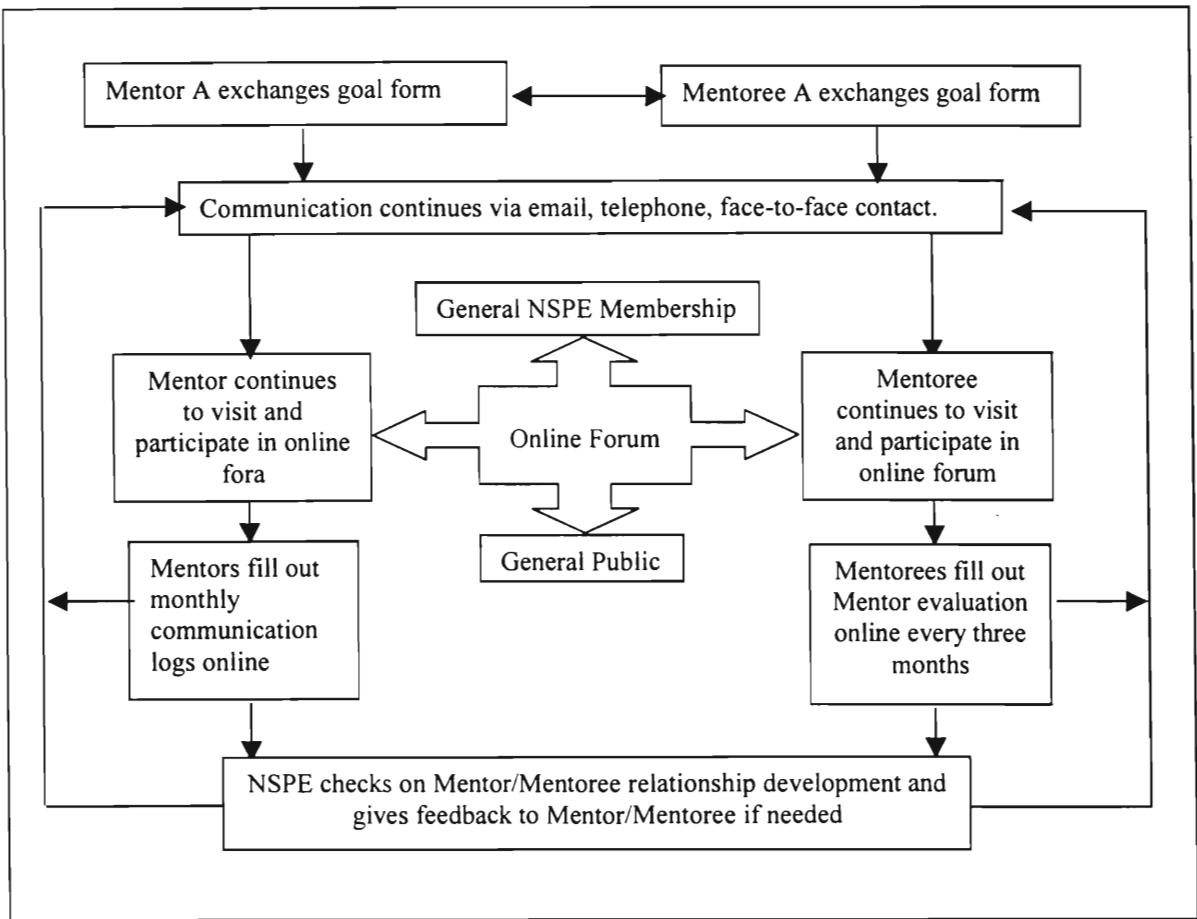


The data collected will be filtered into a form that will either be stored on the database or emailed to the appropriate people once a month

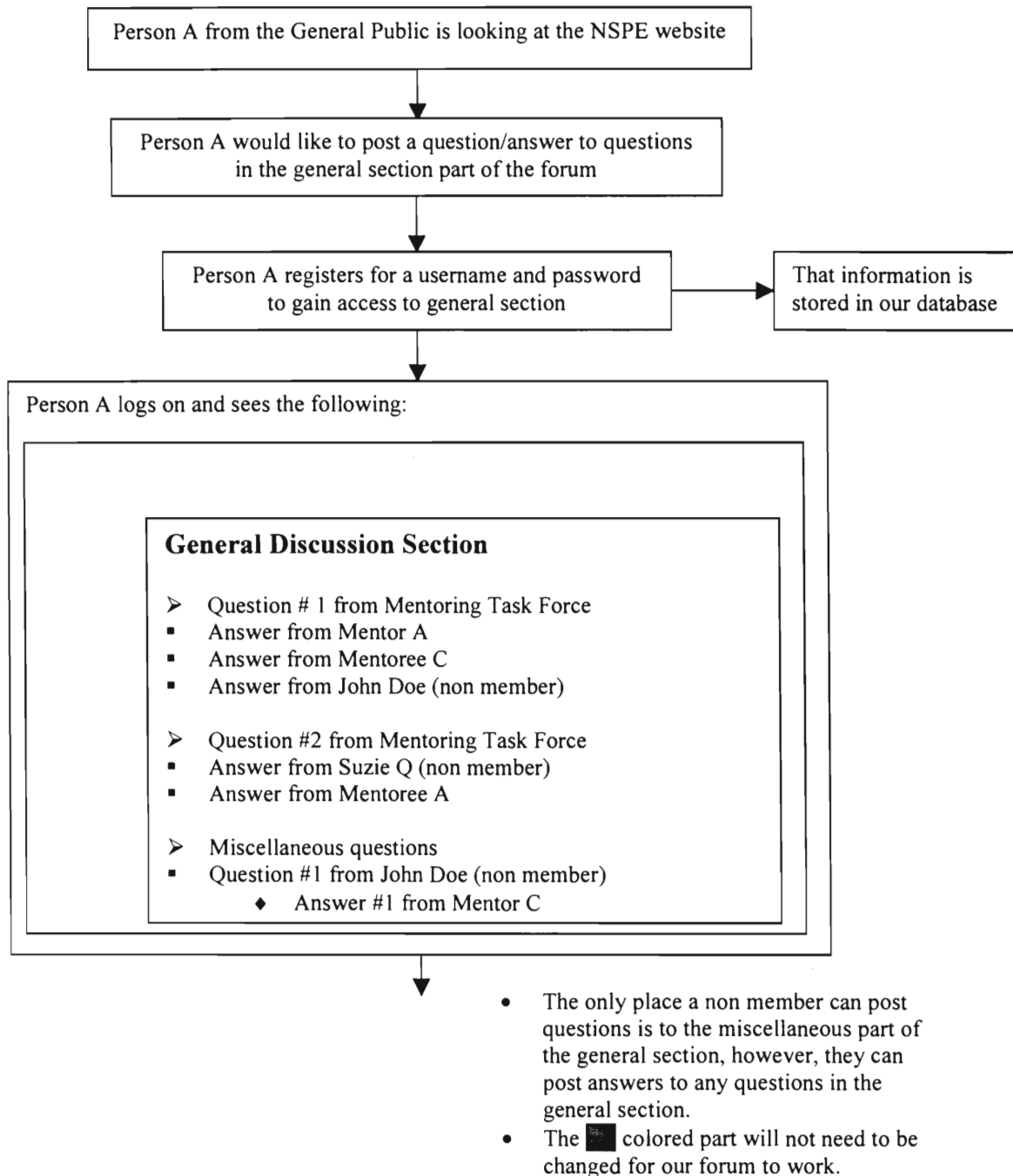
- This example illustrated what sections would be seen by an NSPE member who is a mentor and a member of the Engineers in Construction Practice Division
- The [redacted] colored part will not need to be changed for our forum to work.
- The Orange Section will appear to everyone. You will be able to post if you are signed in.
- The Yellow section will appear to those in the PEC division.
- The Green section will appear to all mentors.

APPENDIX L: Relationship Model





APPENDIX M: User Flowchart



Database records:

- How many times people log on
- Member vs. Non-members logging on
- How many people read questions without posting an answer
- How many posts (answers) each question gets



The data collected will be filtered into a form that will be either stored on the database or emailed automatically to the appropriate people once a month

APPENDIX N: Mentor Communication Log

Mentor/Mentee Communication Log

Log of communication with **List of the User's Mentorees**

Select month and year to report

Number of times Communicated this month **Multiple Choise for Communication Frequency**

Means of Communication used (check any that apply):

- e-mail
- Postal mail
- Phone
- Direct meeting
- NSPE Web forum

All of the communication methods used

Frequent Means of Communication (Choose one most frequently used method):

- e-mail
- Postal mail
- Phone
- Direct meeting
- NSPE Web forum

The most preferred method

Comments:
(How is this Mentor/Mentoree relation going. Any requests to Program organizers)

Mentor Mentoree Communication Log			
Log ID:	5		
Mentor:	Mentoree:	Month:	Year:
jgray	jerry	10	2001
Number of Communication:			10 to 15 times
Means of Communication Used:			
e-mail phone Direct Meeting NSPE Web Forum			
Prefered Means of Communication:			email
Comments:			
This field is for comments. Any text can be entered. The "Bad Word Feature" is not effective here. Implementing such feature may be a good idea.			

[Close Window](#)

APPENDIX O: Diversity Taskforce Survey (Participants)

Diversity Task Force Survey

(to be added to the website after the WPI Interns leave and the website is up)

- This survey is intended for NSPE Mentors/Mentorees.
- 1.) Have you ever communicated with someone on the mentor/mentoree level (including answering questions on the Ask a P.E. site) of a different ethnic background or gender? Yes ___ No ___ Unsure ___
- a.) If yes, would you have been more comfortable communicating with someone of the same ethnic background / same gender?
Yes ___ No ___
- b.) Why?

-
- 2.) How comfortable do you feel having a mentoring relationship with someone of a different gender from yourself?
- ___ 1 (very uncomfortable)
 - ___ 2 (fairly uncomfortable)
 - ___ 3 (no difference)
 - ___ 4 (fairly comfortable)
 - ___ 5 (very comfortable)
- 3.) How comfortable do you feel having a mentoring relationship with someone of a different ethnic background from yourself?
- ___ 1 (very uncomfortable)
 - ___ 2 (fairly uncomfortable)
 - ___ 3 (no difference)
 - ___ 4 (fairly comfortable)
 - ___ 5 (very comfortable)
- 4.) How valuable would homogenous mentoring (same gender / ethnic background) be in comparison with the current mentoring structure?
- ___ 1 (much less valuable)
 - ___ 2 (less valuable)
 - ___ 3 (the same)
 - ___ 4 (more valuable)
 - ___ 5 (much more valuable)
- 5.) On a scale of 1 to 10 how personal do you feel that career guidance is?
- 1.) I would feel comfortable talking to someone of a difference gender or ethnic background from myself about discrimination in the workplace.
- ___ Strongly Disagree
 - ___ Mildly Disagree

- Indifferent
- Mildly Agree
- Strongly Agree

2.) I would feel comfortable asking someone of a different gender or ethnic background from myself for information on job advancement opportunities within the company we work for.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

3.) I would feel uncomfortable asking someone of a different gender of ethnic background from myself about hiring benefits and starting salaries.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

4.) I would feel uncomfortable having someone of a different gender or ethnic background from myself edit my resume.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

5.) I would feel comfortable asking someone of a different gender from myself for advice on interviewing tips.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

6.) I would feel uncomfortable asking someone of a different ethnic background from myself for advice on networking.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

7.) I would feel comfortable talking to someone of a different ethnic background from myself about feelings of inadequacy at work.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

8.) I would feel comfortable asking someone of a different ethnic background from myself about job availability in my profession.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

9.) I would feel uncomfortable asking someone of a different gender or ethnic background from myself about presentation style.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

10.) I would feel comfortable using the resume of someone of a different ethnic background from myself as an example when updating my resume.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

5.) Comments? _____

APPENDIX P: Diversity Taskforce Survey (General)

Diversity Taskforce Survey

(to be added to the website after the WPI Interns leave and the website is up)

- This survey is intended for the general public and members not involved in the mentoring programs.
- 6.) Have you ever communicated with someone on the mentor/mentoree level of a different ethnic background or gender? Yes ___ No ___
- c.) If yes, would you have been more comfortable communicating with someone of the same ethnic background / same gender as yourself?
Yes ___ No ___
- d.) Why?

- 7.) How comfortable do you feel having a mentoring relationship with someone of a different gender as yourself?
- ___ 1 (very uncomfortable)
 - ___ 2 (fairly uncomfortable)
 - ___ 3 (no difference)
 - ___ 4 (fairly comfortable)
 - ___ 5 (very comfortable)
- 8.) How comfortable do you feel having a mentoring relationship with someone of a different ethnic background as yourself?
- ___ 1 (very uncomfortable)
 - ___ 2 (fairly uncomfortable)
 - ___ 3 (no difference)
 - ___ 4 (fairly comfortable)
 - ___ 5 (very comfortable)
- 9.) Do you consider career guidance to be a personal issue? Please read through the list of statements below from top to bottom.
- 1.) I would feel comfortable talking to someone of a difference gender or ethnic background from myself about discrimination in the workplace.
- ___ Strongly Disagree
 - ___ Mildly Disagree
 - ___ Indifferent
 - ___ Mildly Agree
 - ___ Strongly Agree
- 2.) I would feel comfortable asking someone of a different gender or ethnic background from myself for information on job advancement opportunities within the company we work for.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

3.) I would feel uncomfortable asking someone of a different gender of ethnic background from myself about hiring benefits and starting salaries.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

4.) I would feel uncomfortable having someone of a different gender or ethnic background from myself edit my resume.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

5.) I would feel comfortable asking someone of a different gender from myself for advice on interviewing tips.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

6.) I would feel uncomfortable asking someone of a different ethnic background from myself for advice on networking.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

7.) I would feel comfortable talking to someone of a different ethnic background from myself about feelings of inadequacy at work.

- Strongly Disagree
- Mildly Disagree
- Indifferent

- Mildly Agree
- Strongly Agree

8.) I would feel comfortable asking someone of a different ethnic background from myself about job availability in my profession.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

9.) I would feel uncomfortable asking someone of a different gender or ethnic background from myself about presentation style.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

10.) I would feel comfortable using the resume of someone of a different ethnic background from myself as an example when updating my resume.

- Strongly Disagree
- Mildly Disagree
- Indifferent
- Mildly Agree
- Strongly Agree

10.) Would the added feature of choosing a mentor of the same gender from yourself encourage or hinder your decision to join the Mentoring Program?

- 1 (affect in a negative way)
- 2 (slightly dissuade you from joining)
- 3 (not affect decision)
- 4 (slightly encourage you to join)
- 5 (affect in a positive way)

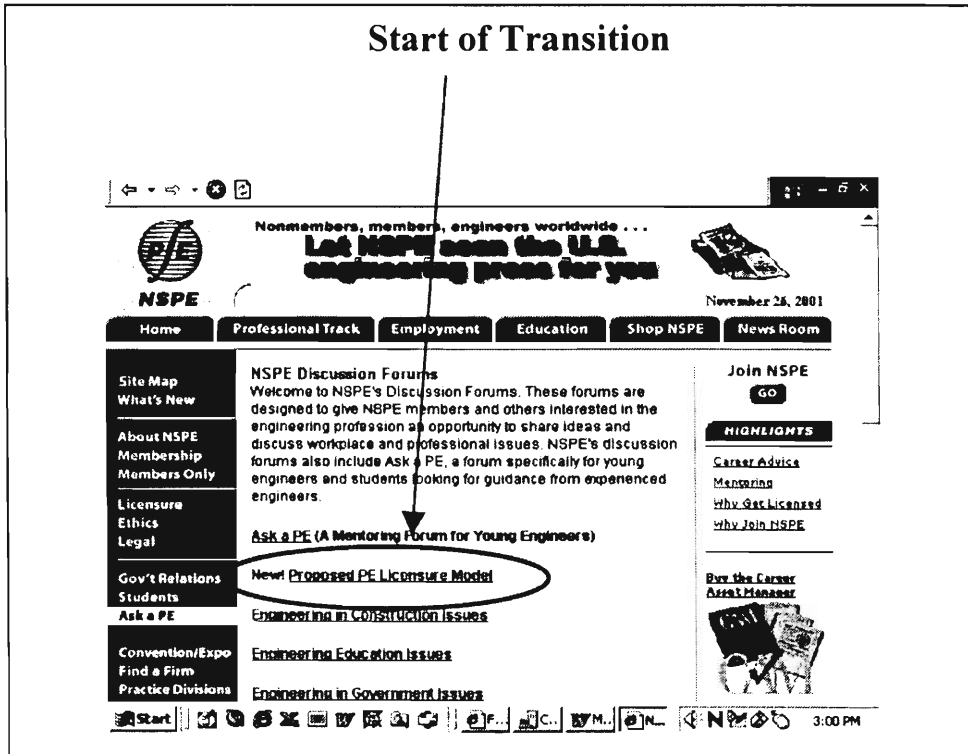
11.) Would the added feature of choosing a mentor of the same ethnic background from yourself encourage or hinder your decision to join the Mentoring Program?

- 1 (affect in a negative way)
- 2 (slightly dissuade you from joining)
- 3 (not affect decision)
- 4 (slightly encourage you to join)
- 5 (affect in a positive way)

7.) Comments? _____

APPENDIX Q: Web Transition Plan

Web site Transition Plan:



2nd Phase

- The current activities on the forum have moved mainly towards to the newer forum

Site Map
What's New
About NSPE
Membership
Members Only
Licensure
Ethics
Legal
Gov't Relations
Students
Ask a PE
Convention/Expo
Find a Firm
Practice Divisions
Ed. Foundation
E-Week
MATHCOUNTS
NSPE Contacts
Advertising
Links

- The sidebar of the main page has the link to the new forum added to it while still keeping the old fora links active

Ask Us
Licensure
Career
Transition
Government
Ask a P.E.

- The link will take the user to a new disclaimer page containing the disclaimer for the forum and the link to the new forum

3rd Phase

- Have a link to the new forum in the main side bar to replace the Ask a P.E. site, but leave the other links the way they are but archive them



Site Map
What's New

About NSPE
Membership
Members Only

Licensure
Ethics
Legal

Gov't Relations
Students
Ask Us

Convention/Expo
Find a Firm
Practice Divisions

Ed. Foundation
E-Week
MATHCOUNTS

NSPE Contacts
Advertising
Links



4th Phase

- Archive all of the old fora in one file
- Have the new forum up and fully functional



Final Phase

- Do away with the archived fora
- New Forum is the only working one

APPENDIX R: State Society Survey

November 16, 2001

Dear State Professional Engineering Society Executive:

My name is Jennifer Gray. I am currently an intern at NSPE. Each year Worcester Polytechnic Institute (WPI) partners with the National Society of Professional Engineers (NSPE) in a mutually beneficial project. This year three WPI Interns will work at NSPE Headquarters to research, coordinate and develop NSPE Mentoring Programs.

Our goal is to create a centralized program that is more accessible and useful for mentors and mentorees. Furthermore, we hope to coordinate all NSPE Mentoring Programs into a more cohesive initiative where one program integrates with another.

I am writing to you in regards to mentoring on the state society level. Does your state society offer any type of mentoring programs? If so, how many participants do you currently have? Would your society be interested in teaming with the NSPE mentoring team to integrate the programs? Any feedback would be helpful. Please send responses to jgray@nspe.org or fax it to WPI Interns at (703)836-4875.

Thank you for your time,

Jennifer Gray
Yasuhiro Okuno
Sabin Thomas
NSPE WPI IQP Team

APPENDIX S: Mentors Survey 3

Survey for Mentors who Refused a Phone Interview

- 8.) How long have you been a member of NSPE? _____
- 9.) How long have you been an NSPE mentor? _____
- 10.) How many people have you mentored in the past? ____ (if answer is 0 skip to question 6)

What practice division was it for?

- Mentoring/Licensure (PEC)
 Career Transition (PEI)
 On-Line Fora
 Mentors in Government (PEI)

- 11.) Why did your past mentorees leave the program?

- 12.) How can we make the program more valuable for the mentors?

- 13.) How do you think we can make the program more valuable for the mentorees?

- 14.) How do we make the program more attractive to prospective mentorees?

APPENDIX T: Mentor Responses

How did you first hear about the mentoring program?

- Vice President PEC for NSPE
- Initiated Government Mentors. Volunteered to serve on Task Force. Nominated to be Coach
- Detroit Conference
- I started following Ask An Engineer
- NSPE Annual meeting
- Asked to participate by chairman, president
- Contacted by Teri Helmlinger
- Creator of program, based on my own career transition three years ago
- Annual Meeting
- fellow engineer
- NSPE Summer Conference in Detroit
- Career Transition Work
- National meeting committee
- Have been in it all along
- I attended a session at July annual meeting
- NSPE meetings
- I was asked to participate
- I helped organize it
- Thru NSPE leadership involvement
- Engineering Times and personal calls/emails from Terry Helmlinger, Bernie Berson, national meeting
- NSPE Regional Meeting
- NSPE Winter meeting
- Surfing through the PEG web site

Why did you become a mentor?

- Help others
- To give back to the Profession
- One way to give back to the profession & help develop it for the future
- I got hooked answering questions on the Fora
- Wanted to help
- Desire to be of service to others and NSPE
- Never learned how to say "NO"
- to share what I learned going through the process
- Help engineers in construction obtain licensure
- I was asked

- It is an important part of professional engineering careers
- Designed the Career Transition program and felt committed to model the importance
- The right thing to do
- Wanted share my knowledge and experience with others
- I was drafted at the time. Thought someone would show up but they didn't. I have a form somewhere with a name and a Phone no. Hope to call college student and help with career choices sometime.
- It is a worthwhile effort - a "feel good" task
- to assist the profession
- to assist in the programs and for personal satisfaction of helping others
- It's the right thing to do, and many folks twist arms well!
- It is something that I would've valued when I was a student
- Help younger engineers get a jump start on the real world.
- to assist others
- Propagate the importance of licensure for the profession of engineering as well as passing on the need for individual success and accomplishment to others

Why did the past mentorees leave the program?

- There was no ongoing relationship.
- The mentor answering had never been in contact with a mentoree.
- Not intended to get any further - at a meeting in Detroit.
- Attained goals.

How can we make the program more valuable for the mentors?

- Have state focused programs.
- Good communication.
- Distinguish between High School students and Young Engineers.
- Better Organization / Clear a path on the Internet to get to the Mentoring pages easier
- Give training to mentors
- Get the mentors together - develop a forum for them - have questions and answers they would be interested in
- Facilitate off-line relationships / one-on-one mentoring
- Suggestions of Topics for Mentor/Mentorees to discuss

How do you think we can make the program more valuable for the mentorees?

- Get a message to Engineering Schools about the programs
- Get resources known to people (mentoring program knows to general public)
- Better Organization / Clear a path on the Internet
- Deliver advice and follow-up to make sure the question was answered and/or the person who needed help got it
- Website - looks great - maybe improve it if that's possible
- Communicate to them - Communicate with the Universities
- Have more mentors in the program with a wilder background
- Monitor postings
- Facilitate the relationship in both directions

How do we make the program more attractive to prospective mentorees?

- Go to Student Chapters to talk about the programs
- Have satisfied customers
- Make them more aware of website. Put ads in industrial magazines and on the web.
- Get the word out - He visits websites at least once or twice a week and thinks it would be a good idea to use the website
- They are looking for a job in Career Transition / We need to let them know that there are people here who can help them
- Advertise successes and interaction that goes on in the program
- Expose them to the program - use email in publicity efforts
- Promote at the Universities
- Make sure we have a program that reaches all ages and backgrounds. Anyone can be mentored. Get the word out about a program that is for anyone.
- Testimonial type things from NSPE and from other mentoring programs

APPENDIX U: Mentoree Survey Response

Please indicate your choice with an [X] or provide information where appropriate.

1. Last Name
 2. First Name
 3. Gender Male
 Female
 4. Age under 35
 36-45
 46-55
 56-65
 over 65
 5. Mentoring Program that you are involved in
 Licensure
 Career Transition
 Mentors in Government
 6. Reason for Involvement: (No Response)
 7. How many times have you communicated with your mentor over the past 6 months? 1 Time
 8. How many times would you like to communicate? 5-10 times
 9. What means of communication do you use e.g. phone, email?
Phone or Email
 10. How would you rate your experience in the mentoring program, on a scale of 1-5?
 1 – Poor
 2
 3
 4
 5 – Best
- Comments: (No Response)
11. How would you rate the program overall, on a scale of 1-5?
 1 – Poor
 2
 3
 4
 5 – Best
- Comments:
12. Would you prefer filling out a Program Evaluation form online?
 Yes
 No

13. What other types of services related to mentoring would you like the NSPE to offer, or what services do you anticipate a need for in the future?

(No Response)

14. Would you be willing to participate in a phone interview (10-15min) with the WPI Interns?

Yes

No

15. Do you prefer future contact via email or phone?

Email

Phone

APPENDIX V: Uniform Application

PEC MENTORING LICENSURE PROGRAM

Request for Mentoring

Thank you for considering the National Society of Professional Engineers (NSPE) Professional Engineers in Construction (PEC) Mentoring/Licensure Program to assist you in achieving your career goal of receiving your P.E. designation. In order to best serve your needs, we ask that you answer the following questions. This information will help us identify the most appropriate PEC mentor for you. You are welcome to attach your resume when submitting this request.

1. NAME: _____

2. EMPLOYER:

3. POSITION:

4. ENGINEERING SPECIALITY:

5. WHICH BEST APPLIES TO YOU: ___ Student
 ___ Early Career (0-10 years)
 ___ Mid-Career (10-20 years)
 ___ Executive Career (20+ years)
 ___ Retired

6. WHAT YEAR DID YOU JOIN NSPE: _____ or [] I am not a member

7. MAILING ADDRESS:

8. PHONE: _____

FAX: _____

9. EMAIL:

10. WHAT DO YOU HOPE TO GET FROM YOUR NSPE MEMBERSHIP? _____

11. WHAT INTERESTS YOU ABOUT THE MENTORING PROGRAM?

12. HOW IMPORTANT IS IT TO YOU TO HAVE A MENTOR OF THE SAME GENDER AS YOURSELF?

- _____ 1 (not at all)
- _____ 2
- _____ 3
- _____ 4
- _____ 5 (very important)

13. HOW IMPORTANT IS IT TO YOU TO HAVE A MENTOR OF THE SAME ETHNIC BACKGROUND AS YOURSELF?

- _____ 1 (not at all)
- _____ 2
- _____ 3
- _____ 4
- _____ 5 (very important)

14. WHAT GOALS DO YOU HAVE FOR YOURSELF WHILE BEING MENTORED:

- Becoming a Licensed Professional Engineer**
- Becoming acclimated to a new career path**
- Have more resources for career needs**
- Other: _____**

15. WHAT EXPECTATIONS DO YOU HAVE OF YOUR MENTOR?

16. WHAT IS YOUR PREFERRED MEANS OF COMMUNICATION FOR INTERACTION WITH YOUR MENTOR?

17. HOW OFTEN WOULD YOU LIKE TO COMMUNICATE WITH YOUR MENTOR? _____

18. Do you participate in PEC Practice Division? _____

19. If you are not an NSPE member, is your employer a PEC Sustaining Firm?

_____ (PEC Sustaining Firms are listed by state at www.nspe.org/firms-pec)

20. Are you currently employed in the construction industry?

_____ What is your field of interest:

_____ Area of expertise:

30. Is your employer aware of your interest in becoming a P.E.?

31. Is your employer supporting your interest?

32. Are you a graduate of an ABET accredited program?

College or university:

Date of graduation:

Degree earned:

33. Have you passed the F.E. exam?

When?

34. In which state(s) do you wish to become licensed? _____

35. Have you applied to take the P.E. exam previous to this attempt? _____

If your application was denied, in which state did you apply and what were the reasons your application was denied? Please give as much detail as possible.

36. Do you have a written summary of your engineering experience?

37. If your answer is yes, would you be willing to submit it to the PEC Mentoring/Licensure group for review and comment?

Please submit this request, along with any attachments, to: Mary K. Maul, Practice Division Manager/PEC, NSPE, 1420 King Street, Alexandria, VA 22314. Phone: (703) 684-2857, Fax: (703) 836-4875. Email: mmaul@ntl.org.

ENGINEERS' CAFÉ

**ADMINISTRATOR / DEVELOPER
TRAINING MANUAL**

Sabin Mammen Thomas
Yasuhiro Okuno
December 17, 2001

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1 INTRODUCTION

The Engineers' Café is an integrated online forum software that can be used to post topics and categories. The aim of this training manual is to enable the administrator of the Engineers' Café to modify and use the software to its fullest potential.

2 WHAT CAN THE ENGINEERS' CAFÉ DO?

The Engineers' Café has a number of features that are listed as follows

1) Login feature

This enables tracking of the members as they access different forums.

2) Post new categories/forums

3) Ability to restrict access to certain forums.

4) Evaluation System

The Engineers' Café is able to monitor forum usage and provide reports that indicate internet traffic all over the forum

5) User friendliness

The Café is designed to be easy to use by both members and administrators, and allows for easy modification of background colors, topics, forums and topics.

6) Communication Logs

The Café provides for logs that can be filled online.

3 INSTALLATION OF ENGINEERS' CAFÉ

This section is intended for web server administrators and assumes the reader has enough knowledge about web server configurations and database server configurations. In this section, all of the installation steps are explained assuming the use of SQL server 7 / 2000. Using any other version of Microsoft SQL Server, Access or MySQL will require manual construction of the Database using the SQL statements attached in APPENDIX A. This section is intended for developers familiar with SQL as well as the Microsoft IIS and MS SQL Server 7 / 2000 and assumes previous knowledge on basic setup of web sites and databases. Additionally, ASP knowledge will be required if any problems are encountered or to implement modifications to the software.

3.1 DATABASE PREPARATION

This section will discuss the steps to prepare the SQL 7 / 2000 server for the installation of the Engineers' Café Database.

The Engineers' Café's tables can coexist within an existing database but it is not recommended. Setup a new database in the SQL server (will be referred as EC database) and Forum User (will be referred as EC User) with Create Table permission to the EC database.

3.2 EDITING THE CONFIG.ASP FILE

Next step is to edit the config.asp file containing the database connection configuration information.

Open the config.asp file located in the forum directory using a text editor (please do not use editors included in an IDE package or front page html editor since they may cause problems).

Find the word "strDbType" and uncomment the line that best fits the database type of the EC database. This is set to sqlserver for people using the SQL server 2000.

Right after the strDbType, there are Connection strings (strConnString) to the database. Uncomment the line that best fits your database and edit the line to connect to the EC database. Here, the user used to connect will not need to be

the EC User. If you decide to use a different user for usual access of the database, the user has to be able to SELECT, INSERT, UPDATE and DELETE in the tables created during the table setup in section 2.1.

There should be only one `strDbType` and `strConnectionString` uncommented. Others should be commented.

The `strTablePrefix` and `strMemberTablePrefix` should be fine for the first installation unless EC database already contains other tables.

3.3 SETUP DATABASE USING “SETUP.ASP”

After the Engineers’ Café database and the configuration string are set up, the *setup.asp* script can be used to insert all tables used by the Engineers’ Café software.

Go to the URL:

“http://your.server.address/forum_directory_name/setup.asp?RC=5”

This will force the setup script to go into installation sequence. From here follow the instructions using the Engineers’ Café User name and password to create the tables for the Engineers’ Café. If all goes well, the database will be setup and the link to the database test page will be displayed. After the database test page, the forum will be available at the URL:

“http://your.server.address/forum_directory_name/default.asp”.

If any errors occur, the errors returned during the setup will be listed after all the script has been executed. The script has been tested on SQL server 2000 development edition and has been verified with permissions correctly set.

**Page missing in
original**

IQP/MQP SCANNING PROJECT



**George C. Gordon Library
WORCESTER POLYTECHNIC INSTITUTE**

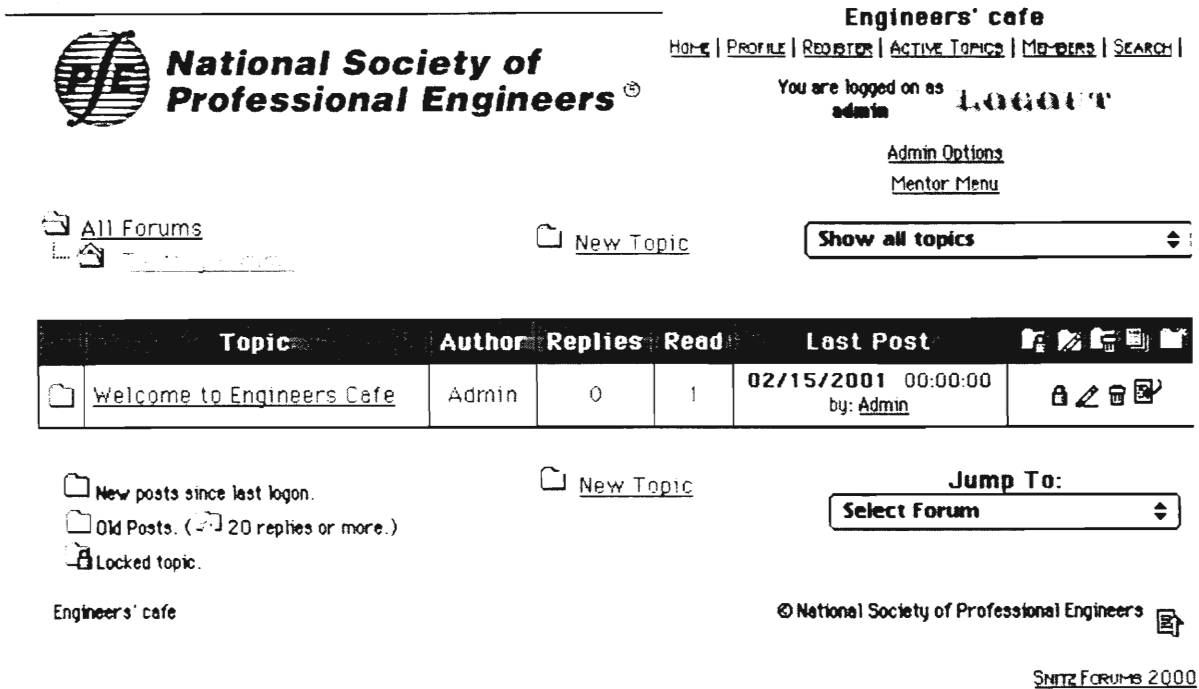


Figure 1 – Front page of Engineers' Café

To change the profile of the administrator, follow the link “Profile” right under the Text “Engineers Café” at the top right of the web page. This is indicated with the red circle in Figure 2.

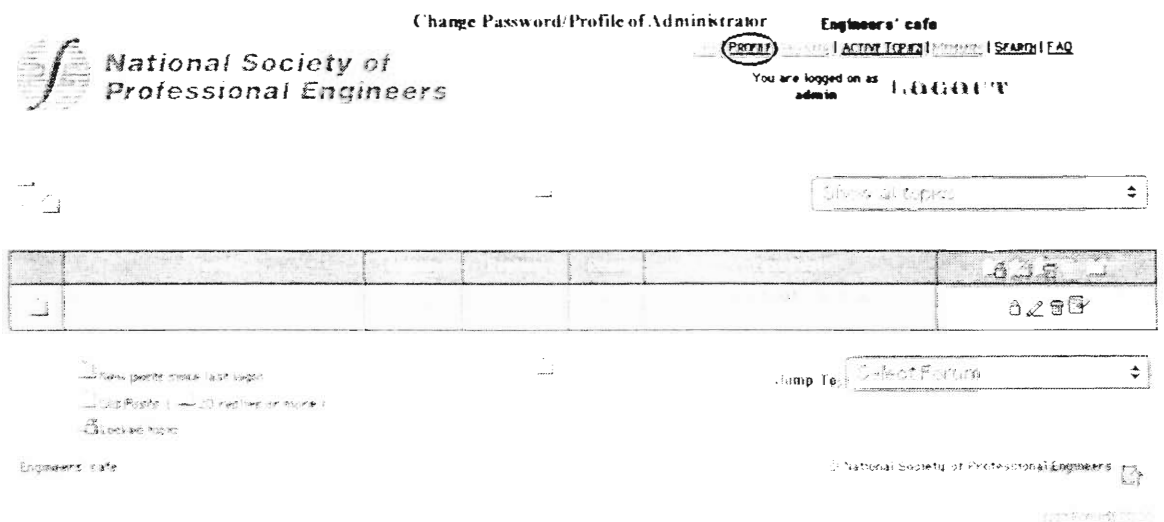


Figure 2 – Edit Profile Link

After following the profile link, you may see another prompt for login information as shown in Figure 3. The same login information as you logged

into the site should be used here (User Name “admin” Password “admin”). Just type in admin for both fields indicated with red text in Figure 3.

Admin Login	
UserName:	Admin
Password:	Administrator Password
<input type="button" value="Login"/>	

Figure 3 – Verification Login Prompt

After the verification process, the profile-editing page should appear. The page should look something like Figure 4.

Edit User Profile

All Fields marked with * are required

Contact Info	Basics
*Email Address: <input type="text" value="yourmail@server.com"/>	*User Name: Admin
<input type="radio"/> NSPE Member	* Password: <input type="password" value="....."/>
<input checked="" type="radio"/> Non Member	* Password Again: <input type="password" value="....."/>
*Membership Number: <input type="text"/>	Firstname: <input type="text"/>
Only for NSPE members	*Lastname: <input type="text"/>
ICQ: <input type="text"/>	City: <input type="text"/>
YAHOO IM: <input type="text"/>	State: <input type="text"/>
AIM: <input type="text"/>	Country: <input type="text"/>
Links	
Homepage: <input type="text" value="http://"/>	Age: <input type="text"/>
Cool Links: <input type="text"/>	Sex: <input type="text"/>
More About Me	
Bio: <input type="text"/>	Occupation: <input type="text"/>
	Signature: <input type="text"/>

[Back To Forum](#)

Figure 4 – User Profile editing page

The sections circled in red in Figure 4 must be changed.

- **Email Address** – This is the e-mail address of the administrator. This will show up as the official contact e-mail address for any people who have questions or inquiries. Set it to the e-mail address of whoever is in charge of the entire forum.
- **NSPE Member/Non Member** – This should be kept as Non Member

for administrators.

- ICQ/YAHOO IM/AIM – This is not necessary, although if the administrator of the forum accepts any of these contact methods, this fields can be entered.
- Links – This is also unnecessary. If this field is filled in, the links will be listed in the administrators profile page.
- Bio – Biographical information of administrator. Not required.
- User Name – Fixed for administrator. This cannot be changed for the admin.
- **Password** – This must be changed from the original password (admin) to some other password for protecting the forum site from malicious attackers.
- First Name/Last Name – Not required for administrator. Last name is required for registering a new account and is used to check the NSPE membership status by matching the last name and the NSPE ID number (if provided). This is not required for administrators.
- The Rest of the information is not required.

4.2 ADMINISTRATOR OPTIONS

To get to the administrator Options page, click on the Admin Options link on the top right corner of the web page as indicated in Figure 5.

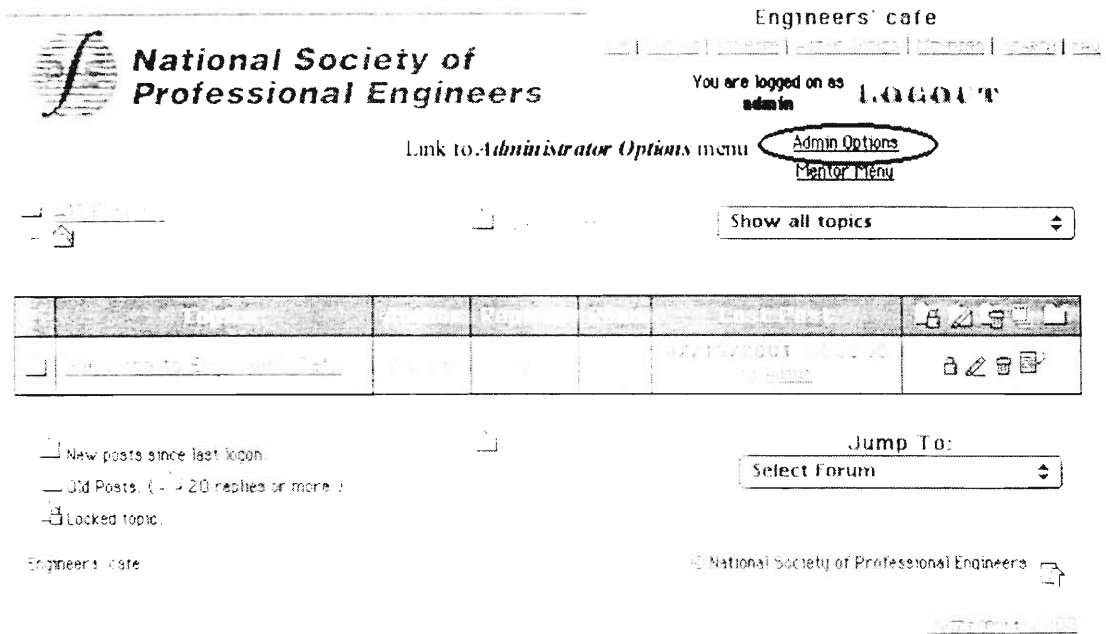


Figure 5 – Admin Options Link

Following the link, you may be prompted to enter a user name and password shown in Figure 3. Here, the username should be admin and the password should be the new password you have set for the administrator.

The next page should be the list of administrative options as shown in Figure 6.

Administrative Functions	
<p>Forum Feature Configuration:</p> <ul style="list-style-type: none"> • Main Forum Configuration • Feature Configuration • Member Details Configuration • Ranking Configuration • Server Date/Time Configuration • Email Server Configuration • Font/Table Color Code Configuration • Bad Word Feature Configuration • Configure Category/Forum Order 	<p>Other Configuration Options and Features:</p> <ul style="list-style-type: none"> • Moderator Setup • Email List • Server Information • Forum Variables Information • Update Forum Counts • Archive Forum Topics • Match up Mentor and Mentoree • MOD Setup • Reset Communication Log status • Check Installation (Run after each upgrade !)

Figure 6 – Administrative Functions menu

Brief explanations of all of the listed functions are as follows:

- Main Forum Configuration – Here you can configure some of the basic configuration of the forum such as the Forum name and

Home page URLs.

- Feature Configuration – This option allows you to change the details of how the forum operates. Some options include “Allow HTML”, “Show Moderators”, or “IP Logging.”
- Member Details Configuration – This section sets what information should be listed for Member information when they register.
- Ranking Configuration – This page defines member-ranking configuration such as How many post a user needs to become from a first level member to the second level, and what their title and star should be.
- Server Date/Time Configuration – This is useful to set the difference in time zone between the location of the server and the location of the forum administrator.
- Email Server Configuration – Here is where all the e-mail server configurations are entered as well as the Web Administrators e-mail address (this address is separate from the admin user e-mail address). By setting up the e-mail server, new registered members will be able to obtain e-mail on their registration information and verify what they have entered for their registration
- Font/Table Color Code Configuration – Here all of the outlook of the Engineers’ Café can be configured. From Font, Size of text, color of text as well as background and table colors.
- Bad Word Feature Configuration – Here you can define words, which will be censored automatically by the software when topics are posted in the Engineers’ Café.
- Configure Category/Forum Order – Here you can organize the categories and forums and decide how the categories and forums are listed.
- Moderator Setup – Assign Moderators to different Forums.

This can also be used to create a News forum where only moderators can post news and the public has only the reading capability.

- **Email List** – This link will list all of the e-mails which are registered to the system.
- **Server Information** – Shows vital Web Server Configuration information.
- **Forum Variable Information** – shows all of the configuration information of the Forums software in detail.
- **Update Forum Counts** – Link to the Count page giving you a statistical report of the forum activity by Member levels (Non Member, NSPE Member and Mentor) and by each category.
- **Archive Forum Topics** – Archive old forums. Should be done each month to archive old posts. This will also reset the count since the counts will only be the non-archived topics and replies. The topics within a month cannot be archived.
- **Match up Mentor and Mentoree** – Choose a mentor and a mentoree to be matched up. Also, there is an option to split the mentorees.
- **MOD Setup** – The Snitz Forum 2000's MOD setup. Please do not use any MOD obtained from other sites since the Engineers' Café is already modified and is not in the original form. Any Modification plug-ins designed for Snitz Forum 2000 is not guaranteed.
- **Reset Communication Log Status** – This link will reset the Log status of all Mentorees to "Communication Log Pending." Mentors with any mentorees set as Log pending will be prompted as they log into the Engineers' Café site.
- **Check Installation** – Installation Check. Checks the database and see if the software is correctly installed.

Please follow the following section carefully when the forum is just set up

to make sure the forum will act as desired.

4.2.1 MAIN FORUM CONFIGURATION

By following the Main Forum Configuration link, you will be taken to the page shown in Figure 7.









Main Forum Configuration	
Forum's Title:	Engineers' cafe 
Forum's Copyright:	© National Society of Profes 
Title Image Location:	NSPE_logo.gif 
Home URL:	./ 
Forum URL:	http://www.nspe.org/ 
Version info:	[Snitz Forums 2000 Version 3.3.03]
Authorization Type:	DB: <input checked="" type="radio"/> NT: <input type="radio"/> 
Set Cookie To:	Forum: <input checked="" type="radio"/> WebSite: <input type="radio"/> 
Use Graphics as Buttons:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Use Graphic for "Powered By" link:	On: <input type="radio"/> Off: <input checked="" type="radio"/>
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 7 – Main Forum Configuration

As a general rule, the uniform buttons at the bottom that appear in every configuration pages are:

- Submit New Config – Submit any changes you have made to the configuration to take effect.
- Reset Old Values – Reset all the values to the values it was previously in.

Also, the question mark icon link will pop up a new window with the explanation of the field although we have found out that there are some without any information about the fields.

- Forum Title – This is the title of the forum. It will show up in the Windows title bar of the web browser. It will also be displayed at the top right norner of every page.
- Forum Copyright – This will be displayed at the bottom of each site in

the Engineers' Café. Claiming copyright for any logos that are used in the site.

- Title Image Location – File location of the title image on the server. The logo that appears in the left top corner of every Engineers' Café page.
- Home URL – URL of the home page off the hosting organization. This should be set to the NSPE home page URL. This link will be used to apply a link to the Title Image displayed at the top left of each page.
- Forum URL – URL of the Engineers' Café. This will be linked to the “Home” link in the list of menus on the top right corner of every page.
- Authorization Type – How the users passwords and login will be verified at login.
 - DB – includes all information in the database and checks against the user name and password listed in the database for authorization.
 - NT – uses the Windows NT or 2000 user authentication. This may not be desirable though it will give a little more security. All of the users of this forum will have a login to the server and may not be the best configuration. (This setting is not tested under the modification made to Engineers' Café, so this setting may render the forum unusable)
- Set Cookie To – Choose where the cookie should be set.
 - Forum – This way, you can host multiple forums of the same type on a single server and have two separate communities of users.
 - WebSite – This way all of the cookie information is shared throughout the web site. This is desirable when there is only one copy of the Snitz Forum 2000 or it's counterpart is running or

the multiple forums on the server share the same user community.

- Use Graphics as Buttons – Graphical buttons are used wherever available if turned on. The buttons can be replaced by other picture files to change the outlook of the Engineers' Café.
- Use Graphics for “Powered By” link – The Powered By Snitz Forum 2000 link at the bottom right of every page will be done using Graphics if this option is turned on. Otherwise, a text link will be shown instead.

These variables can be defined to suit the needs of the NSPE web site though some restriction may apply.

4.2.2 FEATURE CONFIGURATION

By following the Feature Configuration link in the Administrative Options page, you will be taken to the page shown in Figure 8.



















Feature Configuration	
Restrict Moderators to moving their own topics:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
AutoEmail author when moving topics:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
IP Logging:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Private Forums:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Show Moderators:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Allow Forum Code:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Images in Posts:	On: <input type="radio"/> Off: <input checked="" type="radio"/> 
Allow HTML:	On: <input type="radio"/> Off: <input checked="" type="radio"/> 
Secure Admin Mode:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Non-Cookie Mode:	On: <input type="radio"/> Off: <input checked="" type="radio"/> 
Edited By on Date:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Hot Topics:	On: <input checked="" type="radio"/> Off: <input type="radio"/> <input type="text" value="20"/> 
Icons:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Detailed Statistics:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Show Quick Paging:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Show Prev / Next Topic:	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Allow Topic Moderation	On: <input checked="" type="radio"/> Off: <input type="radio"/> 
Highest level of Subscription:	<input type="text" value="Subscribe by Category"/> 
Items per page:	<input type="text" value="15"/>
Pagenumbers per row:	<input type="text" value="10"/>
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 8 – Feature Configuration

- Restrict Moderators to moving their own topics – This feature allows (off) or denies (on) a moderator of one forum to move topics within their own forum to someone else’s forum where they do not have moderator rights.
- Auto Email author when moving topics – If turned on, the topic author is e-mailed when his topic is moved.
- IP Logging – if turned on, it logs the IP address of the user who has posted the topic.
- **Private Forums – This option must be turned on.** Engineers’ Café is not designed to operate without this option.
- Show Moderators – When this is turned on, all of the moderators for the forum will be listed beside that forum.
- Allow Forum Code – Allow users to post using the Forum Code, which allows for HTML like text styling to format their text. This is a safe alternative to Allowing HTML which may allow some malicious user to try to corrupt the forum page.
- Images in Posts – This allows anyone to post an image in their topic. It is advised to keep this option off since this could lead to people posting potentially objectionable material.
- **Allow HTML** – This allows users to format their posts using HTML. Although this opens a whole big hole in the security of the Engineers’ Café since anyone can enter objectionable material or Javascript to corrupt the website or infect the viewers with a virus. **(Advised to be turned OFF)**
- **Secure Admin Mode – Must not be Turned OFF unless absolutely necessary. When turned off, everyone has access to all administrative options.**
- Non-Cookie Mode – Keep turned OFF. Turning this ON will allow all users to access the administrative options.
- Edited By on Date – With this option turned on, there will be a footer

on all post that have been edited noting when it was edited and by whom.

- Hot Topics – When turned on, if a topic contains the amount specified in this field or more posts, the topic will be distinguished as “Hot Topic” and will be displayed differently to identify that this topic is very active.
- Icons – Allow “Smile Faces” and other icons allowed by the forum to be used within the posts.
- Detailed Statistics – When turned on, a detailed statistics of the activity of the forum will be displayed at the bottom of the front page.
- Show Quick Paging – Page number links will be displayed if a topic has more than one page of posts.
- Show Prev / Next Topic – Self explanatory. Previous Next Topic link will be displayed in the topic view.
- Allow Topic Moderation – Allow to moderate specific topics by the authors of the topic.
- Highest level of Subscription – This will define the level of subscription a user can use.
- Items per Page – Number of Topics / Posts that will be displayed per page.
- Page numbers per Row – Number of page numbers that will be displayed in row (list of page number links to jump to certain pages)

4.2.3 MEMBER DETAILS CONFIGURATION

Follow the Member Details Configuration link in the Administrative Options page to get the page shown in Figure 9.

Required

Member Details Configuration	
Fullname:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Picture:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
Recent Topics:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Sex (male/female):	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Age:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
City:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
State:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Country:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
ICQ:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
YAHOO:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
AIM:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Occupation:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Homepages:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Favorite Links:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Marital Status:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
Bio:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Hobbies:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
Last News:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
Quote:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 9 – Member Details

When they are turned on, they will be listed in the Profile page and will be asked at the user's registration or in the User Profile editing page.

- **Fullname** – This is required for the operation of the Engineers Café since it is used to verify the users NSPE Membership information.
- **Picture** – if turned on, users can put pictures on their profiles.
- **Recent Topics** – Save which post he has made most recently and display with his profile.
- **Sex (male/female)** – Self-explanatory. Gender is asked in the profile editing page or the registration page if turned on although not required.
- **Age** – Age is asked for the profile. Although will not be required.
- **State** – State where the user resides. Not required
- **Country** – Country where the user resides. Not required.
- **ICQ / YAHOO / AIM** – Their Chat software contact information. This is not necessary although it is a good way to provide other means of communication.
- **Occupation** – User's occupation, not required.
- **Homepages** – User's Homepage. Not required.
- **Favorite Links** – Favorite Links.
- **Marital Status**
- **Bio** – Biographical information on the user.
- **Hobbies**
- **Last News** – a text field to enter their latest news.
- **Quote** – another text field to enter any quote the user may have

4.2.4 RANKING CONFIGURATION

The Ranking Configuration page is shown in Figure 10.

















Ranking Configuration	
Show Ranking:	Rank Only 
Administrator Name:	Administrator 
Star Color:	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Moderator Name:	Moderator 
Star Color:	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Starting Member Name:	Starting Member Number: 0 
Member Level 1 Name:	New Member Number: 50 
Star Color:	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Member Level 2 Name:	Junior Member Number: 100 
Star Color:	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Member Level 3 Name:	Average Member Number: 500 
Star Color:	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Member Level 4 Name:	Senior Member Number: 1000 
Star Color:	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
Member Level 5 Name:	Advanced Member Number: 2000 
Star Color:	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> 
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 10 – Ranking

- Show Ranking
 - None – No ranking information
 - Rank only – Show the Rank name only
 - Star only – Show the stars but not the Rank
 - Rank and Stars – Show both
- Administrator Name – Title of the Administrator
- Moderator Name – Title of the Moderator
- Starting Member Name – Title of the starting member
- Member Level N Name – Title of Level N member

Each of the Star color right below each rank will be used for the user with that particular rank. The Numbers indicate the number of posts they have to make to obtain this rank.

4.2.5 EMAIL SERVER CONFIGURATION

In the Email Server configuration page, information on the e-mail server and Administrator email address can be defined. The page is shown in Figure 11.

Email Server Configuration	
Select Email Component:	CDONTS <input type="button" value="v"/> <input type="button" value="?"/>
Email Mode:	On: <input type="radio"/> Off: <input checked="" type="radio"/> <input type="button" value="?"/>
Email Server Address:	your.mailserver.com <input type="button" value="?"/>
Administrator Email Address:	your.email@yourserver.com <input type="button" value="?"/>
Require Unique Email:	On: <input checked="" type="radio"/> Off: <input type="radio"/> <input type="button" value="?"/>
Require Logon for sending Mail:	On: <input checked="" type="radio"/> Off: <input type="radio"/> <input type="button" value="?"/>
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 11 – E-mail Server

- Selected Email Component – Type of mail server used.
- Email Mode – Turning this option on will require an Email Server Address. This allows the system to send emails on registration notifications and other e-mail sending options can be used with this. Turning this option off will turn off all e-mail related functionality of the Engineers' Café
- Email Server Address – Address of the e-mail server.
- Administrator Email Address – This will be displayed at the Policy page before the registration page as the official contact e-mail for any questions on the Engineers' Café
- Require Unique Email – Advised to be kept ON. With this option turned on, the user needs to register with a unique e-mail address. This way, one user cannot register with multiple user names with the same e-mail address.
- Require Logon for sending Mail – for sending personal mails through this forum requires logging on to the system.

4.2.6 FONT/TABLE COLOR CODE CONFIGURATION

This page configures all of the colors and font sizes of the entire forum. This should be left to the Web coordinator at NSPE to decide the “looks” of this forum. The settings shown in Figure 12 are the default that we decided using most of the same colors as the NSPE’s current web site.

Font/Table Color Code Configuration	
Font Face Type:	Arial, Helvetica, Verdana ?
Default Font Size:	2 (10 pt) ?
Header Font Size:	4 (14 pt) ?
Footer Font Size:	1 (8 pt) ?
Base Background Color:	white ?
Default Font Color:	black ?
Link Color:	*993333 ?
Link Decoration:	underline ?
Visited Link Color:	*999966 ?
Visited Link Decoration:	underline ?
Active Link Color:	red ?
Hover Link Color:	red ?
Hover Link Decoration:	underline ?
Header Background Color:	*006666 ?
Header Font Color:	mintcream ?
Category Background Color:	*CCCC99 ?
Category Font Color:	*000000 ?
First Cell Color:	whitesmoke ?
First Alternating Cell Color:	whitesmoke ?
Second Alternating Cell Color:	gainsboro ?
In Forum Font Color:	*006666 ?
In Forum Link Color:	*993333 ?
Table Border Color:	black ?
Pop-Up Table Color:	*CCCC99 ?
Pop-Up Table Border Color:	black ?
New Font Color:	blue ?
Table Size Configuration	
Topic Left Column Width:	100 ?
Topic NOWRAP Left:	On: <input checked="" type="radio"/> Off: <input type="radio"/> ?
Topic Right Column Width:	100% ?
Topic NOWRAP Right:	On: <input type="radio"/> Off: <input checked="" type="radio"/> ?
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	

Figure 12 – Interface

Refer to the Question Mark link for further explanation. All of the colors can be entered as if they were to be entered into the HTML tag. So to get the color #993333 at First Cell Color, enter #993333 in the field. This will transfer to the tag <td bgcolor=" #993333"> wherever it is applicable. We have tried to use this configuration feature as best as we could in the developed web pages so as to have a consistent look throughout the Engineers' Café.

4.2.7 BAD WORD FEATURE CONFIGURATION

Bad Word Filter link will take you to a page shown in Figure 13. Here, all of the censored words can be entered and the automatic censoring system can be turned on or off. All of the words listed in the text box delimited by “|” or bar character will be censored and will be removed from any posts in the forum when they are being posted. So word1, word2, and so on would be replaced by any undesirable words.



Bad Word Feature Configuration	
Bad Word Filter:	On: <input checked="" type="radio"/> Off: <input type="radio"/> word1 word2 word3 wo 
<input type="button" value="Submit New Config"/> <input type="button" value="Reset Old Values"/>	


Figure 13 – Bad Word Feature


5 ICONS





You will find the above icons used frequently in the Engineers' Café. Here we detail the general function of each of these icons.


 - Edit: This icon will link to the editing page for the associated item.

 - Erase: This icon will erase / remove the associated item

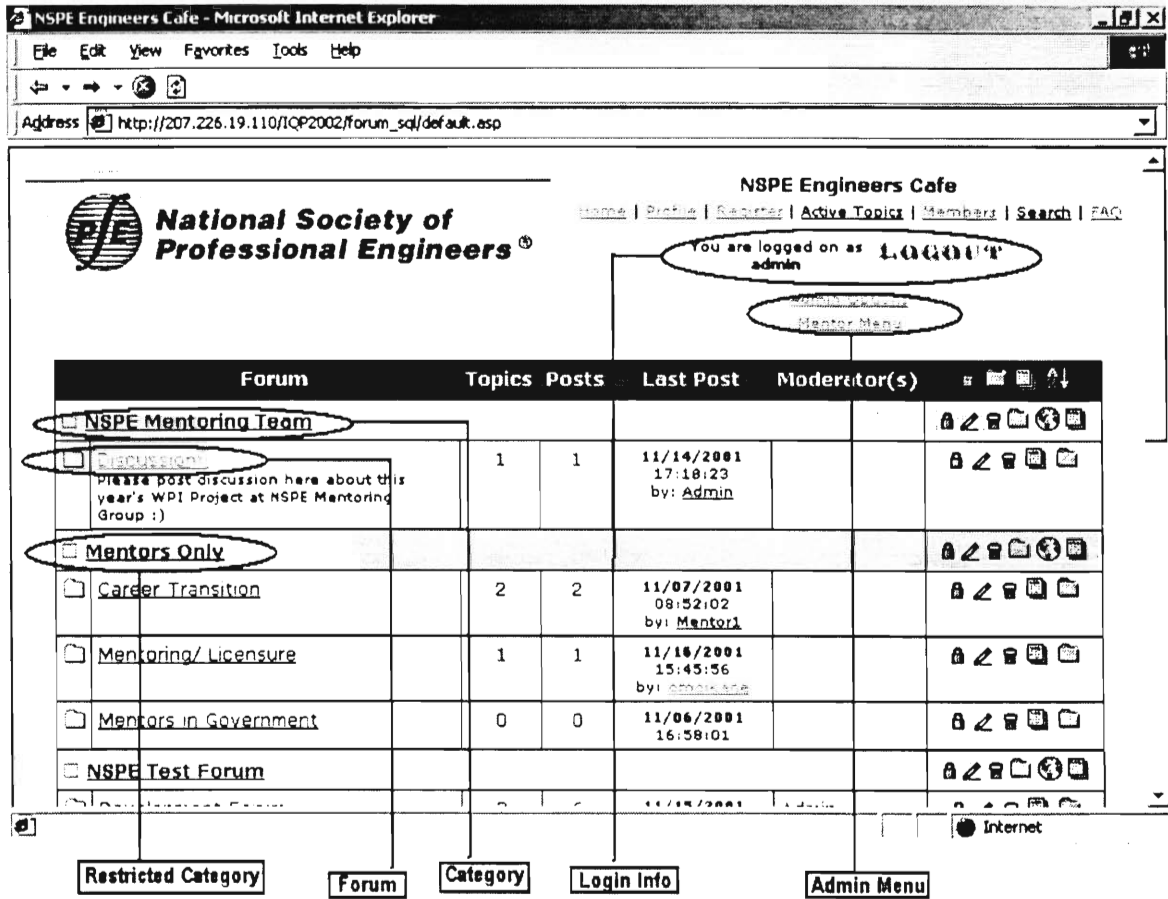
 - Lock: This icon will Lock an associated unlocked item

 - Unlock: This icon will unlock an associated locked item

 - Create New: This icon will create a new item within the associated item

 - Help: This icon will show an online documentation on what the associated item does.

6 POINTERS



NSPE Engineers Cafe
[Home](#) | [Profile](#) | [Register](#) | [Active Topics](#) | [Members](#) | [Search](#) | [FAQ](#)

You are logged on as **admin** **LOGOUT**

[NSPE Engineers Cafe](#)
[Member Menu](#)

Forum	Topics	Posts	Last Post	Moderator(s)
<input type="checkbox"/> NSPE Mentoring Team				
<input type="checkbox"/> Discussion Please post discussion here about this year's WPI Project at NSPE Mentoring Group :)	1	1	11/14/2001 17:18:23 by: Admin	
<input type="checkbox"/> Mentors Only				
<input type="checkbox"/> Career Transition	2	2	11/07/2001 08:52:02 by: Mentor1	
<input type="checkbox"/> Mentoring/ Licensure	1	1	11/16/2001 15:45:56 by: concrete	
<input type="checkbox"/> Mentors in Government	0	0	11/06/2001 16:58:01	
<input type="checkbox"/> NSPE Test Forum				
<input type="checkbox"/> NSPE Test Forum				

Labels below the table:
 Restricted Category (points to NSPE Mentoring Team)
 Forum (points to Discussion)
 Category (points to Mentors Only)
 Login Info (points to Last Post column)
 Admin Menu (points to Logout)

Figure 14 – Engineer's Cafe Admin Screen

7 CATEGORY

Here we talk about how the Administrator can create a new category. A good way to think about a category is a collection of forums. It is best to have as few categories as possible as this is the only distinction between the 4 Mentoring programs. The following are the recommended categories:

- 1) Licensure
- 2) Mentors in Government
- 3) Career Transition
- 4) Mentors Only
- 5) General

7.1 HOW TO CREATE A CATEGORY?

To create this category, click on the icon represented in Figure 15

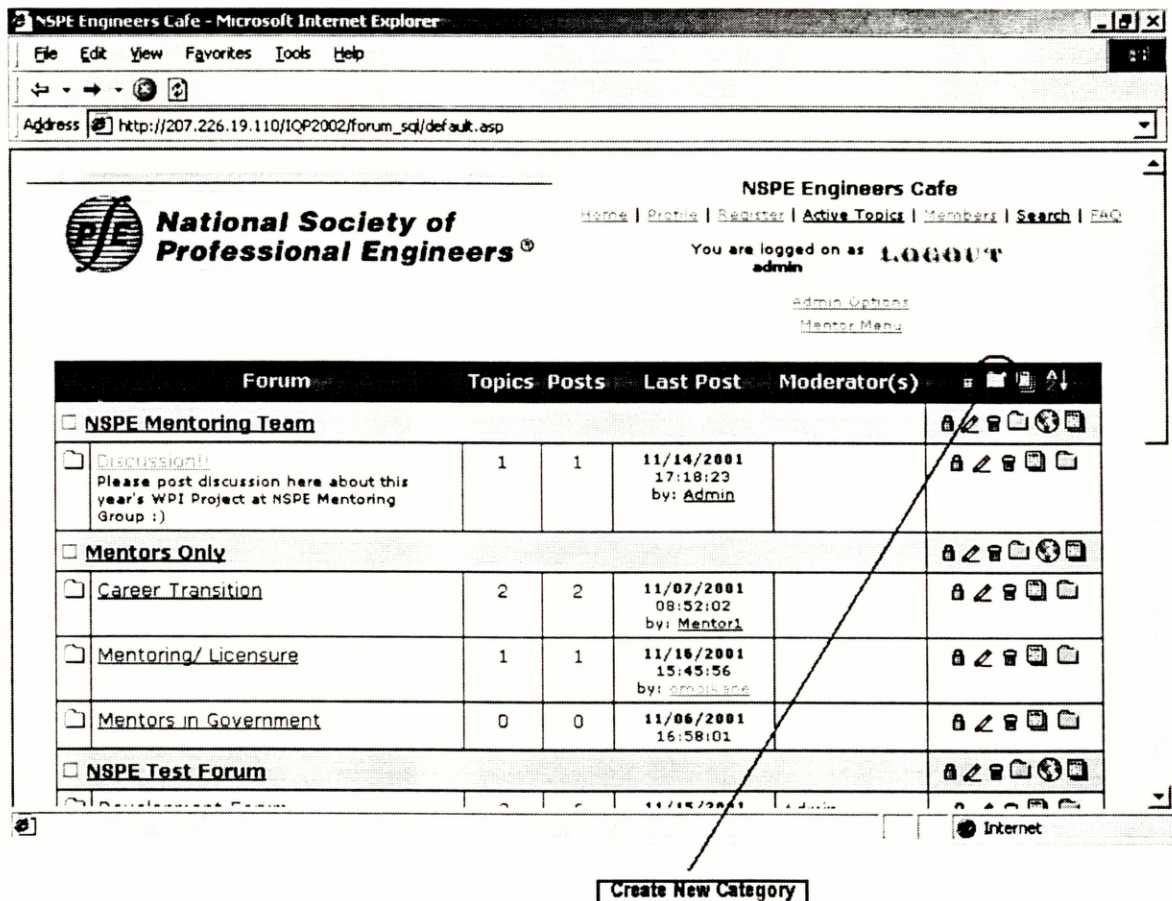


Figure 15 – Create New Category

Clicking on this icon will take you to the next screen shown in Figure 16. This screen includes details about Category name and moderation in this category. You can set members as **Moderators**. A moderator of a category is a person who is able to control individual forums. They may edit, delete or prune any posts in their forums.

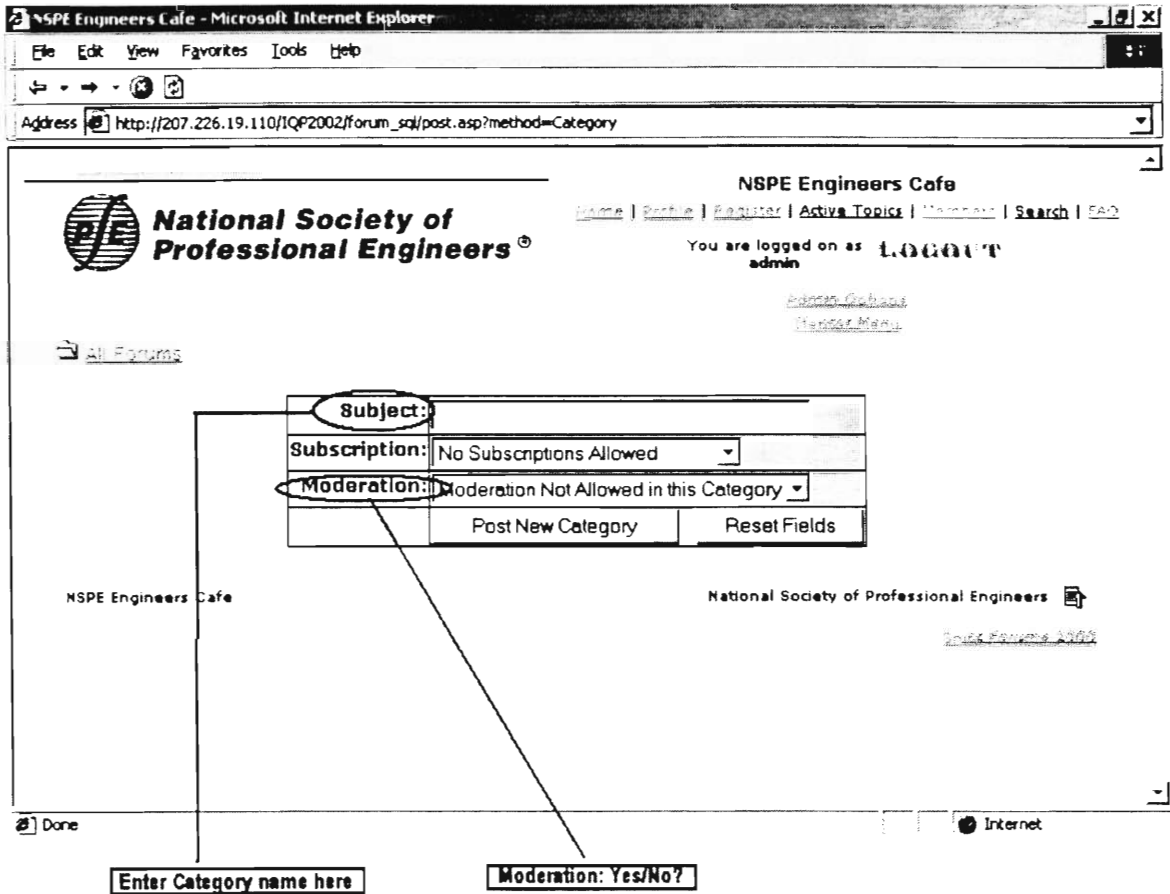


Figure 16 – Create Category Options

7.2 HOW TO EDIT A CATEGORY?

To edit an existing category, click on **All Forums** which is the icon on the top left corner of the screen which takes you to the listing of all the forums. You can only edit a category if you are logged on as **Admin**. To edit the “**Mentors Only**” category click on the icon shown as in Figure 17.

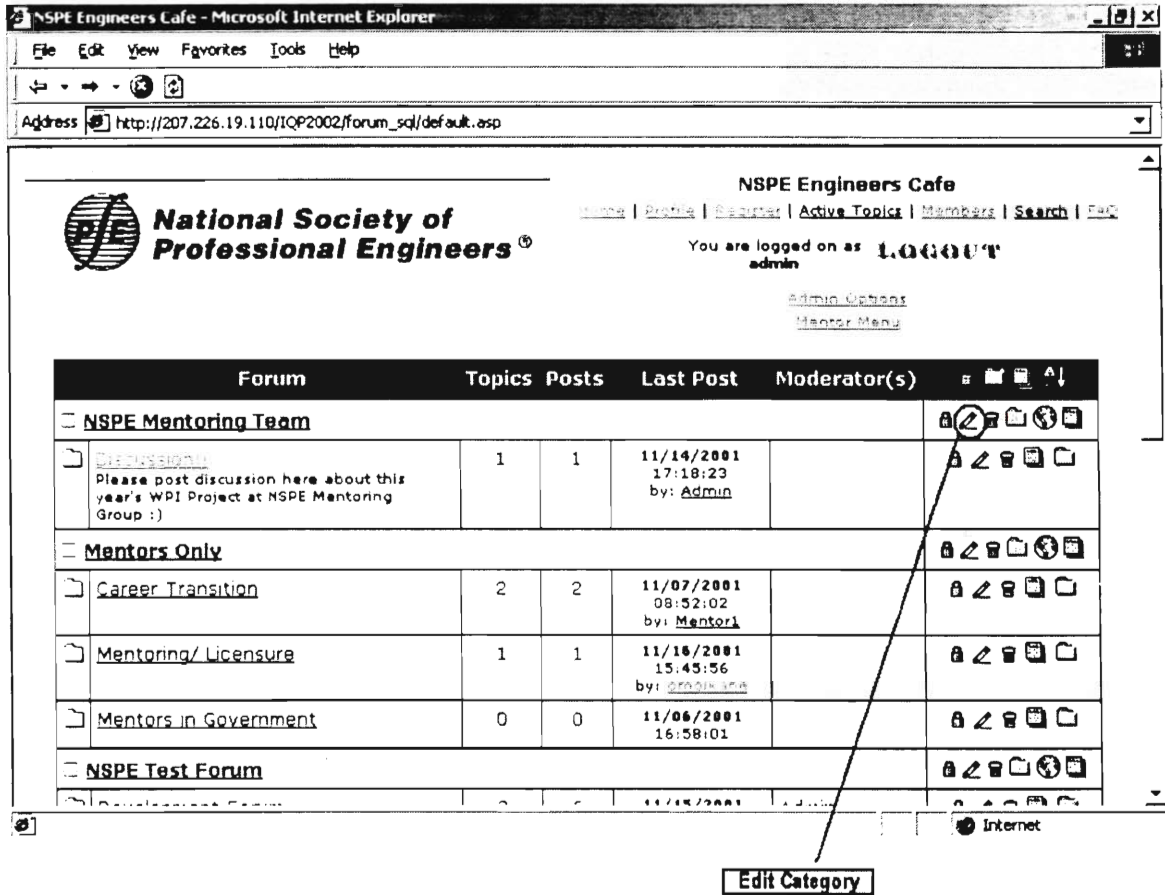


Figure 17 – Edit Category

Clicking on this icon will take you to a screen similar to Figure 16 where you can change the name of the Category, by changing the text in the Subject.

7.3 HOW TO CHANGE CATEGORY/FORUM ORDER?

You can change the order of the way the categories and forums are displayed, so that the important categories are displayed at the top of the page where it will be seen by the most users. It is advisable to not change the order frequently, as this could be disorienting to regular forum users.

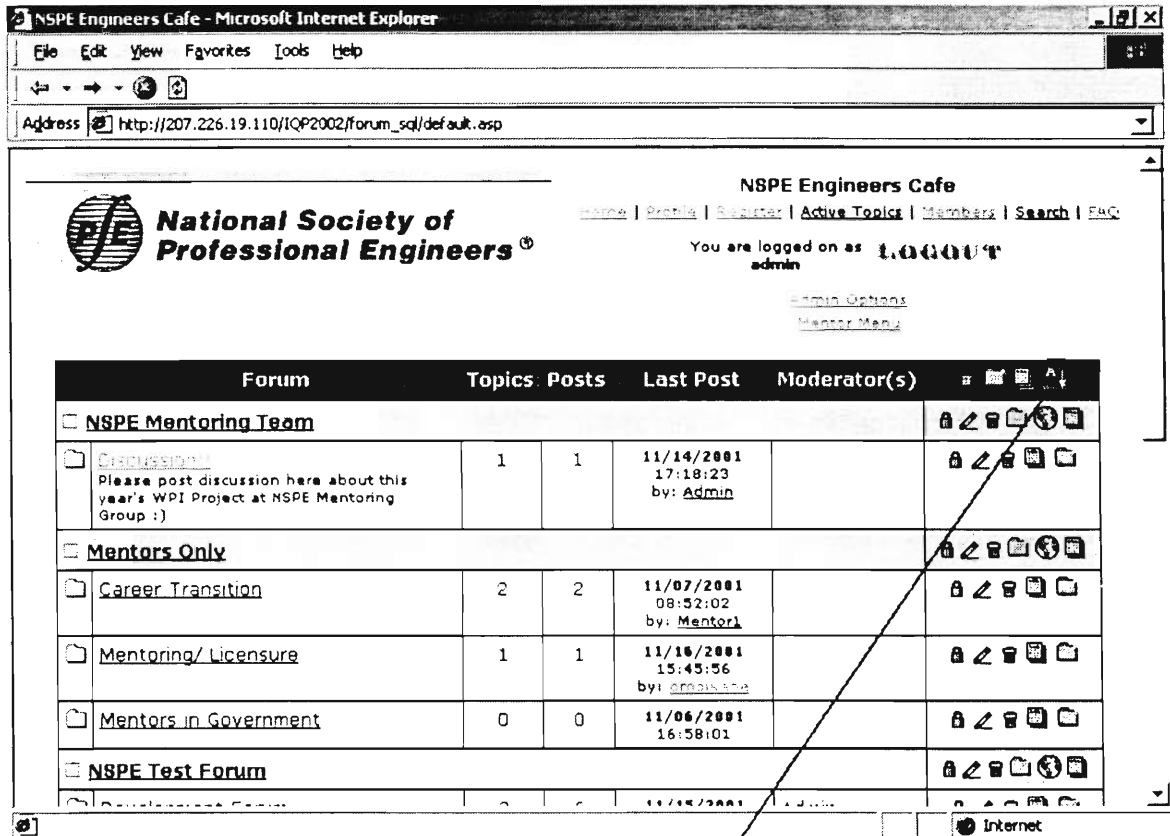


Figure 18 – Change Category/Forum Order

Clicking on the icon shown in Figure 18, will take you to a password screen. Here you will have to enter the admin password and press submit. Upon correct entry of the password, another screen will pop up which shows the numbers to rank the categories and the forums under each category. Figure 19 is an example.

NSPE Engineers Cafe - Microsoft Internet Explorer

Category/Forum	Order
NSPE Mentoring Team	1
Discussion!!	1
Mentors Only	2
Career Transition	1
Mentoring/ Licensure	2
Mentors in Government	3
NSPE Test Forum	3
Development Forum	1
Testing Forum	2
Career Transition	4
General	1
member only	1
Mentoring/ Licensure	5

This changes the order of the category

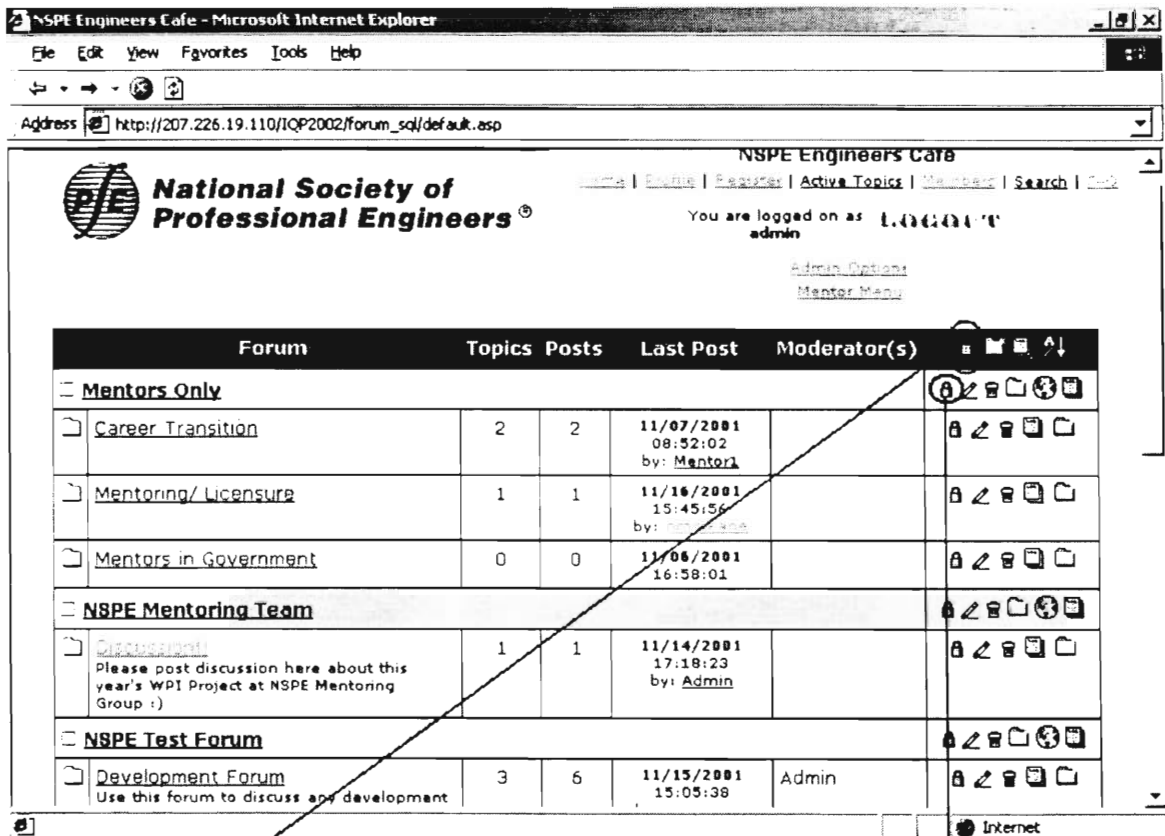
This changes the order of the forum in the 'NSPE Mentoring Team' category

Figure 19 – Order Change

7.4 HOW TO LOCK A CATEGORY?

Locking a category is similar to ‘Shutting Down’ a category. This renders the category and all the forums under it inaccessible to post by the users until it is ‘Unlocked’ again. You can lock a category by clicking on the icon showed in Figure 20. This takes you to a password screen where you have to enter the admin password and click on ‘Send’, which results in locking.

Locking a category is advisable if you want users to still look at the forums but not be able to post to that category. The Admin is able to post to that category. Locking a category is a good idea if you want to communicate information such as updates to the users. Moderators are however able to modify these locked categories.



This shuts (LOCKS) down all forums(EVERYTHING)

Locks all forums under 'Mentors Only' category

Figure 20 – How to Lock the ‘Mentors Only’ Category

7.5 HOW TO DELETE A CATEGORY?

Deleting a category will get rid of all the forums in this category. Users will not be able to see those categories, again nor will they be able to post to those

forums again. It is advisable to first Lock the category and then delete it at a later time. To delete a category follow Figure 21.

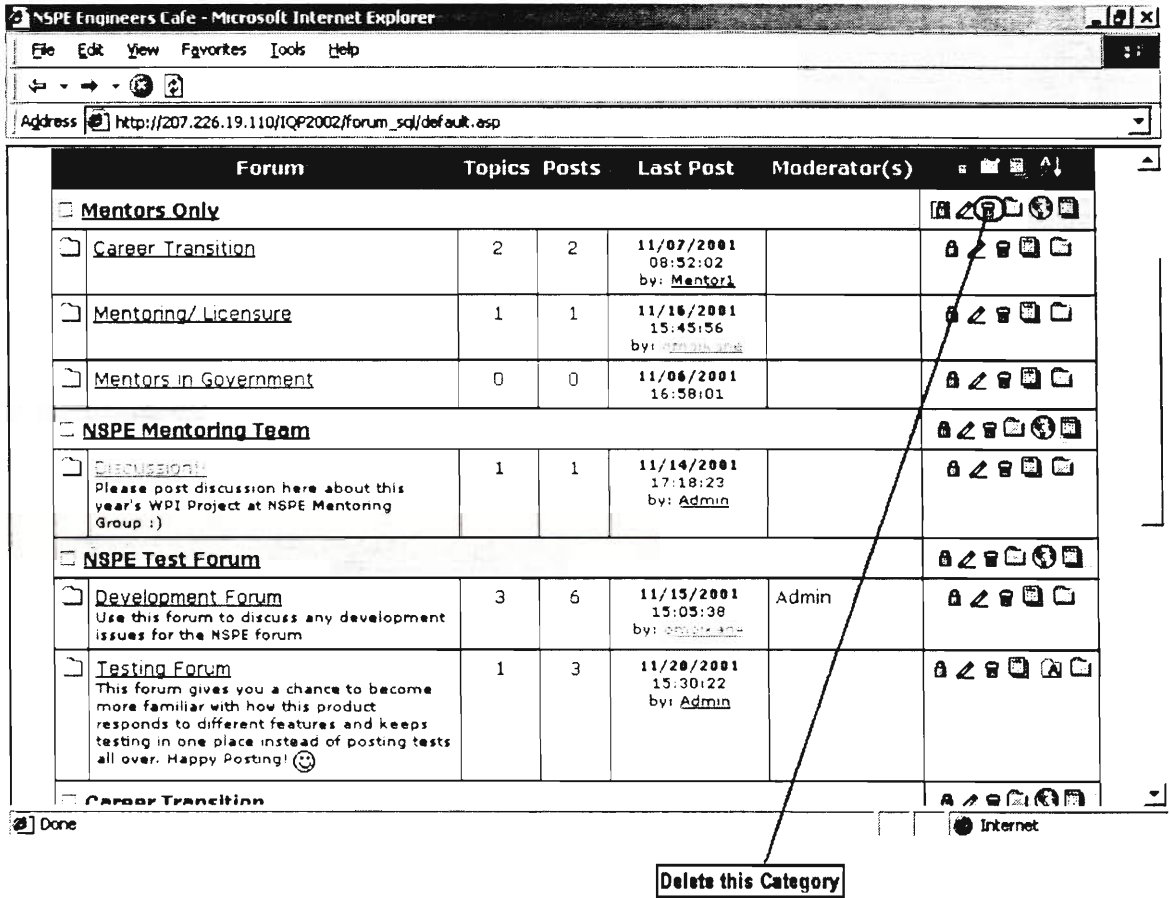


Figure 21 – Delete 'Mentors Only' Category

8 FORUM

Forums are the sections available under the Categories and changing these options are similar to changing the Category options.

8.1 HOW TO CREATE A NEW FORUM?

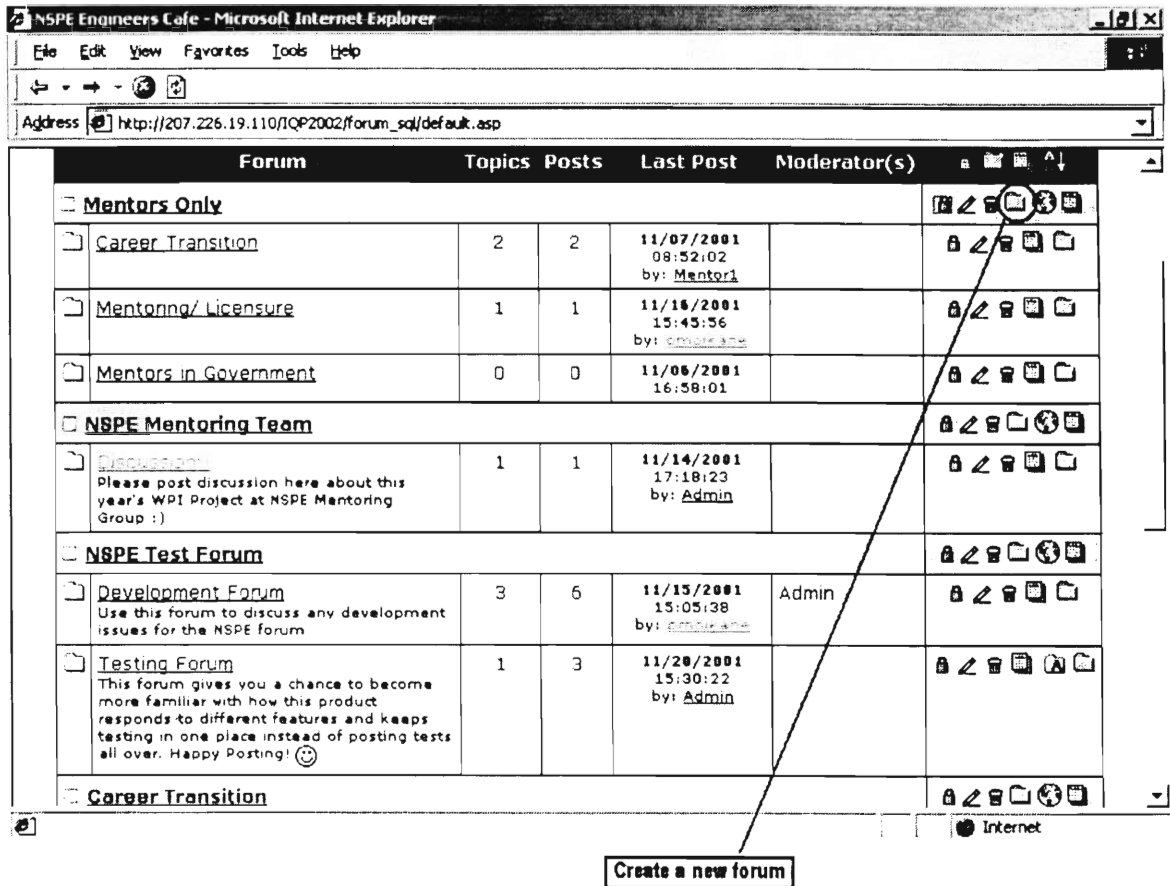


Figure 22 – Create a New Forum

Clicking on the purple icon as shown in Figure 22 will take you to a screen shown in Figure 23.

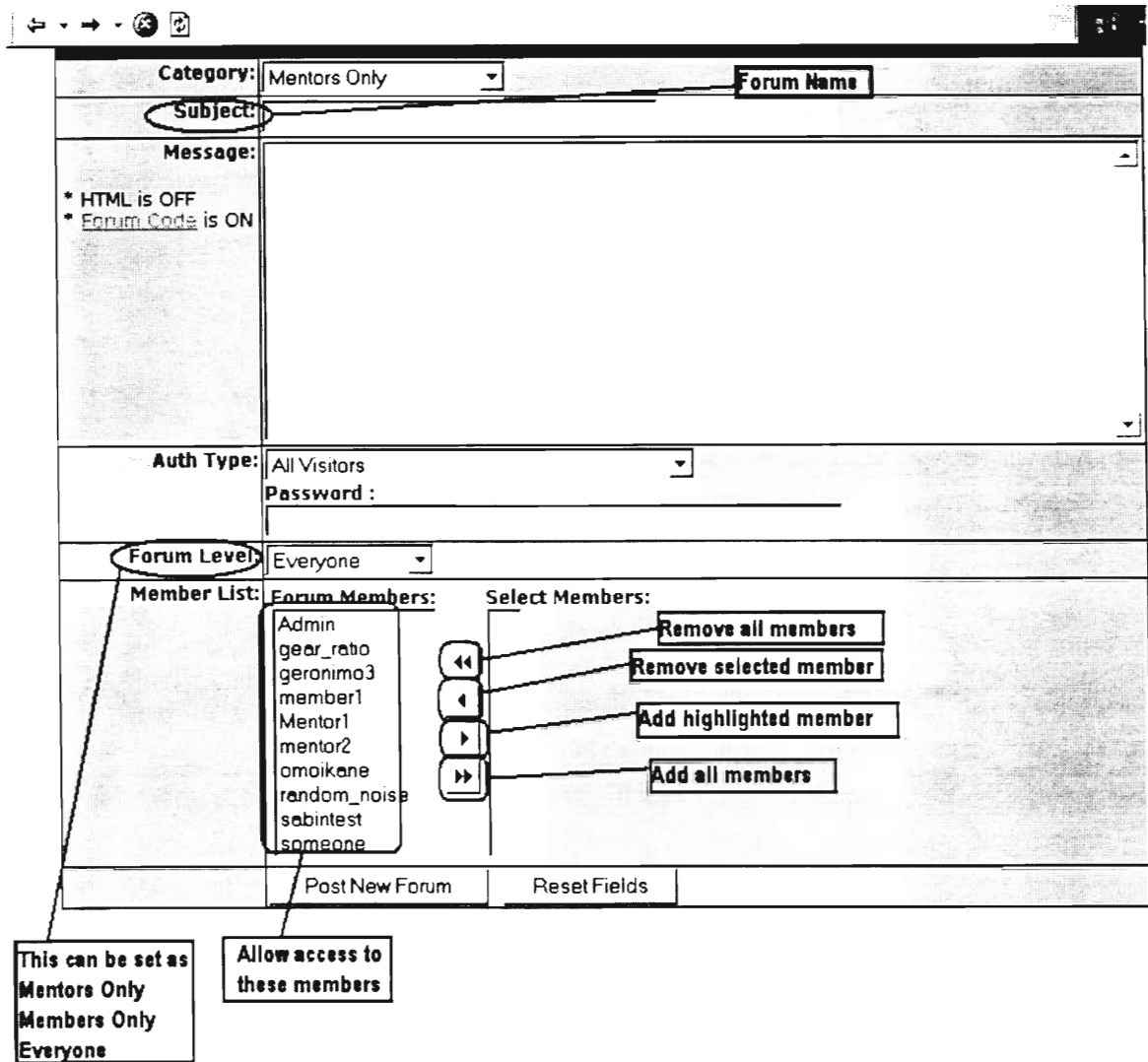


Figure 23 – Create Forum Options

An important option when creating a forum is the 'Forum Level'. Setting this option restricts access to only the specified classes of forum users(detailed below). The Forum Level has 3 options

1) Mentors Only

This restricts the forum to only those members who are logged on in the system as NSPE Mentors. The admin can see the people who are mentors by clicking on the 'Mentor Menu' link on the top right corner under the 'Admin Options' icon. These forums CANNOT be SEEN by those who are not NSPE mentors and is hidden in the main page.

2) Members Only

This restricts access to the forum to only NSPE members that have an NSPE membership ID.

3) Everyone

Here all members registered with the forum are allowed access to these forums.

The Member List shows all the members registered with the system.

Suppose you want to create a forum that is accessible to only the NSPE mentors, you would set the Forum Level to 'Mentors only'. Suppose you want to add 'gear_ratio' who is not an NSPE mentor but you want to grant him access to this forum. Just click on his name on the member list and then click on the 'Right Arrow' button. This moves 'gear_ratio' to the select members list. You can do this in a similar fashion for other members too. Once this is completed, click on the 'Post New Forum' button. If you go to the '*All Forums*' view, you will be able to see your new forum under the category that you created.

8.2 HOW TO EDIT A FORUM?

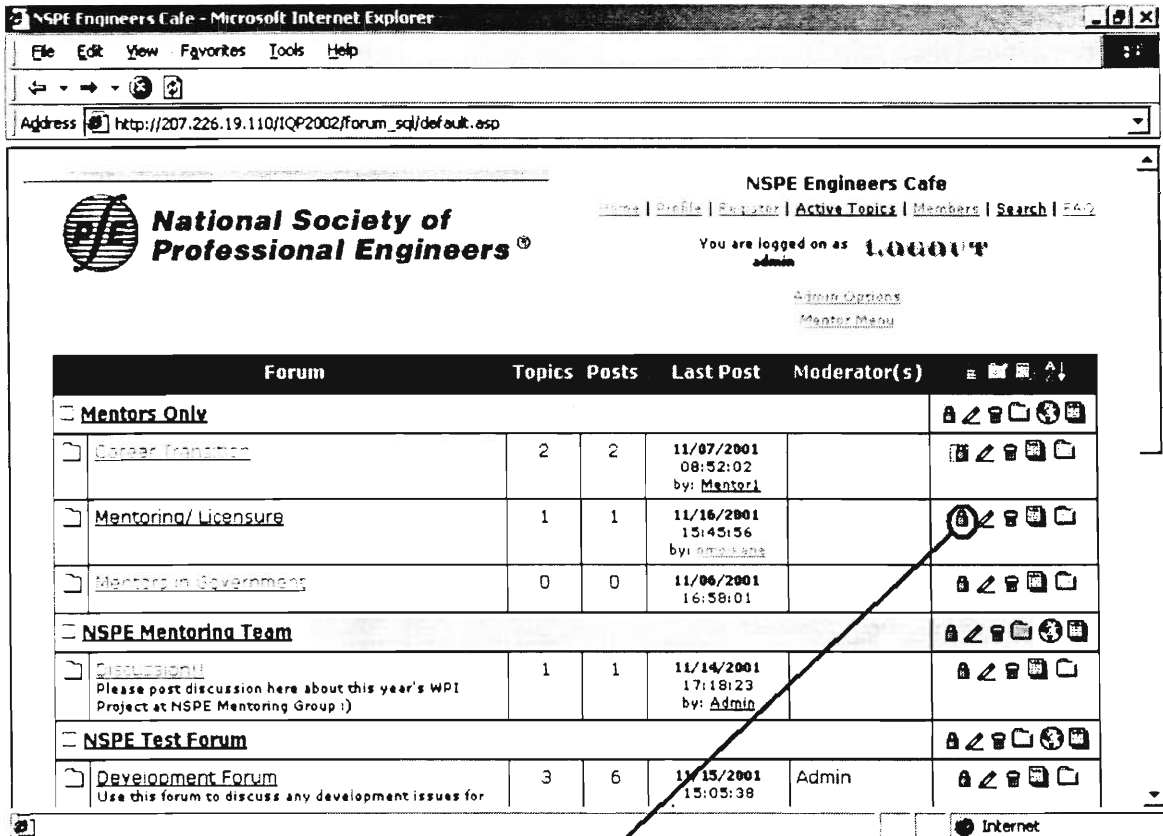
To edit a forum, simply click on the Pencil icon on the same line as the forum that you want to edit. This will take you to a screen similar to Figure 23, where you can change the Forum level, names, etc.

8.3 HOW TO CHANGE THE FORUM ORDER?

You can change the forum order using the exact same method as changing the category order. Refer to HOW TO CHANGE THE CATEGORY ORDER under CATEGORY Section 7.3.

8.4 HOW TO LOCK A FORUM?

Locking a forum carries the same meaning as locking a category, except that it is only the individual forum that is affected. Locking a forum refers to 'shutting down' a forum that renders it inaccessible (They cannot post topics or replies, they can only view). If you want to lock the *Mentoring/Licensure* forum under the '*Mentors Only*' category, for example, click on the icon shown in Figure 24.



This locks 'Mentoring/Licensure' forum

Figure 24 – How to Lock a forum?

Locking a forum makes this forum similar to a 'NEWS' feature, whereby, the admin and moderators can post things such as weekly updates to this forum. The other members can read but not post to this forum.

8.5 HOW TO DELETE A FORUM?

Deleting a forum is a simple process. It involves the clicking of the Trash Can icon on the line of the forum. Clicking on this icon will result in the opening of a window that asks for the entry of the admin user name and password. Clicking on the submit button will delete the forum and will then take you to a confirmation page.

8.6 HOW TO ARCHIVE A FORUM?

Archiving a forum is suggested for forums that have a heavy response rate (a large number of topics and/or replies). Archiving forums will keep them from

looking cluttered making it easier on the eyes. Forum users can click on archived topics and replies for a period of time determined by the Admin.

The archive option is only available to the Admin of the forum. Clicking on the *Admin options* link at the top right corner of the screen when logged on as Admin, takes you to Admin options as detailed in Figure 25.

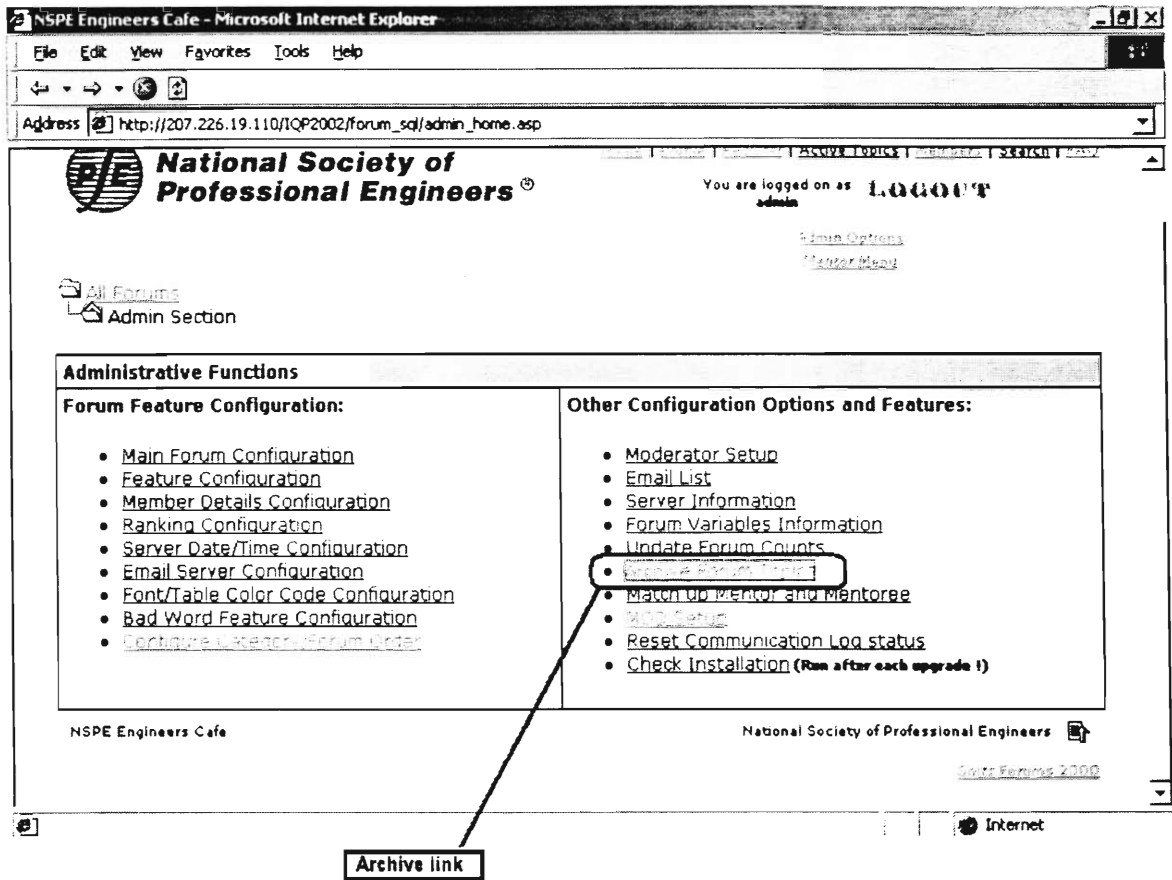


Figure 25 – Admin Options

Clicking on this link takes you to a screen which have the following options

- 1) Archive Topics from a Forum

This provides a means of archiving individual forum or you can archive all of the forums. The individual forums can be selected with a checkbox. You can archive topics that are older than 1,2,3 or 4 months or older than a year. Archiving topics older than a month will ensure that only topics that have been posted a month ago will be in



the forums.

2) Delete Archived Topics

Deleting old unused forums is a good way to clean up memory space.

9 MEMBER ADMINISTRATION

This section will explain how the administrator can edit / manage the users in the Engineers Café program.

9.1 HOW TO CHANGE USER PROFILE/STATUS?

This is a very powerful feature of the Engineers Café. This feature enables you, the admin, to mark a user of the forum as an NSPE mentor. To be able to use this feature you must click on the 'Members' link on the top right corner of the screen as outlined in Figure 26.

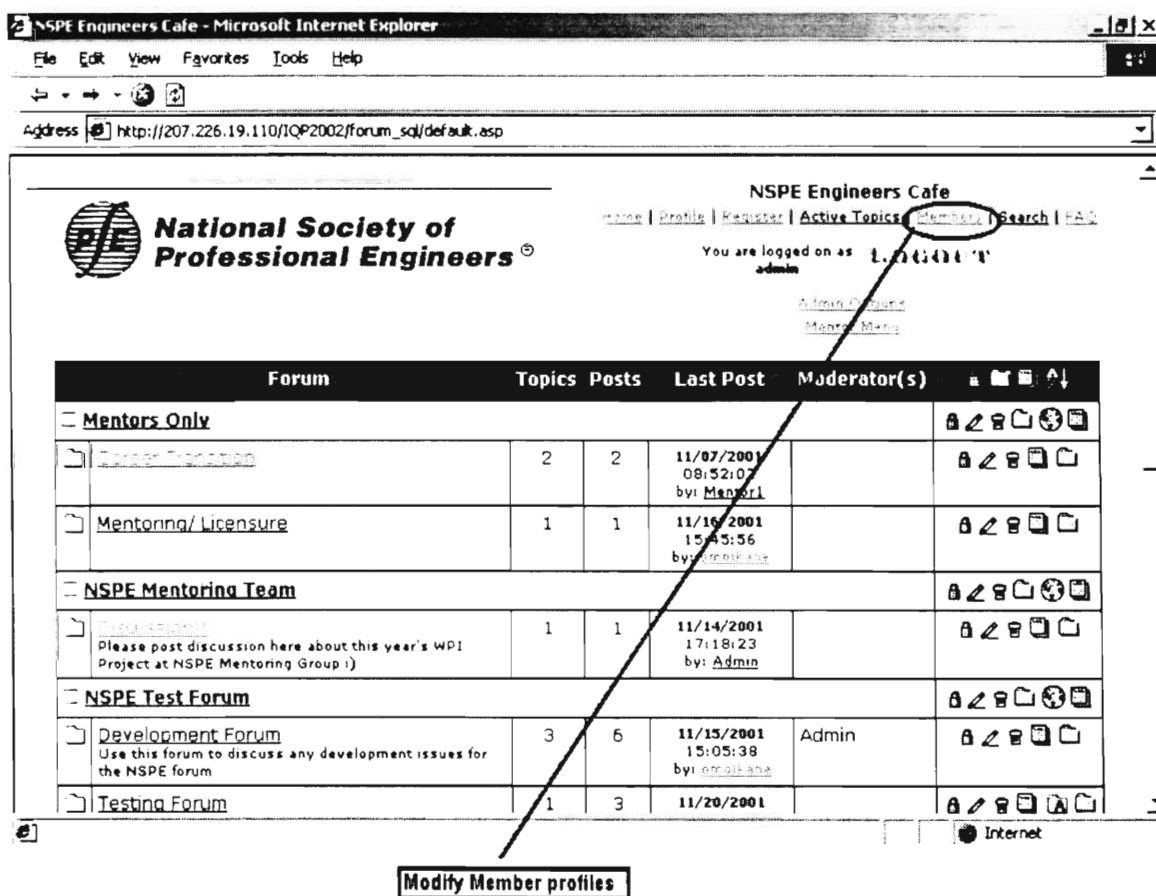


Figure 26 – Modify Member Profile

Clicking on the members link takes you to a page which lists all the members registered with the system. To modify a member profile, simply click on the EDIT icon (in the form of a pencil) for that member. This will bring up a page like that in Figure 27. Note the bottom right of the page that has the dropdown box for 'Member Status'. It is here that you can change an NSPE

member to an NSPE mentor, or change an existing NSPE mentor to an NSPE member.

If a non-member has to be changed into a member then the NSPE membership number must be entered into the system to validate him/her.

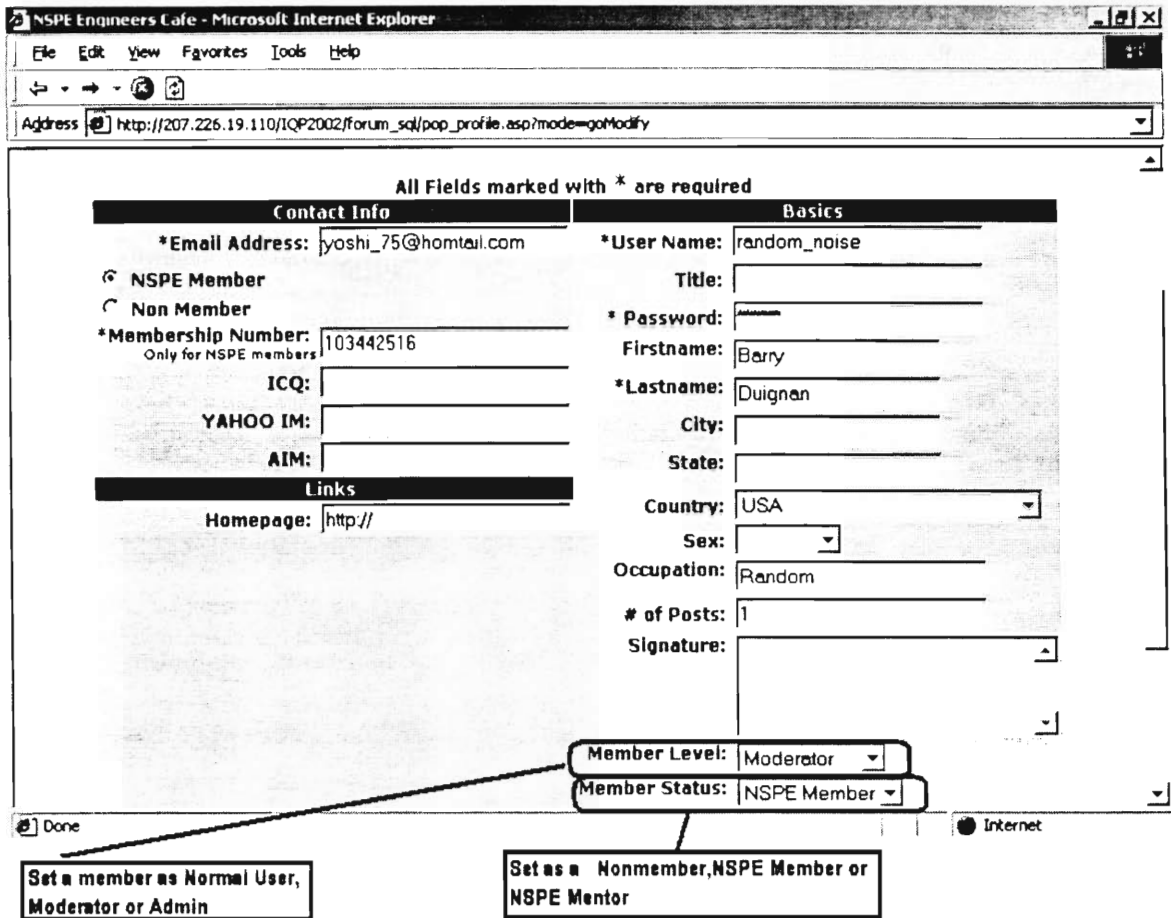


Figure 27 – Change User Status

The most important thing to remember here is that the radio buttons indicating NSPE membership on the left have a higher priority than the 'Member Status' dropdown box. Remember to always check whether the NSPE membership number has been filled out before changing from a nonmember to an NSPE member.

9.2 HOW TO CREATE A MODERATOR?

A moderator is someone who can edit/delete topics within a forum. The admin can make someone a moderator by changing the 'Member Level' field in

his/her user status/profile from a normal user to a Moderator.

9.3 HOW TO ASSIGN A MODERATOR TO A FORUM?

To assign a moderator to a forum, click on *Admin Options* link that appears on the top right corner of the screen. Click on **Moderator Setup**. This takes you to the list of all forums. Click on the forum that you would like a moderator for. This will take you to a page that lists all the moderators in the system. The moderators that have been assigned to this forum are **bolded**. Select the moderator you would like to assign by simply clicking on his name. This will follow with details about whether he/she has been assigned to this forum in the past and whether or not he/she is a moderator.

10 ADMINISTRATOR OPTIONS

This section will explain the functions that are specific to the Administrators and the items that are not discussed in the sections above. The Engineers Café setup and configurations are all explained in sections 3 and 4.

10.1 HOW TO SETUP USER TO BE A MENTOR

The Engineers' Café will have no way of knowing whether a User in the system is a Mentor or not unless the Users are assigned as Mentors in the system. This should be done whenever a new mentor applies to become a mentor at NSPE. The instruction on how to assign a mentor is discussed in section 8.1.

10.2 HOW TO MATCH UP / SPLIT A MENTOR AND A MENTOREE

The Engineers Café needs to be notified of any Mentor / Mentoree match-ups and split-ups that occur in order to start or stop collecting Communication logs from the mentors. This should be done whenever an NSPE member requests a mentor.

10.3 HOW TO RESET MENTOR / MENTOREE COMMUNICATION LOG STATUS

Mentor / Mentoree Communication Log Status is a status “flag”. This flag indicates if a mentor needs to fill out a communication log for a certain mentoree or not. This Reset should be done every month to remind the mentors to fill in the monthly Communication log for all his / her mentorees. When the Status is reset, all the mentors will be notified that they must fill in the Mentor / Mentoree Communication log for the month in the Engineers' Café page. The notification will remain present on the home page until the mentor has entered a log for all of his / her mentorees.

The Reset can be found in the Administrative functions page (Figure 6) on the right column of menus as a link called “Reset Communication Log Status.” One click to this link will reset the status, though there is no confirmation page. Assume that the reset has been successfully applied when it returns to the Administrative Functions page.

10.4 HOW TO EVALUATE ENGINEERS' CAFÉ TRAFFIC

This is a feature where the administrator can obtain a statistical report on the activity of different user types (general public, NSPE member or Mentor) in different Categories. This page is called the Key Indicator Evaluation Page. To get to the report, click on the Update Forum Counts link in the Administrative Functions page (Figure 6). This will bring a page with the table in Figure 28.

Key Indicator Evaluation Page	
Total Topics:	6
Archived Topics:	0
Total Posts:	14
Total Archived Posts:	0
Total Topics Replies:	8
Registered Users:	10
Mentor Topic Count	
Category:Engineers' Cafe	1
Category:PE Licensure	1
Mentor Reply Count	
Category:Engineers' Cafe	1
Nonmember Topic Count	
Category:Engineers' Cafe	2
Nonmember Reply Count	
Category:Career Transition	1
Category:Engineers' Cafe	4
NSPE member topic count	
Category:Career Transition	1
Category:Engineers' Cafe	1
NSPE member reply count	
Category:Career Transition	2

Figure 28 – Key Indicator Evaluation Page

The top section displays the summary of the Engineers Café activity.

- Total Topics – Total number of topics that are not archived.
- Archived Topics – Total number of archived topics
- Total Posts – Total number of posts (includes the first post in the topics as well as all the replies) that are not archived

- Total Archived Posts – Total number of archived posts (also include replies and first post in all topics)
- Total Topics Replies – Total number of replies that are not archived.
- Registered Users – Total number of registered users in the system.

All of the sections below are more specific counts for different member types. Member Types include:

- Mentor – All of the Mentors in the Engineers' Café system
- NSPE Member – All of the users who are registered as NSPE members using their NSPE membership ID number
- Nonmember – All the other members including the admin

For all three different user types, there are two sections. The topic count is the total number of topics that these members started in any forum in each category, and the reply count is the total number of replies that these members posted in any forum in each category.

Each section reports the number for each of the categories to see the users interests and activity of each category.

11 MENTOR MENU OPTIONS

This section explains the Engineers' Café's NSPE Mentoring program specific feature. The "How-to"s on setting up mentors and matching them up with mentorees as well as maintenance of the mentor / mentoree communication logs are explained.

11.1 HOW TO VIEW MENTOR LIST

The option to view the list of mentors registered in the system is only available to the administrators. The administrators will have a link for the "Mentor Menu" just below the "Admin Options" menu at the top right corner of the page as shown in Figure 29.

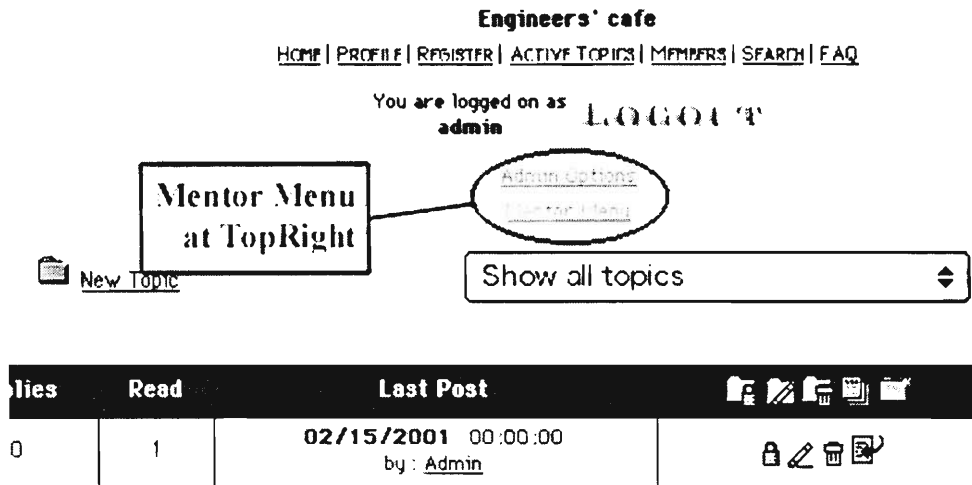


Figure 29 – Mentor Menu Location

Follow the link "Mentor Menu" and you will be taken to the list of mentor page as shown in Figure 30. The list consists of their User Name at the Engineers' Café and their real names.

List of Mentors		
User Name	First Name	Last Name
mentor_1	Barry	Duignan
jgrau	Jennifer	Gray
Main Forum		

Figure 30 – List of Mentors

11.2 HOW TO VIEW MENTOREE / LOG LIST

To view the list of mentorees, the Admin can click on the Mentor User Names link in Figure 30. Mentors can follow the “Mentor Menu” link in Figure 29. Mentors will see the “Mentor Menu” link and not the “Admin Options.” Figure 31 shows the admin view of the Mentoree List page. The only difference with the Mentor’s view of the same page is that the Table title will be “List of Your Mentorees” and not mention their user name.

List of jgray’s Mentorees		
User Name	First Name	Last Name
<u>jengrau</u>	Jennifer	Gray
<u>jerry</u>	Erin	Garcia
<u>Main Forum</u>		

Figure 31 – Mentoree List

From this page, the viewer can follow the User Name link to obtain the list of the Mentoree’s Communication Logs shown in Figure 32.

Logs for jerry		
Log ID	Month	Year
<u>4</u>	11	2001
<u>5</u>	10	2001
<u>Main Forum</u>		

Figure 32 – Communication Log List

11.3 HOW TO VIEW THE COMMUNICATION LOG

To view a particular communication log, the user can click on the Log ID text in Figure 32. The communication log will be displayed in a new window as shown in Figure 33.

Mentor Mentoree Communication Log			
Log ID:	5		
Mentor:	Mentoree:	Month:	Year:
jgray	jerry	10	2001
Number of Communication:			10 to 15 times
Means of Communication Used:			
e-mail phone Direct Meeting NSPE Web Forum			
Preferred Means of Communication:			email
Comments:			
This field is for comments. Any text can be entered. The "Bad Word Feature" is not effective here. Implementing such feature may be a good idea.			

[Close Window](#)

Figure 33 – Communication Log View

Each of the Logs will be viewable only if the user is an Administrator or if the user is the person who has filled this log out.

11.4 HOW TO ENTER MENTOR / MENTOREE COMMUNICATION LOG

The mentors can enter a new Communication Log by following the link visible in their "Mentoree List" page or the "Communication Log List." The link is shown in Figure 34.

List of your Mentorees		
User Name	First Name	Last Name
jengray	Jennifer	Gray
jerry	Erin	Garcia
Main Forum Mentor/Mentoree Communication Log		

Link to Enter Communication Log

Figure 34 – Communication Log Link

By following the link, the mentor will be taken to the Communication Log page where he/she can enter a communication log for his / her mentoree. The Communication Log page is shown in Figure 35.

Mentor/Mentee Communication Log

Log of communication with: Select a Mentoree ▾ List of the User's Mentorees

Select month and year to report: Select Month ▾ 2001 ▾

Number of times Communicated this month: None ▾ Multiple Choice for Communication Frequency

Means of Communication used (check any that apply):

e-mail
 Postal mail
 Phone
 Direct meeting
 NSPE Web forum

All of the communication methods used

Frequent Means of Communication (Choose one most frequently used method):

e-mail
 Postal mail
 Phone
 Direct meeting
 NSPE Web forum

The most preferred method

Comments:
(How is this Mentor/Mentoree relation going. Any requests to Program organizers)

Submit Reset

Figure 35 – Mentor / Mentoree Communication Log Form

12 USER OPTIONS

The following explanations are directed towards new members of this forum, and do not apply to those with Admin privileges.

12.1 HOW TO REGISTER AS A NEW MEMBER?

If you are new to this forum, you will have to click on the 'Register' link on the top right part of the screen as indicated in Figure 36.

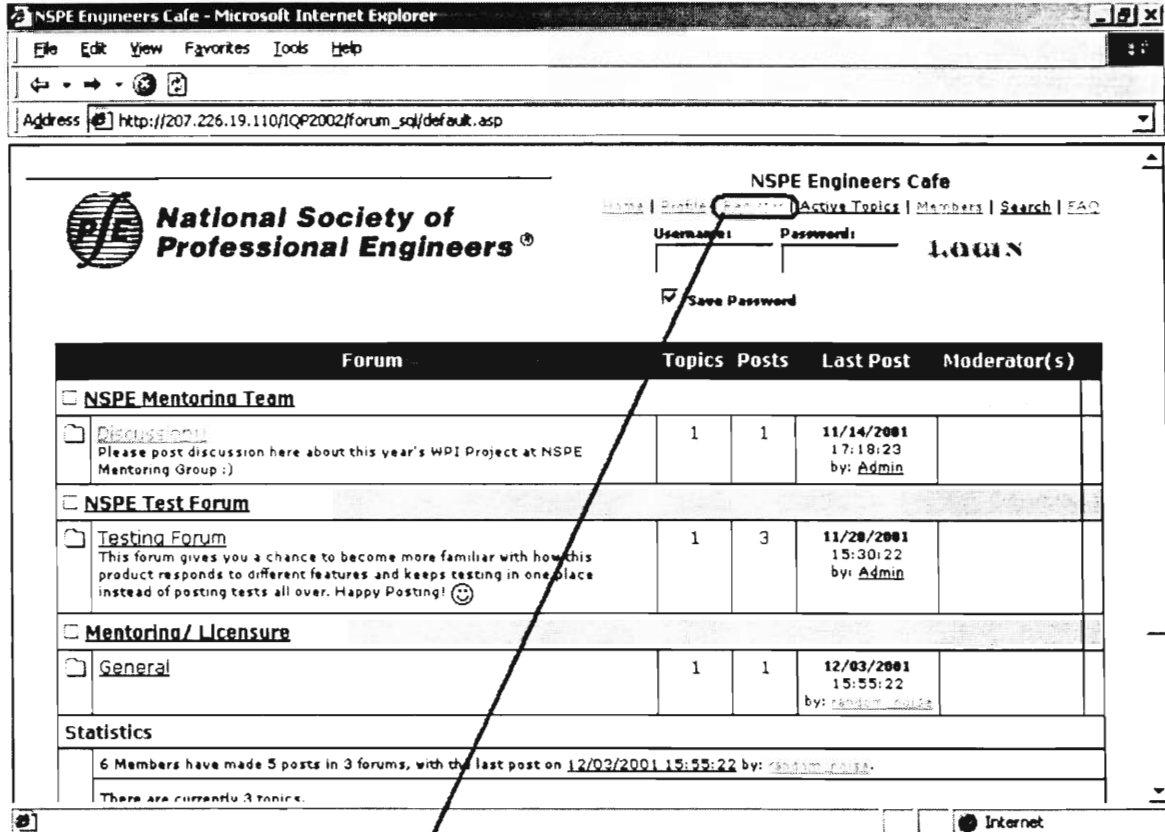


Figure 36 – New member!

Clicking on this link will take you to a Registration Rules and Policies Agreement page which withholds liability from the NSPE. Upon clicking on the Agree button, you will be taken to a profile page where you enter information about yourself. The fields that are marked in red are required fields.

All Fields marked with * are required

Contact Info	Basics
*Email Address:	*User Name:
<input type="radio"/> NSPE Member <input type="radio"/> Non Member	* Password:
*Membership Number: <small>Only for NSPE members</small>	* Password Again:
ICQ:	Firstname:
YAHOO IM:	*Lastname:
AIM:	City:
Links	State:
Homepage:	Country:
	Sex:
	Occupation:
	Signature:

Done Internet

[Back To Forum](#)

Indicate here if you are a Member or a Nonmember

Must include NSPE Membership # if you wish to register as a member

Figure 37 – Member profile page

Upon proper completion of each field, you will be taken to a confirmation page that indicates whether you were successful or not in registering as a new member. If you were not successful, an error page will detail each of the errors. If you are still not able to register even after correcting these errors, then email the administrator email address to ask for you to be registered.

12.2 HOW TO LOGIN AS A MEMBER?

If you have registered with the system and have your username and password, all you have to do is to enter your username and password on the top right corner of the screen into the textboxes and then click on the LOGIN button.

If you were to forget your password, then you should click on the FAQ link that is on the top right corner of the screen, and search for the option that says – ‘Cant find your question? Email us’. This will enable your default mail client to open up whereby you can email the administrator of the forum to change your password.

12.3 HOW TO POST A TOPIC/REPLY?

To post a topic or a reply, you must be logged on the system. First go to the *All Forums* view, from here, select the forum that you want to post to by clicking on the forum name. At this point, you will be able to see all the topics within that particular forum. In this view you can post a new topic, as per Figure

38

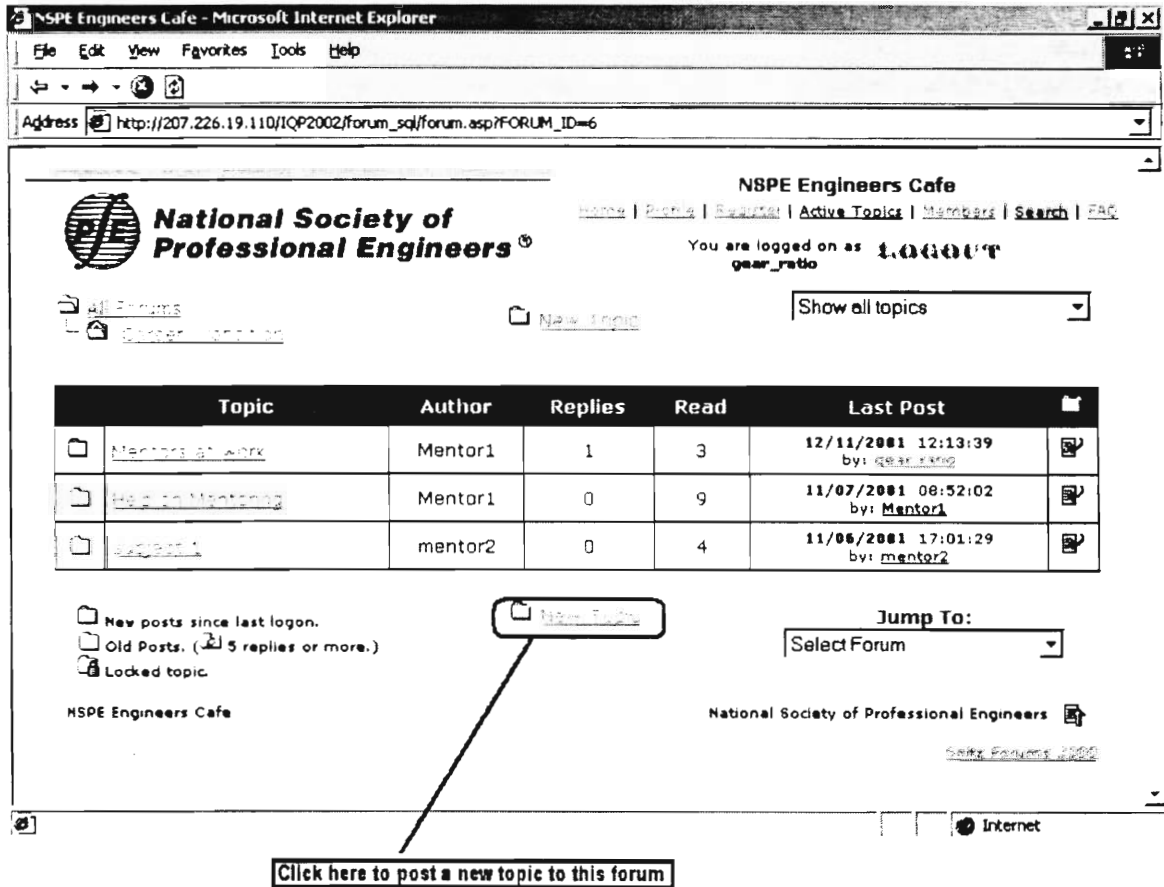




Figure 38 – Post new topic

Clicking on New Topic will take you to the screen as shown in Figure 39.



- All Forums
- Career Transition

Screen size:	640 x 480
Format:	
	Times New Roman 3 Black
Subject:	<input type="text"/>
Message:	<div style="border: 1px solid black; padding: 5px;"><ul style="list-style-type: none">• HTML is OFF• Format Code is ON</div>
Mode:	Basic
	<input checked="" type="checkbox"/> Check here to include your profile signature.
<input type="button" value="Post New Topic"/> <input type="button" value="Preview"/> <input type="button" value="Reset Fields"/>	

NSPE Engineers Cafe National Society of Professional Engineers 

[Some Forums 2000](#)

Figure 39 – Post a new Topic Options

Replying to a topic is a similar process. Enter the topic that you would like to reply to, and the same screen as Figure 39 opens up, where you can customize your reply.

12.4 HOW TO EDIT YOUR USER PROFILE?

If at any time you were registered as a nonmember and have become a member of the NSPE, you will have to modify your user profile so that you can have access to the members only forum. To do this click on the 'Profile' on the top right corner of the screen. Clicking on the screen, will take you to a screen similar to Figure 37. Here you would click on the NSPE member button and then enter your NSPE membership number. Other membership details can also be changed this way.

APPENDIX A

Following is the SQL statements defining the entire Forum database.

Comments will be entered in C commenting style.

```
CREATE TABLE [FORUM_A_REPLY] (  
    [CAT_ID] [int] NOT NULL ,  
    [FORUM_ID] [int] NOT NULL ,  
    [TOPIC_ID] [int] NOT NULL ,  
    [REPLY_ID] [int] NOT NULL ,  
    [R_STATUS] [smallint] NULL ,  
    [R_MAIL] [smallint] NULL ,  
    [R_AUTHOR] [int] NULL ,  
    [R_MESSAGE] [text],  
    [R_DATE] [varchar] (50) NULL ,  
    [R_IP] [varchar] (50) NULL  
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]  
GO
```

```
CREATE TABLE [FORUM_A_TOPICS] (  
    [CAT_ID] [int] NOT NULL ,  
    [FORUM_ID] [int] NOT NULL ,  
    [TOPIC_ID] [int] NOT NULL ,  
    [T_STATUS] [smallint] NULL ,  
    [T_MAIL] [smallint] NULL ,  
    [T_SUBJECT] [varchar] (100) NULL ,  
    [T_MESSAGE] [text] NULL ,  
    [T_AUTHOR] [int] NULL ,  
    [T_REPLIES] [int] NULL ,  
    [T_VIEW_COUNT] [int] NULL ,  
    [T_LAST_POST] [varchar] (50) NULL ,  
    [T_DATE] [varchar] (50) NULL ,  
    [T_LAST_POSTER] [int] NULL ,  
    [T_IP] [varchar] (50) NULL ,  
    [T_LAST_POST_AUTHOR] [int] NULL  
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]  
GO
```

```
CREATE TABLE [FORUM_ALLOWED_MEMBERS] (  
    [MEMBER_ID] [int] NOT NULL ,  
    [FORUM_ID] [int] NOT NULL ,  
    CONSTRAINT [FORUM_SnitzC373] PRIMARY KEY NONCLUSTERED  
    (  
        [MEMBER_ID],  
        [FORUM_ID]  
    ) ON [PRIMARY]  
) ON [PRIMARY]  
GO
```

```
CREATE TABLE [FORUM_CATEGORY] (  

```

```

        [CAT_ID] [int] IDENTITY (1, 1) NOT NULL ,
        [CAT_STATUS] [smallint] NULL CONSTRAINT
[FORUM_SnitzC1] DEFAULT (1),
        [CAT_NAME] [nvarchar] (100) NULL ,
        [CAT_MODERATION] [int] NULL CONSTRAINT
[FORUM_SnitzC1020] DEFAULT (0),
        [CAT_SUBSCRIPTION] [int] NULL CONSTRAINT
[FORUM_SnitzC1021] DEFAULT (0),
        [CAT_ORDER] [int] NULL CONSTRAINT [FORUM_SnitzC1022]
DEFAULT (1),
        CONSTRAINT [FORUM_SnitzC2] PRIMARY KEY NONCLUSTERED
(
            [CAT_ID]
        ) ON [PRIMARY]
) ON [PRIMARY]
GO

```

```

CREATE TABLE [FORUM_COMMUNICATION_LOG] (
    [Log_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [Mentor_ID] [int] NULL ,
    [Mentoree_ID] [int] NULL ,
    [CLOG_MONTH] [smallint] NOT NULL ,
    [CLOG_YEAR] [smallint] NOT NULL ,
    [CLOG_NUM_COMMUNICATE] [text] NULL ,
    [CLOG_USED_EMAIL] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0003] DEFAULT (0),
    [CLOG_USED_POSTAL] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0004] DEFAULT (0),
    [CLOG_USED_PHONE] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0005] DEFAULT (0),
    [CLOG_USED_MEET] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0006] DEFAULT (0),
    [CLOG_USED_WEB] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0007] DEFAULT (0),
    [CLOG_PREFER] [text] NULL ,
    [CLOG_COMMENT] [nvarchar] (255) NOT NULL CONSTRAINT
[FORUM_SnitzECC0008] DEFAULT (''),
    CONSTRAINT [FORUM_SnitzECC0009] PRIMARY KEY CLUSTERED
(
        [Log_ID]
    ) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

```

```

/*
COMMUNICATION_LOG table is added to store all of the Mentor /
Mentoree Communication log results. Mentor_ID and Mentoree_ID
refer to the Member_ID stored in the MEMBERS table.
*/

```

```

CREATE TABLE [FORUM_CONFIG_NEW] (

```

```

        [ID] [int] IDENTITY (1, 1) NOT NULL ,
        [C_VARIABLE] [nvarchar] (255) NULL ,
        [C_VALUE] [nvarchar] (255) NULL ,
        CONSTRAINT [FORUM_SnitzC38] PRIMARY KEY NONCLUSTERED
    (
        [ID]
    ) ON [PRIMARY]
) ON [PRIMARY]
GO

CREATE TABLE [FORUM_FORUM] (
    [CAT_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC39]
DEFAULT (0),
    [FORUM_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [F_STATUS] [smallint] NULL CONSTRAINT [FORUM_SnitzC40]
DEFAULT (1),
    [F_MAIL] [smallint] NULL CONSTRAINT [FORUM_SnitzC41]
DEFAULT (0),
    [F_SUBJECT] [nvarchar] (100) NULL ,
    [F_URL] [nvarchar] (255) NULL ,
    [F_DESCRIPTION] [nvarchar] (255) NULL ,
    [F_TOPICS] [int] NULL CONSTRAINT [FORUM_SnitzC42]
DEFAULT (0),
    [F_COUNT] [int] NULL CONSTRAINT [FORUM_SnitzC43]
DEFAULT (0),
    [F_LAST_POST] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC44] DEFAULT (''),
    [F_PASSWORD_NEW] [nvarchar] (255) NULL ,
    [F_USERLIST] [nvarchar] (255) NULL ,
    [F_PRIVATEFORUMS] [int] NULL CONSTRAINT
[FORUM_SnitzC45] DEFAULT (0),
    [F_TYPE] [smallint] NULL CONSTRAINT [FORUM_SnitzC46]
DEFAULT (0),
    [F_IP] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC47] DEFAULT ('000.000.000.000'),
    [F_LAST_POST_AUTHOR] [int] NULL ,
    [F_A_TOPICS] [int] NULL ,
    [F_A_COUNT] [int] NULL ,
    [F_MODERATION] [int] NOT NULL CONSTRAINT
[FORUM_SnitzC1018] DEFAULT (0),
    [F_SUBSCRIPTION] [int] NOT NULL CONSTRAINT
[FORUM_SnitzC1019] DEFAULT (0),
    [F_ORDER] [int] NOT NULL CONSTRAINT [FORUM_SnitzC1025]
DEFAULT (1),
    [F_L_ARCHIVE] [varchar] (20) NOT NULL CONSTRAINT
[FORUM_SnitzC1026] DEFAULT (''),
    [F_ARCHIVE_SCHED] [int] NOT NULL CONSTRAINT
[FORUM_SnitzC1027] DEFAULT (30),
    [F_L_DELETE] [varchar] (20) NOT NULL CONSTRAINT
[FORUM_SnitzC1028] DEFAULT (''),
    [F_DELETE_SCHED] [int] NOT NULL CONSTRAINT
[FORUM_SnitzC1029] DEFAULT (365),

```

```

        [F_LEVEL] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0001] DEFAULT (0),
        CONSTRAINT [FORUM_SnitzC48] PRIMARY KEY NONCLUSTERED
        (
                [CAT_ID],
                [FORUM_ID]
        ) ON [PRIMARY]
) ON [PRIMARY]
GO

/*
F_LEVEL is added to restrict different type of users accessing
the site.
0 = General Public
1 = Mentor at NSPE Mentoring program
2 = NSPE Member and Mentor at NSPE Mentoring program
*/

CREATE TABLE [FORUM_MEMBERS] (
        [MEMBER_ID] [int] IDENTITY (1, 1) NOT NULL ,
        [M_STATUS] [smallint] NULL CONSTRAINT [FORUM_SnitzC49]
DEFAULT (1),
        [M_NAME] [nvarchar] (75) NULL ,
        [M_USERNAME] [nvarchar] (150) NULL ,
        [M_PASSWORD] [nvarchar] (25) NULL ,
        [M_EMAIL] [nvarchar] (50) NULL ,
        [M_COUNTRY] [nvarchar] (20) NULL ,
        [M_HOMEPAGE] [nvarchar] (50) NULL ,
        [M_SIG] [nvarchar] (255) NULL ,
        [M_DEFAULT_VIEW] [int] NULL CONSTRAINT
[FORUM_SnitzC50] DEFAULT (1),
        [M_LEVEL] [smallint] NULL CONSTRAINT [FORUM_SnitzC51]
DEFAULT (1),
        [M_AIM] [nvarchar] (150) NULL ,
        [M_YAHOO] [nvarchar] (150) NULL ,
        [M_ICQ] [nvarchar] (150) NULL ,
        [M_POSTS] [int] NULL ,
        [M_DATE] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC52] DEFAULT (''),
        [M_LASTHEREDATE] [nvarchar] (50) NULL ,
        [M_LASTPOSTDATE] [nvarchar] (50) NULL ,
        [M_TITLE] [nvarchar] (50) NULL ,
        [M_SUBSCRIPTION] [smallint] NULL CONSTRAINT
[FORUM_SnitzC53] DEFAULT (0),
        [M_HIDE_EMAIL] [smallint] NULL CONSTRAINT
[FORUM_SnitzC54] DEFAULT (0),
        [M_RECEIVE_EMAIL] [smallint] NULL CONSTRAINT
[FORUM_SnitzC55] DEFAULT (1),
        [M_LAST_IP] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC56] DEFAULT ('000.000.000.000'),
        [M_IP] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC57] DEFAULT ('000.000.000.000'),

```



```

[M_FIRSTNAME] [nvarchar] (100) NULL CONSTRAINT
[FORUM_SnitzC0369] DEFAULT (''),
[M_LASTNAME] [nvarchar] (100) NULL CONSTRAINT
[FORUM_SnitzC0370] DEFAULT (''),
[M_OCCUPATION] [nvarchar] (255) NULL CONSTRAINT
[FORUM_SnitzC0371] DEFAULT (''),
[M_SEX] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC0372] DEFAULT (''),
[M_AGE] [nvarchar] (10) NULL CONSTRAINT
[FORUM_SnitzC0373] DEFAULT (''),
[M_HOBBIES] [ntext] NULL ,
[M_LNEWS] [ntext] NULL ,
[M_QUOTE] [ntext] NULL ,
[M_BIO] [ntext] NULL ,
[M_MARSTATUS] [nvarchar] (100) NULL CONSTRAINT
[FORUM_SnitzC0374] DEFAULT (''),
[M_LINK1] [nvarchar] (255) NULL CONSTRAINT
[FORUM_SnitzC0375] DEFAULT (''),
[M_LINK2] [nvarchar] (255) NULL CONSTRAINT
[FORUM_SnitzC0376] DEFAULT (''),
[M_CITY] [nvarchar] (100) NULL CONSTRAINT
[FORUM_SnitzC0377] DEFAULT (''),
[M_STATE] [nvarchar] (100) NULL CONSTRAINT
[FORUM_SnitzC0379] DEFAULT (''),
[M_PHOTO_URL] [nvarchar] (255) NULL CONSTRAINT
[FORUM_SnitzC0378] DEFAULT (''),
[M_MEMBER_STATUS] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0002] DEFAULT (0),
CONSTRAINT [FORUM_SnitzC58] PRIMARY KEY NONCLUSTERED
(
    [MEMBER_ID]
) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

/*
M_MEMBER_STATUS is added to show the NSPE membership status of
a user
0 = General Public
1 = Mentor at NSPE Mentoring program
2 = NSPE Member
*/

CREATE TABLE [FORUM_MENTOREE] (
    [Match_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [Mentoree_ID] [int] NOT NULL ,
    [Mentor_ID] [int] NOT NULL ,
    [MNT_LOG_STATUS] [tinyint] NOT NULL CONSTRAINT
[FORUM_SnitzECC0010] DEFAULT (0),
CONSTRAINT [FORUM_SnitzECC0011] PRIMARY KEY CLUSTERED
(
    [Match_ID]

```

```

        ) ON [PRIMARY]
    ) ON [PRIMARY]
GO

```

```

/*
MENTOREE Table lists all of the Mentorees registered in the
program and list their Mentor_ID.
Match_ID = Unique ID to show thee Matchup ID
Mentoree_ID = linked to MEMBERS.MEMBER_ID and refers to the
Mentoree User
Mentor_ID = linked to MEMBERS.MEMBER_ID and refers to the
Mentor User
MNT_LOG_STATUS:
0 = Communication log already filed since last reset
1 = Communication log pending since last reset
reset will be done periodically by the NSPE staff acting as
Administrator of the Engineers' Café site.
*/

```

```

CREATE TABLE [FORUM_MODERATOR] (
    [MOD_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [FORUM_ID] [int] NULL CONSTRAINT [FORUM_SnitzC59]
DEFAULT (0),
    [MEMBER_ID] [int] NULL CONSTRAINT [FORUM_SnitzC60]
DEFAULT (0),
    [MOD_TYPE] [smallint] NULL CONSTRAINT [FORUM_SnitzC61]
DEFAULT (0),
    CONSTRAINT [FORUM_SnitzC62] PRIMARY KEY NONCLUSTERED
(
        [MOD_ID]
    ) ON [PRIMARY]
) ON [PRIMARY]
GO

```

```

CREATE TABLE [FORUM_NSPE_MEMBERS] (
    [Number] [int] IDENTITY (1, 1) NOT NULL ,
    [NSPE_Member_ID] [int] NOT NULL ,
    [First_Name] [nvarchar] (50) NULL ,
    [Last_Name] [nvarchar] (50) NULL ,
    CONSTRAINT [FORUM_SnitzECC0012] PRIMARY KEY CLUSTERED
(
        [Number]
    ) ON [PRIMARY]
) ON [PRIMARY]
GO

```

```

/*
NSPE_MEMBERS table is created to list all of the current NSPE
member names and their NSPE Membership ID. This will allow
NSPE members with a valid ID to register as NSPE Member and
will be granted access to the NSPE Members only forums

```

Number = Used as the Primary key (Not Used at this moment)
 NSPE_Member_ID = NSPE Membership ID
 First_Name = First Name of the NSPE Member
 Last_Name = Last Name of the NSPE Member
 Currently, only the NBSPE_Member_ID and the Last_Name is
 tested for membership.
 */

```
CREATE TABLE [FORUM_REPLY] (
    [CAT_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC63]
DEFAULT (0),
    [FORUM_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC64]
DEFAULT (0),
    [TOPIC_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC65]
DEFAULT (0),
    [REPLY_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [R_MAIL] [smallint] NULL CONSTRAINT [FORUM_SnitzC66]
DEFAULT (0),
    [R_AUTHOR] [int] NULL CONSTRAINT [FORUM_SnitzC67]
DEFAULT (0),
    [R_MESSAGE] [text] NULL ,
    [R_DATE] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC68] DEFAULT (''),
    [R_IP] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC69] DEFAULT ('000.000.000.000'),
    [R_STATUS] [smallint] NULL CONSTRAINT
[FORUM_SnitzC1017] DEFAULT (0),
    CONSTRAINT [FORUM_SnitzC70] PRIMARY KEY NONCLUSTERED
(
        [CAT_ID],
        [FORUM_ID],
        [TOPIC_ID],
        [REPLY_ID]
    ) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO
```

```
CREATE TABLE [FORUM_SUBSCRIPTIONS] (
    [SUBSCRIPTION_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [MEMBER_ID] [int] NOT NULL ,
    [CAT_ID] [int] NOT NULL ,
    [TOPIC_ID] [int] NOT NULL ,
    [FORUM_ID] [int] NOT NULL
) ON [PRIMARY]
GO
```

```
CREATE TABLE [FORUM_TOPICS] (
    [CAT_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC71]
DEFAULT (0),
    [FORUM_ID] [int] NOT NULL CONSTRAINT [FORUM_SnitzC72]
```

```

DEFAULT (0),
    [TOPIC_ID] [int] IDENTITY (1, 1) NOT NULL ,
    [T_STATUS] [smallint] NULL CONSTRAINT [FORUM_SnitzC73]
DEFAULT (1),
    [T_MAIL] [smallint] NULL CONSTRAINT [FORUM_SnitzC74]
DEFAULT (0),
    [T_SUBJECT] [nvarchar] (100) NULL ,
    [T_MESSAGE] [text] NULL ,
    [T_AUTHOR] [int] NULL CONSTRAINT [FORUM_SnitzC75]
DEFAULT (0),
    [T_REPLIES] [int] NULL CONSTRAINT [FORUM_SnitzC76]
DEFAULT (0),
    [T_VIEW_COUNT] [int] NULL CONSTRAINT [FORUM_SnitzC77]
DEFAULT (0),
    [T_LAST_POST] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC78] DEFAULT (''),
    [T_DATE] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC79] DEFAULT (''),
    [T_LAST_POSTER] [int] NULL CONSTRAINT [FORUM_SnitzC80]
DEFAULT (0),
    [T_IP] [nvarchar] (50) NULL CONSTRAINT
[FORUM_SnitzC81] DEFAULT ('000.000.000.000'),
    [T_ARCHIVE_FLAG] [int] NULL CONSTRAINT
[FORUM_SnitzC82] DEFAULT (0),
    [T_LAST_POST_AUTHOR] [int] NULL ,
    CONSTRAINT [FORUM_SnitzC83] PRIMARY KEY NONCLUSTERED
(
        [CAT_ID],
        [FORUM_ID],
        [TOPIC_ID]
    ) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

```

```

CREATE TABLE [FORUM_TOTALS] (
    [COUNT_ID] [smallint] NOT NULL CONSTRAINT
[FORUM_SnitzC84] DEFAULT (0),
    [P_COUNT] [int] NULL CONSTRAINT [FORUM_SnitzC85]
DEFAULT (0),
    [P_A_COUNT] [int] NULL ,
    [T_COUNT] [int] NULL CONSTRAINT [FORUM_SnitzC86]
DEFAULT (0),
    [T_A_COUNT] [int] NULL ,
    [U_COUNT] [int] NULL CONSTRAINT [FORUM_SnitzC87]
DEFAULT (0),
    CONSTRAINT [FORUM_SnitzC88] PRIMARY KEY NONCLUSTERED
(
        [COUNT_ID]
    ) ON [PRIMARY]
) ON [PRIMARY]
GO

```

```
/*  
#####  
# Extra Comment  
#####
```

All of the Table Names have a prefix of FORUM_ and they are appended in the code.
Also, the FORUM_ prefix in all of the constraint names are appended.
The prefix is stored as "strTablePrefix" in the "config.asp" script.

The install script for SQL server 7 / 2000 (inc_create_forum_sql7.asp) is updated to include all changes made to the Engineers' Café.
The other two install scripts (inc_create_forum_sql6.asp & inc_create_forum_mysql.asp) is not updated and is not compatible with the Engineers' Café.

To use the install script on the SQL server 7 / 2000, go to http://your.server.address/forum_directory_name/setup.asp?RC=5
This will force the setup.asp to go into install mode. Then follow the onscreen instructions.
*/

APPENDIX B

Here is the configuration that the software was tested under:

Application variables	
STRVERSION	Snitz Forums 2000 Version 3.3.03
STRCOPYRIGHT	© National Society of Professional Engineers
STRTITLEIMAGE	NSPE_logo.gif
STRHOMEURL	http://www.nspe.org/
STRFORUMURL	http://www.nspe.org/forumurl/
STRAUTHTYPE	db
STRSETCOOKIEFORUM	1
STREMAIL	0
STRUNIQUEEMAIL	1
STRMAILMODE	cdonts
STRMAILSERVER	your.mailserver.com
STRSENDER	yokuno@nspe.org
STRDATETYPE	mdy
STRTIME TYPE	24
STRTIMEADJUSTLOCATION	0
STRTIMEADJUST	0
STRMOVE TOPICMODE	1
STRPRIVATEFORUMS	1
STRSHOWMODERATORS	1
STRSHOWRANK	3
STRHIDE EMAIL	0
STRIPLOGGING	1
STRALLOWFORUMCODE	1
STRIMGINPOSTS	0
STRALLOWHTML	0
STRSECUREADMIN	1
STRNOCOOKIE	0
STRCREDITEDBYDATE	1
STRHOT TOPIC	1
INTHOT TOPICNUM	20
STRHOME PAGE	1
STRAIM	1
STRYAHOO	1
STRICQ	1
STRICONS	1
STRGFXBUTTONS	1
STRBADWORDFILTER	1
STRBADWORDS	Word1 word2 word3 word4 word5
STRDEFAULTFONTFACE	Arial, Helvetica, Verdana
STRDEFAULTFONTSIZE	2
STRHEADERFONTSIZE	4
STRFOOTERFONTSIZE	1
STRPAGEBGCOLOR	white
STRDEFAULTFONTCOLOR	black

STRLINKCOLOR	#993333
STRLINKTEXTDECORATION	underline
STRVISITEDLINKCOLOR	#999966
STRVISITEDTEXTDECORATION	underline
STRACTIVELINKCOLOR	red
STRHOVERFONTCOLOR	red
STRHOVERTEXTDECORATION	underline
STRHEADCELLCOLOR	#006666
STRHEADFONTCOLOR	mintcream
STRCATEGORYCELLCOLOR	#CCCC99
STRCATEGORYFONTCOLOR	#000000
STRFORUMFIRSTCELLCOLOR	whitesmoke
STRFORUMCELLCOLOR	whitesmoke
STRALTFORUMCELLCOLOR	gainsboro
STRFORUMFONTCOLOR	#006666
STRFORUMLINKCOLOR	#993333
STRTABLEBORDERCOLOR	black
STRPOPUPTABLECOLOR	#CCCC99
STRPOPUPBORDERCOLOR	black
STRNEWFONTCOLOR	blue
STRTOPICWIDTHLEFT	100
STRTOPICWIDTHRIGHT	100%
STRTOPICNOWRAPLEFT	1
STRTOPICNOWRAPRIGHT	0
STRRANKADMIN	Administrator
STRRANKMOD	Moderator
STRRANKLEVEL0	Starting Member
STRRANKLEVEL1	New Member
STRRANKLEVEL2	Junior Member
STRRANKLEVEL3	Average Member
STRRANKLEVEL4	Senior Member
STRRANKLEVEL5	Advanced Member
STRRANKCOLORADMIN	gold
STRRANKCOLORMOD	silver
STRRANKCOLOR0	bronze
STRRANKCOLOR1	green
STRRANKCOLOR2	cyan
STRRANKCOLOR3	blue
STRRANKCOLOR4	purple
STRRANKCOLOR5	orange
INTRANKLEVEL0	0
INTRANKLEVEL1	50
INTRANKLEVEL2	100
INTRANKLEVEL3	500
INTRANKLEVEL4	1000
INTRANKLEVEL5	2000
STRSIGNATURES	1
STRSHOWSTATISTICS	1
STRSHOWIMAGEPOWEREDBY	0
STRLOGONFORMAIL	1



STRSHOWPAGING	1
STRSHOWTOPICNAV	1
STRPAGESIZE	15
STRPAGENUMBERSIZE	10
STRFULLNAME	1
STRPICTURE	0
STRSEX	1
STRCITY	1
STRSTATE	1
STRAGE	1
STRCOUNTRY	1
STROCCUPATION	1
STRFAVLINKS	1
STRBIO	1
STRHOBBIES	0
STRLNEWS	0
STRQUOTE	0
STRMARSTATUS	0
STRRECENTTOPICS	1
STRNTGROUPS	0
STRAUTOLOGON	0
STRMOVE NOTIFY	1
STRSUBSCRIPTION	2
STRMODERATION	1
STRFORUMTITLE	Engineers' cafe
ConfigLoaded	YES