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Introducing SourceForge to the WPI Community

An Interactive Qualifying Project Report

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Degree of Bachelor of Science

by

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1. Source Forge
2. Collaboration

Professor Gary Pollice, Co-Advisor

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Abstract

This project introduces SourceForge to the WPI community. SourceForge is a secure, centralized solution for optimizing and managing distributed project development. To substantiate its introduction, a vigorous feasibility study was embarked on. Based on the survey, it was clearly evident that SourceForge should be introduced to the WPI community so that projects could be efficiently managed, instead of using poorly-designed consolidating software.

In view of this, clear-cut procedures and videos are produced to guide individuals in the usage of SourceForge.

1. Introduction

As professors and students work on projects, collaboratively or individually, they need a centralized and optimized means to monitor, manage and distribute project activities and materials in a well structured manner. Lack of such effective monitoring leads to project delay, and in some cases, failure of the project. Although there are a number of project management tools in existence, SourceForge is proven to be an outstanding product which merits its introduction to the WPI community.

SourceForge is a secure, centralized solution for optimizing and managing distributed project development. To substantiate its introduction, a vigorous feasibility study was embarked on. Based on the survey, it was clearly evident that SourceForge should be introduced to the WPI community so that projects could be efficiently managed, instead of using poorly-designed consolidating software.

In view of this, clear-cut procedures and videos are produced to guide individuals in the usage of SourceForge.

2. SourceForge Usage

2.1 Using SourceForge as a student

SourceForge is a valuable resource to students for both personal and collaborative use. It provides an invaluable platform to improve the overall quality of task organization by providing a continuous feedback from project stakeholders. It also provides more motivation to students for interactivity and thus fosters active learning. It also provides centralized development assets in any way you wish, whether in the native Web interface, from Windows desktop, IDE or from a Microsoft Office application.

2.2 Personal Use

As a student goes through his/her study at an institution, it is worthwhile capturing a record of their work. This will serve as complete portfolio of the student's academic career. This collection of information may be useful to prospective employers who are interested in one's progress and activities during their education. Sponsors can be given access to this personal data so as to reduce response time and feedback, fostering efficient communication.

As most academic works are done using a number of third-party tools such as Concurrent Versions System, Subversion, Microsoft Office and etc., students easily integrate these application tools with SourceForge for proper organization and updates which these application software cannot efficiently handle alone.

2.3 Team use

A very vital aspect of team management and collaboration is communication. Many failed projects are due to lack of communication. SourceForge provides an easy and efficient means of communication among team members which, when effectively used, enhances project success. Proper communication augments better control and management of projects.

Students often work on projects using methods and procedures which are not efficient enough to provide proper security and more centralization. SourceForge provides these teams with a more secure, centralized, enterprise-proven solution for efficiency in development and management of these teams. Because it provides a collaborative development location that supports isolated teams and resources, which improves project team and project efficiency, a student can be more productive and perform better on a project as a whole, and even optimize performance on specific portion of an assigned project.

SourceForge's integrative characteristics give teams the ability to track progress, changes and defects of a collaborative project. Individual teams members can be alerted by other members about the status and defects of portions or a project, and may even modify portions of the project. With the effective use of SourceForge, ineffective team members can be easily identified and corrective actions taken. More so, team members who are committing more effort to the project by completing more tasks can also be identified. This enhances more efficient management of team project, thus fostering successful completion.

A team may consist of students working on a software development project which has to be progressively built and modified frequent. SourceForge provides a perfect platform which allows downloading – importing – part or the entire project on a local machine for modification and then re-uploaded, keeping track of who and when changes were made. This is possible by using integrated third-party tools such as CVS, subversion and so on.

2.4 IQP/MQP Team Usage

Since Major Qualifying Project and Interdisciplinary Qualifying Project are team or individual based projects and SourceForge is designed to support the both. One can confidently utilize the facilities provided by the SourceForge. Both types of projects require meetings on a regular basis, which entails communication to ensure success. Without proper communication management most projects are bound to failure. With SourceForge, team members and their advisors have a common view of the current state of the project, which reduces the overhead during the weekly meetings. With less time spent on learning the current state of the project, more time can be made available for productive discussions on future tasks.

3 Feasibility study

To substantiate the introduction of SourceForge to the WPI community, a feasibility study was conducted. Knowing that there is a proliferation of collaborative software on today's market it was appropriate to conduct a series of studies to determine the value introducing SourceForge. It would be quite irrational to introduce a completely new means of sharing projects when there already exists a more popular and efficient software in use by the WPI community. The study was conducted in a number of ways, – observation, interview and questionnaire – and targeted all groups of scholars – Computer Science Major Students, Computer Science professors, Non-Computer Science major students and Non-Computer Science Professors. Nevertheless, more credence was given to Non-CS majors as it was assumed that CS majors have used SourceForge or other kind of collaborative software, due to the nature of CS projects. The study was geared towards ascertaining the most predominantly used method or software that most of the WPI community uses when embarking on collaborative project and whether them

3.1 Observation

This procedure was not widely used because it had the drawback of students and professors not being very comfortable of having their projects and meetings observed. Individual project observation proved more difficult. Student and professors working on projects scheduled work at random and could not be easily monitored. Nevertheless, the few groups and individuals that were monitored demonstrate evidence that students were using mostly Microsoft Office products and emails to share their works.

3.2 Interview

Although Interviews constituted a lesser portion of the fact finding, they were essential, in that it revealed the depth of the population's knowledge of exiting collaborative software including SourceForge. From these interviews, it was clear that a majority of the WPI population had a little or no knowledge about collaborative software including SourceForge, and therefore resorted to the use of inefficient application software like Microsoft Office

products and other spreadsheet products. When asked if they would use a better and efficient collaborative software, most answered in affirmation.

This also had a drawback of enormous time consumption as a wide range of individuals was to be interviewed. Interviewees also did not have enough time to respond to the list of questions, and also did not feel comfortable during the process. Nonetheless, there were few students who were enthusiastic about sharing their project processes, which also revealed some inefficient means of working on projects collaboratively. A number of students were interviewed and their responses noted.

3.3 Questionnaire

Among the fact finding procedures, questionnaire was the most widely used and efficient. It took relatively short time and gave subjects the ability to respond effectively. Another huge advantage of this procedure was that interviewees could complete the questionnaire at their convenience, a benefit that other fact-finding procedures lacked. Questions on the questionnaire were crafted and designed in such a way that required in-depth response of the subject's knowledge and usage of collaborative software. Before a questionnaire was completed, a consent form was handed out to be signed by each participant. This was to explain the purpose of the questionnaire and also to get the consent of every interviewee about the information to be provided. Below are samples of the consent form and the questionnaire:

Title of Research: **Introducing SourceForge to the WPI Community**

Name(s) of Principal Investigator(s): **Alex Yeaganov**
Benjamin Geahwie

Project Advisor: **Prof. Gary Pollice**

Thank you for considering participating in this survey. Feasibility study is being conducted so as to justify the introduction of SourceForge - a collaborative environment - to the WPI community.

You will be given a couple of simple questions that require a YES or NO answer, or a very brief explanation if necessary. This survey takes approximately five minutes.

There are no known risks associated with participating in this study.

Please remember that your participation in this survey is voluntary, confidential and anonymous. Only the researcher will have access to the data collected. You may withdraw your consent to participate at any time without any penalty. This is a completely voluntary research project, so you may stop at anytime.

By signing below you acknowledge that you may not gain anything personally by participating in the survey.

If you wish to obtain further information about this study you may obtain a more detailed explanation of its goals after your participation has finished.

YOUR SIGNATURE BELOW INDICATES THAT YOU HAVE READ THE INFORMATION ABOVE AND YOU ARE CONSENTING TO PARTICIPATE IN THE EXPERIMENT DESCRIBED ABOVE.

_____ ____ / ____ / ___
Participant's Signature Date

_____
Participant's email address

I have explained in detail the procedure for this experiment to the participant and, if asked, have made a copy available for the participant to keep. The participant has agreed to participate by signing above. My signature also confirms that the experiment was carried out as described.

_____ ____ / ____ / ____
Researcher Signature Date

Figure 1. Consent Form

IQP Feasibility study

Project Title: **Introducing SourceForge to the WPI Community**

Students: **Alex Yeganov and Benjamin Geahwie**

Project Advisor: **Prof. Gary Pollice**

Student's major: _____ Professor's department: _____

1	Have you ever had to collaborate with others, sharing information, and storing such information in a commonly accessible location? Yes ☐ No ☐ What type of information did you have to share? • Documents [electronic form? Y / N; If not electronic, could they be converted to electronic form?] • code • tasks • activity logs • other (describe_____)
	Comment:
2	Have you created an individual project or space that might interest others? Yes ☐ No ☐ If Yes, how did you make it available for others to access?
3	Have you been involved in a group project? Yes ☐ No ☐ If yes: • Did everyone have a specific set of tasks assigned to them? Yes ☐ No ☐ • How were tasks assigned? • Was there group status reporting? Yes ☐ No ☐ • Was there individual status reporting? Yes ☐ No ☐ • Did you have a formal plan that you tracked the project's progress? Yes ☐ No ☐
	Comment
4	Are other parties (sponsors/partners), external to WPI, interested in your work at WPI? Yes ☐ No ☐ If yes, • What is your relationship to your work (those sponsors/partners)? • How do they keep track of your progress?
5	Have you ever had to keep multiple versions / revisions of documents or other data? Yes ☐ No ☐ If yes, how have you done this?
6	Have you ever used any collaboration software? Yes ☐ No ☐ If yes, what software?
7	How did you share, or plan to share, information during your IQP and MQP?
8	What problems have you encountered, or do you foresee encountering on projects where you need to collaborate and share information?

Figure 2: Questionnaire

3.4 Data (Questionnaire) Analysis

Information gathered from the above questionnaire was tabulated and further analyzed. Based on the analysis made with the assistance of Microsoft Excel, it was quite evident that most of the WPI community have shared works but have not used any efficient collaborative software like SourceForge. One hundred and sixty-one students and forty-three professors participated in the questionnaire. Distributions of responses gathered are as followed:

General Questions

	Students		Professors	
	Yes	**No**	**Yes**	**No**
Question 1: Have you ever had to collaborate with others, sharing information, and storing such information in a commonly accessible location?	158	3	43	0
Question 2: Have you created an individual project or space that might interest others?	68	93	26	17
Question 3: Have you been involved in a group project? If yes,	144	17	41	2
Question 3a: Did everyone have a specific set of tasks assigned to them?	124	37	42	1
Question 3b: How were tasks assigned?	119	42	34	9
Question 3c: Was there group status reporting?	104	57	36	7
Question 3d: Was there individual status reporting?	84	77	18	25
Question 3e: Did you have a formal plan that you tracked the project's progress?	140	41	30	13
Question 4: Are other parties (sponsors/partners), external to WPI, interested in your work at WPI?	17	144	33	10
Question 5: Have you ever had to keep multiple versions / revisions of documents or other data?	148	13	32	11
Question 6: Have you ever used any collaboration software?	81	80	23	20

Figure 3: Table containing number of "Yes" and "No" responses on general questions from participants.

Note: Questions 7 and 8 were not included as they were not simple Yes or No questions.

The information above was further analyzed and charts produced to vividly illustrate its relevance and substance. From the charts it is quite evident that the WPI community has not used SourceForge and will extensively use it if introduced.

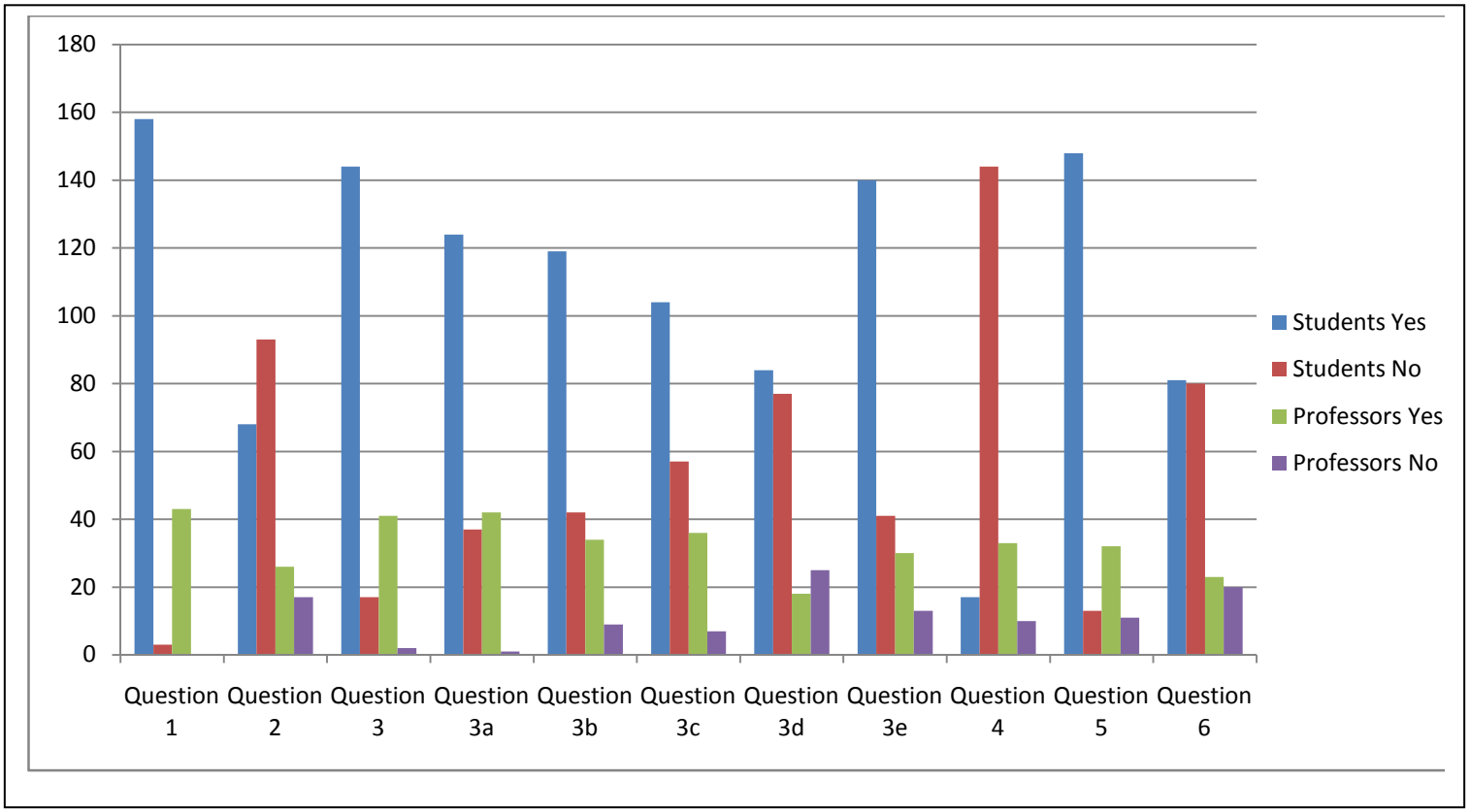

Figure 4: Bar Chart of "Yes" and "No" response table.

3.5 Detailed Questionnaire analysis and software usage

The questionnaire included questions that explored participant's knowledge, usage of collaborative software and sharing of documents, code and other sharable electronic files. Because these were not simple Yes or No questions but rather required detailed explanation, they were further analyzed. Examples of such questions are Questions 7 and 8. Below is a detailed representation and distribution of responses of such questions.

Students	Professors
Art files	Requirements
Video	Presentations
Music	Videos
Pictures	Experiment stimuli

		Students	Professors
Question 1 (Type of work shared)	Documents	149	41
	code	109	25
	tasks	76	14
	activity logs	80	15
	others	*	*
	Ave. % stored	96.05	97.625
Question 2 (How made available to others)	Library	Apps	myWPI
	Email	Website	SourceForge
	Tortisesun	FTP	Sharepoint
	Database	HTTP	Fileshare
	Google	CVS	Filedrops
Question 3 (How tasks were assigned)	Meeting	Equally	
	Group decision		
	Voluntary		
	Skill		
	Randomly		
Question 4 (Relationship to work and track keeping process)	Sponsors	Email	Accessement
	Summer employer	WPI Web	Grades
	Semi-prof.	Paper report	Presentation
	Old advisor	Meetings	C heck-in log
	Collaborators	Visits	Phone Advisor

Fig. 5: Detailed responses to question without Yes or No response.

Question 5 (How multiple versions of document kept)	CVS Manual backup Rename file Web SourceForge	Archives Version Number SCCS CVS Clearcase	Sun Database
Question 6 **(Collaboration software used)**	CVS Google Subversion Apps Sun	SourceForge myWPI FTP Trac Yahoo	MSN Msgr. Grave Webex Adobe
Question 7 (Share IQP and MQP information)	Email Scan disk IM Hardcopy Google	Subversion Sun CVS Flash drive myWPI	Spreadsheet
Question 8 (Problems encountered using current software	Version confusion Accessibility to all parties Lost versions Not simple to use Poor organization		

Figure 5 contd: Detailed responses to question without Yes or No response cont.

From Figure 5, it can be concluded that document or file sharing of some form by use CVS, Google, myWPI, Messenger programs and others, is prevalent in within the WPI community. Nevertheless, a minute percentage, most of which were CS Majors, has used SourceForge.

4 Medium of Introduction and presentation

This project used Videos in conjunction with bubble comments and instructions to illustrate how SourceForge can be used. This method was chosen because it presents a vivid, elucidated and interactive means of learning. Examples of videos created are:

- Create an Account
- Create a project
- Find and Join a Project
- Leave a Project
- Workspace Overview
- Subversion project creation

Because SourceForge is a well designed collaborative software, one should be pretty much equipped to explore other facilities and functions with much ease, after mastery of these videos. Below are examples of step-by-step procedure of few of these procedures.

4.1 Create an Account

1. Open a web browser and navigate to **www.sourceforge.wpi.edu**
2. Under new Users, click **Create an Account**
3. Enter a User **Name, Password, Full Name and Email Address**

   (The user name and password must be your WPI user name and password)

Figure 6: Create SourceForge Account Page.

4. Click **Create**

   (You will receive an email from the SourceForge administrator accepting or denying your request)

4.2 Create a Project

Remember: One must have an account already created before proceeding to use the feature of SourceForge.

1. Open a web browser and navigate to **www.sourceforge.wpi.edu**
2. Log on SourceForge: Enter your **User name** and **Password**.
3. Click **Projects**
4. Click **Create Projects**
5. Enter **Project Name and Description**

   (URL Name and Project Template are optional)

Figure 7: Project creation screen.

6. Click **Create**

   (You will receive an email from the SourceForge administrator approving or denying your request)

4.3 Find and Join a Project

1. Open a web browser and navigate to **www.sourceforge.wpi.edu.**
2. Log on SourceForge: Enter your **User name** and **Password**.
3. Click **Projects** in your personal navigation bar.
4. Click **Create Projects.**
5. Enter **Project Name and Description.**

   (URL Name and Project Template are optional)
6. Click **Create.**

   (You will receive an email notification when your request is either approved or denied)

4.4 To find and join a project

1. Log in to SourceForge (Your My Page is displayed).
2. Click **Projects** in your personal navigation bar (The list of projects of which you are a member is displayed).

3. Click the **All Projects** tab (The list of all SourceForge projects is displayed).

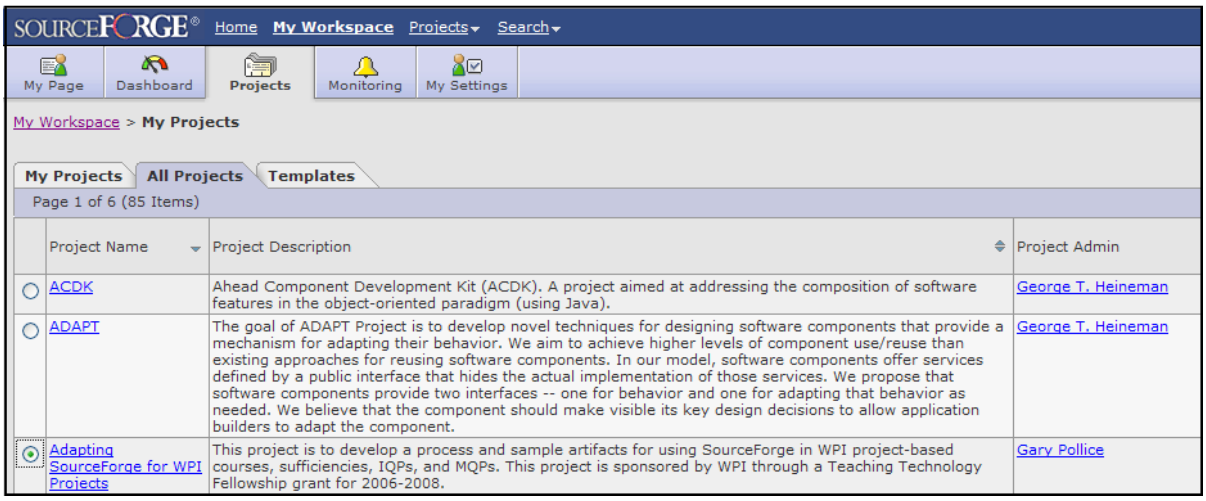

Figure 8: All Projects list

4. Select the project that you want to join by checking the radio button.
5. Click **Request Membership.**

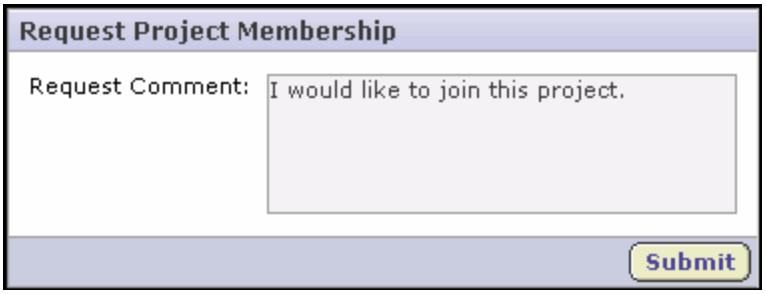

Figure 9. Request Project Membership page

6. Enter any comments that you want to send with your request.
7. Then click **Submit.**

(You will receive an email notification when your request is either approved or denied. You can also request project membership from the project home page. Each project home page has a Join this Project link. To request project membership, click Join this Project. You are taken to the Request Project Membership page described in Step 3 above.

Running videos and more on the usage of SourceForge can obtained from Professor Gary Pollice – Project Advisor.

5 Conclusions

Tthe demand for collaborative software will continue to increase as it becomes almost impossible to effectively and efficiently share projects without the usage of some kind of well defined and structured collaborative tool. It should also be noted that the WPI community is no exception to this demand. Since SourceForge has the capability of a secured centralized solution for optimizing and managing distributed projects, it is worth introducing to the WPI community.

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