WorkMyWay

An Interactive Qualifying Project

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An Interactive Qualifying Project
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Abstract

The objective of the Work My Way project was to design and implement a website enabling college students to discover the time management and productivity tools which work best for them. Taking into account previous work on the project, the team upheld the ideals of accessibility and universal design for learning. Indeed, a primary goal of this IQP was to ensure that the final product was usable by college students of all ability levels and needs, while dismissing associated stigma. Initially, the team researched principles of Universal Design and performed a competitive analysis, which revealed the originality of Work My Way. To ensure the product was designed with consideration for user preferences, three rounds of focus group testing were conducted, assessing the viability of the product idea and mockups. User feedback was iteratively incorporated into the design of the final deliverable.

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Introduction

Based on a study done by the Organization for Economic Co-operation and Development (OECD) in 2012, 43% of people between the ages of 25 and 64 had attained a tertiary education. Although this is much higher than the average, the percentage of Americans getting a tertiary education has increased much slower than that of most other countries (Organization for Economic Co-operation and Development, 2014).

In a study done by the National Longitudinal Transition in 2003, only 54% of students with learning disabilities plan to work toward a tertiary education, and only 28% of parents think that their child will attend post-secondary school (National Center for Learning Disabilities, 2014). From 1976 to 2012, the number of people who have assistance with learning disabilities has increased by over 300% (National Center for Education Statistics, 2015).

Due to this information, it makes sense to assume that as the number of people diagnosed with learning disabilities increases, the percentage of people who plan to work toward achieving a tertiary education decreases. This phenomenon could be explained by the idea that the type of education changes drastically from secondary to tertiary school. However, the problem is also that those with learning disabilities are not getting the assistance they need in order to succeed in their college career.

The universal design for learning was developed in an effort to resolve this problem. It helps to provide all students with the resources needed to succeed by catering to different abilities and learning styles. In this project, we are attempting to compile a directory of resources for students to use in their studies, and to create a website to share those resources with all students, regardless of major. The purpose of this website is to provide a single directory of a compilation of useful academic resources to all students at WPI. It should dismiss any stigmas

that are normally associated with students using assistive technology, as the resources featured will be advantageous to all students, not exclusively those diagnosed with or perceived to have disabilities or challenges. The design of the website will be user-friendly, easy to navigate, and will provide quick access to the listed resources as well as peer ratings of usefulness. Additionally, we aim to collect data about the merits and shortcomings of other tech universities' offices of student services, in order to improve WPI's model. The website will cater to all students who would like to use it, and can be used as a model for other universities who wish to provide students with resources that are applicable to their studies.

Background

Based on our research into the Disability Services offices of other colleges in WPI's cohort, we have determined that no other similar institutions offer universal learning services comparable to what we aim to create. Keene State College's Office of Disability has a site that gives examples of free assistive technology to help students with their disabilities, but these resources would not necessarily be helpful for those without disabilities (Keene State College, 2016). In addition, there are sites such as Georgia Tech's Tools for Life site that could be compared to the type of directory that we are trying to create (Georgia Tech, n.d.). This site, however, is very limited in their areas of study, and there is no way to determine what resources would be best for your learning style. Although both of these sites could be useful in certain circumstances, Work My Way was intended to be used by all students to aid in their everyday studies and lives.

Furthermore, many of the websites of these schools' disability services offices tended to have low readability scores and rarely offered information beyond basic instructions for accessing on-campus academic or disability assistance. Virtually none of these websites followed

guidelines for universal design, and there were no cases in which a separate, publicly visible, Universal Learning website was offered. Thus, it can be concluded that Work My Way is an original endeavor. This is surprising in that collegiate Disability Services offices are geared towards making the daily events in a student's life more feasible; it is logical that their websites would better reflect their commitment to this by designing to accommodate and provide resources to help individuals of all learning styles and abilities.

Additionally, it seems that most colleges similar to WPI have Disability Services which primarily cater towards students with diagnosed or diagnosable disabilities, and less so towards students who may simply need guidance with organization, planning their time effectively, or are unsure what campus academic help resources are relevant to their work (WPI, n.d.). This one-sided, disability-focused model leads to unnecessary stigma, which inevitably impacts the utilization of the services offered; a student who knows he or she needs help may hesitate to visit the Disability Services Office due to fear of being judged by peers or being labeled as a less-capable individual. This cycle is perpetuated by stigma discouraging students without diagnosed disabilities from utilizing the offered resources, resulting in the office seeing no need to offer help focused towards these students. A universal-learning-based approach would be beneficial here, such as a service offering a variety of tools and resources in an anonymous form accessible to all students, thereby reducing stigma by avoiding exclusion. Broadly, this is what our team aims to create with Work My Way.

Our goal is to not only help WPI students in their studies, but to also assist college students at large in subsequent iterations of the product. In the beginning, this project was geared toward WPI students with disabilities. However, Work My Way has developed in the direction of forming a business model that can be sustained by user use. Our objective was to create a site

that can be used by all students, regardless of their area of study and abilities, which will take into account their learning style in order to provide them with a resource well-suited to them. We also aimed to design a product that would be able to remember what resources the user had viewed in the past, in order to find ones that might suit them in the future.

Methodology

The Work My Way IQP will be working on re-implementing the existing website from previous years, while adding more content. Prior to re-implementing the website, we analyzed the website design and implementation from the previous IQP group, focusing on usability, maintainability, and ease-of-use. We also compared our existing website to 20 other universities within the same cohort as WPI to determine what types of features, functionality and content are most important for our implementation. We plan to conduct further research based on user interactions with our website, general surveys about universal access and design, and resources used by students at WPI and similar schools for maximizing success in the collegiate setting.

During the course of the 2015-2016 academic year, the Work My Way IQP changed its name from Universal Learning Center. While the Office of Disability Services will remain a sponsor for the project, the team opted to rename the project to create distance from any bias or prejudice to learning focused resources, while also helping to eliminate any associated stigma with learning disabilities. One focus of the name change was to change the implicit product positioning of remediation to empowerment and growth. The name change was also prompted by the presence of another organization that used the "Universal Learning Center" name for an unrelated establishment, in order to avoid confusion or association with an unrelated institution. In later renditions of the website, the Work My Way nomenclature will enable the site to grow beyond the scope of WPI and allow us to develop a brand around the site.

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Our website development methodology is based on a modified Scrum implementation. Since only two people are working on the website, we will forgo daily standup meetings; we will continue to conduct Sprint meetings at the end of each 14-day sprint. Each Sprint will be concluded with an analysis of any effort we conducted during that period of time and will allow for adjustment based on feedback from our stakeholders. Trello will be used as our Scrum board, allowing for easy management of the project.

The WMW website will be built using Node.js with a custom content management system implementation. It is hosted using computing resources from WPI and will remain hosted at WPI until the needs of the WMW website exceeds the available resources from the Institute. Future development will be staged on a separate instance of the website, in order to allow thorough testing prior to deployment.

Our initial focus is on serving the needs of students at WPI, including students with learning disabilities and students without diagnosed disability. We aim to initially provide the service without any form of personalization or user-specific analytics, but we plan to add user login capabilities to our site in the second phase. User login capabilities will involve OAuth2-based authentication, allowing for social media logins from Twitter, Facebook or Google accounts. Both phases will involve collecting non-personally identifiable information about visitors, in order to better understand the types of content users are interested in and the ways that they access our website. This will guide informed addition of content in future iterations.

The ULC website strives to follow the below principles:

- **Easy navigation** - users should be able to find the content they want quickly and without hassle.

- **Accessibility** - the website content should be easily consumed by people, regardless of the way they learn.

- **Multimodal -** the website should present information using different mediums, including video, audio, text, and photos. These mediums should be independent alternatives to existing content, not supplements.

- **Interactive -** content should be driven by user feedback and input.

- **Platform agnostic -** the website should provide a usable experience on all platforms, including phone, tablet, Windows, Mac or Linux systems.

We plan to iteratively test our website using semi-formal tests with current and prospective users, as well as with the Office of Disability Services at WPI, based on recent work performed on the website. We also plan to use formal test methods that focus on broad aspects design implementations on the website. *Qualtrics* surveys will be used as a tertiary test mechanism, for determining broad sentiments about users who access the website. Finally, Google Analytics and heat maps will be used to assess user behavior on the ULC website.

Testing of the Work My Way website will involve a combination of focus groups, surveys, and incidental data collection in order to provide feedback and data on the design, development and implementation of the website. The purpose of testing is to determine if the website is: relevant to student needs, highly accessible and usable, and able to provide students with unique value that ensures continued engagement. Each testing method will provide a combination of qualitative and quantitative data; some data will be synthesized into quantitative data.

Focus groups will be conducted in several stages with the opportunity for continued refinement in each stage of the process. At the conclusion of each focus group stage, new

questions will be constructed based on a new understanding of the problems at hand. For the purpose of maintaining originality and dynamism, the formation of new questions will be preceded by a 14-day waiting period restricting surveyor exposure to data. During this period of time, the surveyors should have no access to data or test questions, in order to prevent bias or memory of previous questions.

Each focus group session will be led by a single moderator. The moderator will be a student on the IQP team or a designated third party, depending on the target audience for the focus group. For the purpose of maintaining open dialog, the moderator should be of the same social group as the focus group; any specific characteristics or classifications that may hinder open dialog should be avoided when deciding on a moderator or members of the focus group.

During the session, the moderator will be responsible for guiding the conversation around the designated questions. A neutral third-party, which could be another IQP team member, will be responsible for capturing information from discussion; alternately, or in conjunction with, the IQP team may elect to capture an audio recording of the discussion for later review. If the team decides to capture audio, consideration will have to be given to the privacy of the individuals being interviewed.

Each session should be approximately 60 minutes, with 45 minutes being allocated to formal questions. The sessions should be held in a neutral location, preferably in a location where candidates can feel a reasonable expectation of privacy and comfort; such a space should not be distracting or otherwise impair the group's discussion. Furthermore, the moderator may opt to omit specific questions from the session, in order to maintain the designated time restrictions. Care should be exercised with ensuring the focus group remains focused on the

questions at hand, while allowing for discovery of new perspectives or points relevant to the project.

An initial focus group stage will involve 3 or 4 students within WPI who are unrelated to the project or its sponsors. These students will be exposed to product mockups and wireframes, as well as general questions about Work My Way. This stage is intended to provide insight into the project, the ideation process, and some feedback on the project's direction. Future stages are explored in the conclusion.

Testing will also comprise of formal A/B testing, interaction testing, and behavioral testing of site users. User experience testing will be separate from focus groups and will rely solely on one-to-one test procedures that enable the Work My Way team to objectively evaluate the efficacy and accessibility of the site design and implementation without introducing bias from an open guided discussion.

A/B testing will involve multiple renditions of the same feature or interface, with the test subject selecting between two options. The initial implementation of A/B testing will rely on in-person, formalized comparisons between two versions of the product; later implementations may include two usable versions of the product that can be offered to users on the website. Later implementations will model the A/B testing methodology used by Alphabet Inc. (Google).

Interaction testing will involve evaluating user interactions with the website, mockups, or interface. A user will be presented with an interactive version of the site and will be asked to perform several operations. The evaluator will pay attention to the emotional state and behavior of the user, while also keeping track of their success. A third party will also be involved in monitoring the performance of the user; users will be evaluated on how long it takes them to complete each operation. At the conclusion of an interaction testing phase, the evaluators will

assess the data collected and evaluate what steps need to be taken to improve the product in terms of usability, efficacy, and performance.

Behavioral testing will involve evaluating the way users interact with the website. Eye tracking, heat maps, and clickstream analysis are some of techniques that will be used to evaluate the behavior of users. At the end of each behavioral testing phase, the evaluators will assess the data collected and evaluate how the product can be improved or changed to bring the product closer to promoting the desired user behavior.

Analysis and Testing

The team conducted three rounds of focus group testing in order to determine if WPI students saw a need for a tool connecting them to personalized resources to help them succeed, and to obtain user feedback on mockups. Our first focus group, Stage 0, served to illustrate students' problem areas in time management and productivity, thereby guiding product design and functionality planning. Our second focus group, Stage I, brought in feedback from potential users at WPI about preliminary designs and mockups created based on the data gathered in Stage 0. Lastly, the Stage II focus groups provided student input on later design iterations, with more specific and detailed questions about content, navigation, and functionality. The key purpose of the focus group testing methodology was to ensure an iterative, meaningful, and informative feedback loop with a sample of potential users, enabling them to guide the team's design decisions.

Stage 0: Market Validation

Stage 0 consisted of preliminary individual interviews with a several students unrelated to the project. The primary goal of this test was to determine whether or not there was a need for the Work My Way concept in a college environment, the initial target market. Based on a list of

questions developed before the event, subjects were asked open-ended questions about their study habits, learning style, time management, favorite resources and tools for success, and methods of seeking academic and professional help. Significant attention was paid to the methodology of forming these questions, ensuring that the questions were broad enough to prevent interviewer bias from skewing participant responses. Based on analysis of interviewer notes and recorded participant responses, the conclusions of several of the most meaningful questions from Stage 0 are summarized below. Please refer to Appendix F for a list of questions asked in Stage 0.

When asked about their own perception of personal time management effectiveness on a scale of 1 to 10 (10 being highly effective at managing their time), the mean typical response was in the range of 7 to 8. Many participants indicated that part of what is hindering their ability to effectively manage their time is their inability to organize themselves and/or groupmates adequately. Importantly, his valuable information provided insight into the validity of a Work My Way as a sustainable product, suggesting that there was a viable college market for such a resource offering personalized suggestions for organizational and time management tools.

When asked how they are working towards managing their time more efficiently, many participants said that they have tried different websites, apps, or resources to better organize themselves, but often a significant amount of time was spent searching for the right resource. Additionally, participants noted that some of the resources that they found were not very helpful to them, and it was easier to do the work without using that resource at all. The team interpreted this information as time which could be better used on the work itself; Work My Way must fill the role of connecting individuals to resources which are compatible with their personal work methods and learning style. Overall, clear navigation, organization, design, and accessibility

features must be implemented to ensure that users spend minimal time discovering the right tool for their work.

Furthermore, the team learned that students often find it easy to locate general information about what they are trying to learn, but it can be difficult to efficiently find detailed and specific information on a sub-area of a subject, perhaps due to poor organization of help resources. Distraction was frequently cited as a challenge for the students interviewed, so finding resources that are engaging and interesting is also beneficial. When we discovered this, the team determined that the inclusion of a user feedback feature on the Work My Way website could be a meaningful way to let users recommend resources that they found useful, which would impact the relevancy score for a tool. Additionally, such a feature would improve user engagement and emotional investment in Work My Way by including them in a supportive and contributing community of users. Broadly, the team found that efficiency is critical to WPI students, and because of this, a resource that helps them efficiently find tools effective for their specific needs would likely have a sizable user base at WPI.

In assessing the viability of WPI as a market for Work My Way, the team concluded that there was indeed demand. Certain attributes were particularly important to the participants, such as ensuring an efficient use of their time, suggestion of tools well-suited to their needs, engaging format and tools, and superior organization and navigability. When asked if they would be interested in a tool to help them improve their time management, the team received a very positive response. In this way, via the process of market validation through focus group testing, it was determined that there was a need for Work My Way. Through multiple iterations of the product, the team referred to the initial feedback collected during Stage 0.

Stage I: Preliminary Logo and Wireframe Feedback

The format of the Stage I focus groups consisted of 15-minute interviews with small groups of students from WPI. Ultimately, the objective was to initiate guided discussion about logo and the first set of wireframe mockups with the participants, whereby user-motivated revisions could be made before implementing a final design for the Work My Way website. It was readily apparent that participants had some difficulty deriving meaning and significance or intent from the original logo. However, the mockups were more self-explanatory and less abstract; a variety of user information was derived from the ensuing interview. Please refer to Appendix F for a list of questions asked in Stage I.
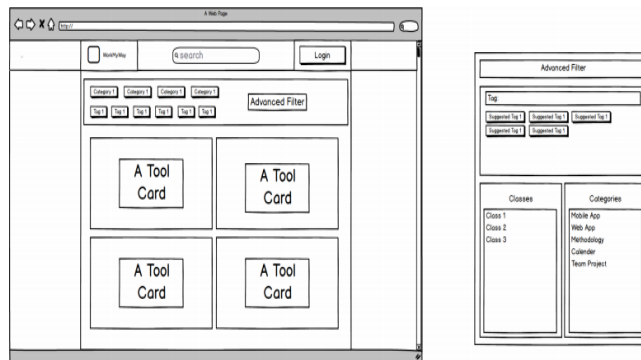

Figure 1: the main page

When shown the main page of the site, the feature that stood out to the majority of the group was that you can choose a category for what you're looking for. Some also said that we need to change the names of some features, such as "tool card", so that it is more obvious what they are, as there was some confusion about the significance and meaning of this phrase.
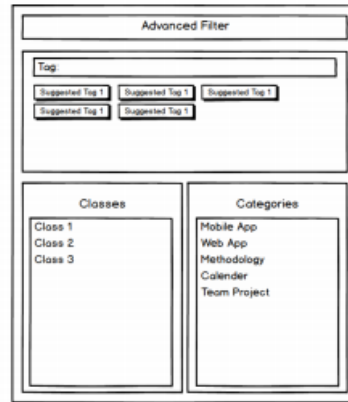
Figure 2: the Filter page

On the "Filter" page, there was initial disorientation about how to use each of the three panes, what each pane was, and what this feature would do for them. Most students noted after becoming more adjusted to the filter screen that there are three ways of filtering (class, tags, and categories), and thought that was a good set up. A small number of participants, each of whom had taken classes in human-computer interaction, interface design, and the like, stated that this was a poor interface design and its functionality was simply unclear and, even once explained, it was evident that this was not a user-friendly or accessible approach to filtering or organization. One such individual suggested a more visual, icon-based approach, or eliminating the use of standard filtering altogether, since a large list of tags can overwhelm users.
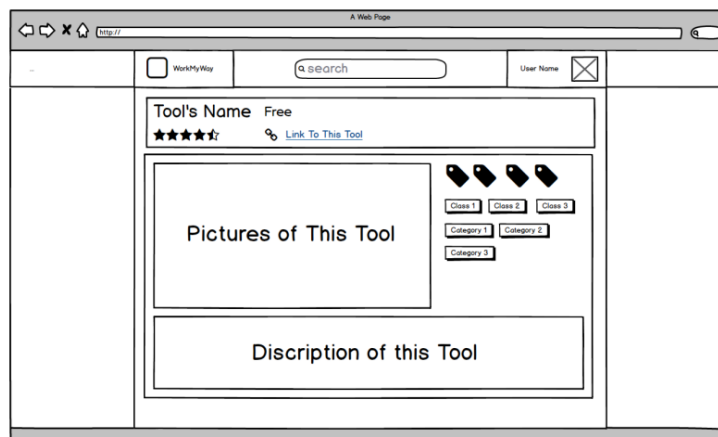

Figure 3: Tool Detail page

When shown the "Tool Detail" page, participants first noticed the links, pictures, and ratings, and then noticed the description area. They generally appreciated that the page stated whether the resource was free or not, and they also thought that the layout was logically organized and familiar to other websites they had encountered. They liked the aspect of user review as well, because it would allow them to assess broad opinion of the tool and decide if it would be a good fit for them.
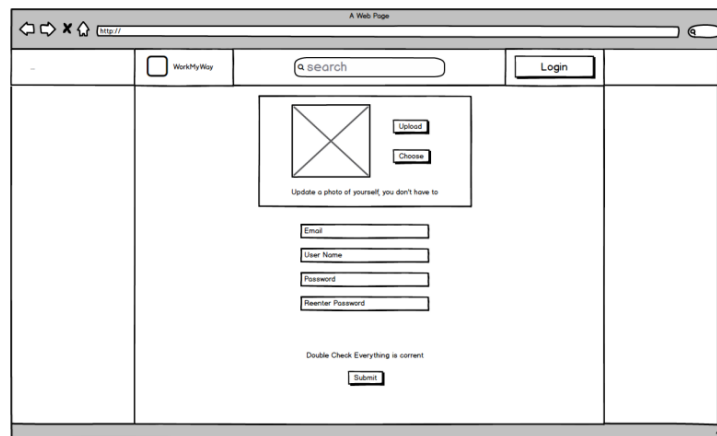

Figure 4: the Sign Up page

On the "Sign Up" page, they pointed out that the term "user name" was a bit ambiguous. It was suggested that it should be more clear whether users should use their email or user name when logging in subsequently. They also informed us that we should change the placement of the photo upload. We were told that the option for resetting the picture should be more obvious on the "Account Settings" page.
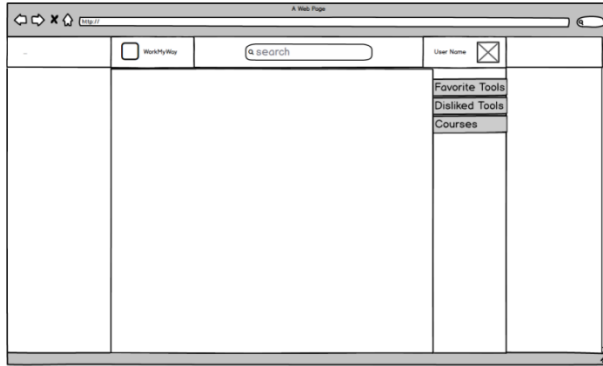
Figure 5: the dashboard

Finally, on the dash board, it was requested that there not be a "dislike" tool, as that is not generally helpful. A few participants were also unsure what was meant by "courses" (did this refer to course numbers, subjects, or majors?). It was requested that we show more examples on our mockup, because they were unsure what other content would be on this page. Insightfully, the students mentioned earlier who had done work with user interface design agreed that the tab system on the right-hand-side of the page was not recognizable as a tab navigation system, nor was this consistent with the rest of the site's navigation scheme. They suggested that this format be changed to more instances of the tile-based layout.

Stage II: Further Mock-Up Testing

In Stage II, focus groups similar to those in Stage I were facilitated. Please refer to Appendix F, Stage I, for a list of questions representative of the questions asked in Stage II. Feedback was gained on the updated mock-ups, guiding the team in creating a website motivated by user preference.
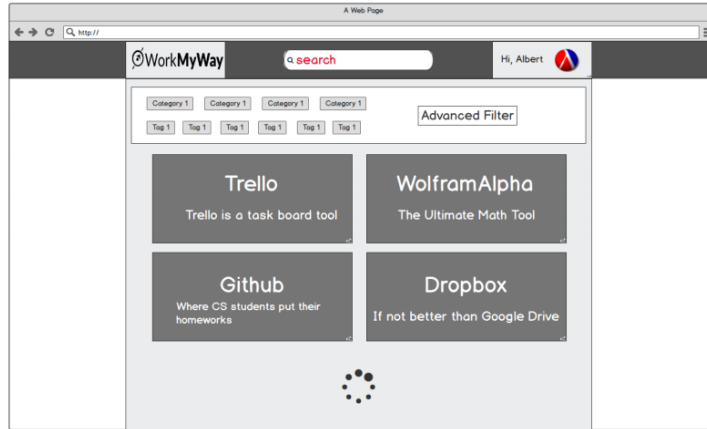
Figure 6: the updated main page

When shown the default page, multiple participants noted that the page's layout was simple and a couple of individuals added that the visual focus was on the dark gray tool cards, as the team intended. This was important to us because we aim to help students become more efficient, and implementing easy navigation will streamline this process. Participants appreciated that the cards show the resource name, as well as a brief description. Similar to previous filter feedback, several participants were not sure what the "category" and "tag" boxes at the top mean, but when it was explained that those are a way to filter the list of resources to one category or tag, they liked the idea of it and preferred this application of filtering to a complex filtering screen.
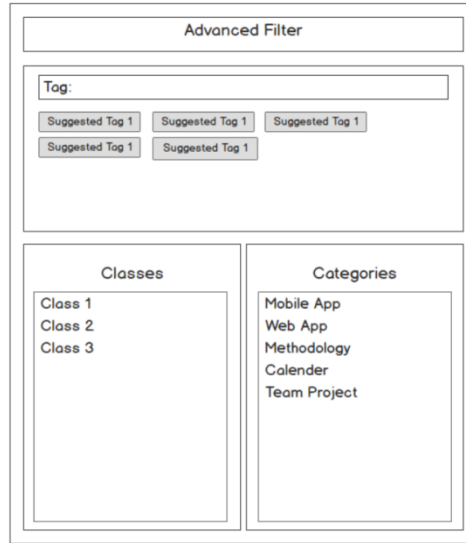
Figure 6: the updated filter page

When shown the filter page, many liked that the user could decide what platform the resource was intended for (mobile app, web app, etc.), and that help was available with areas other than specific coursework, such as time management or team project organization. They weren't sure what we meant by "class" or "tag", and said that it would be helpful to have a description of what each of those meant somewhere on the page, such as under the title. They also wanted to know if they would be able to filter out multiple fields, or just individually. It was suggested that they be able to sort the resources by "most useful", so that they can know what works best for other users. Since we want this site to be extremely easy to navigate, it is helpful to know what potential users think we should add to allow for this.
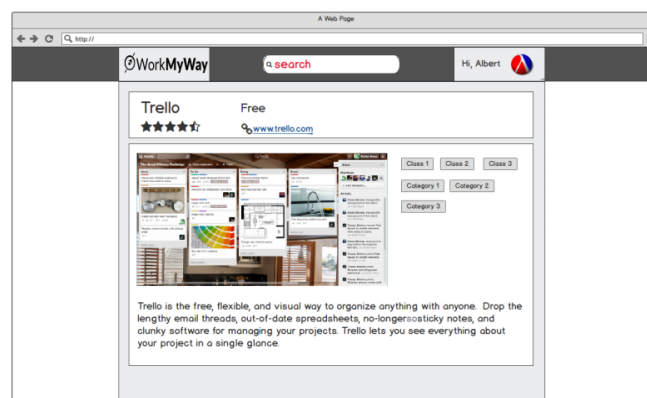
Figure 7: the updated tool detail page

On the tool page, the focus group told us that they liked the idea of being able to see what tags and categories are listed for a resource is helpful, because then they could get ideas of what else they could use these resources for. For example, if they are using a tool such as Trello to aid in time management, they could see that it may also be useful for group projects. One thing that was suggested was the idea that instead of putting a picture or video demonstrating what the tool looks like, we should put a slideshow of a few key pictures so that they get an idea of its functionality. When the possibility of adding a video to the pictures pane was addressed, the majority said that, in the interest of time, they would probably not view it. There was again general approval for the rating system, as a way to determine peer opinion on a tool's best use and overall effectiveness.
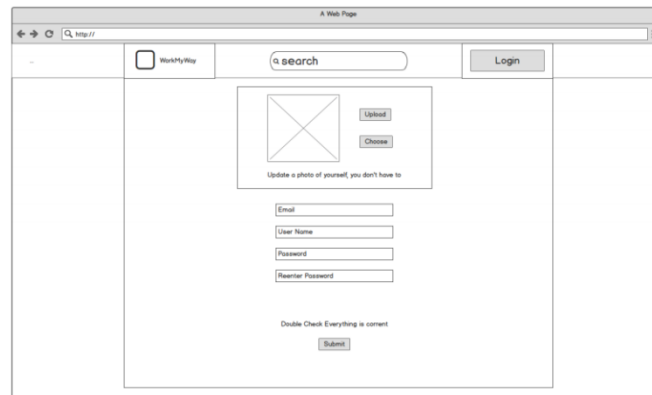

Figure 8: the updated Sign Up page

Some participants who had experience in user interface design suggested that we make the site compatible with other WPI logins, so that students can use the same login information. This sounds like a good idea, but because a long-term goal for this project is to broaden the market to other colleges and perhaps to professionals, implementing such a system may not be a worthwhile endeavor long-term. Instead, the team posited the idea of using a Google or

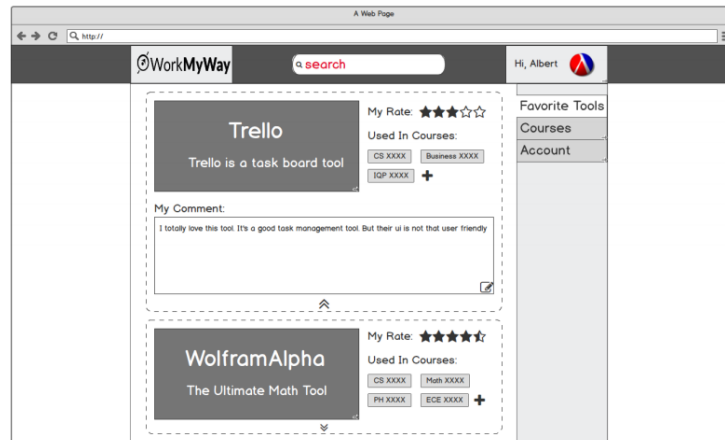Facebook universal log in. The focus group generally the simplicity and straightforwardness of this page.

Figure 9: the dashboard favorite tools page

When shown the favorite tools page, the group was intrigued by the detailed review system. They appreciated that users would be able to comment on resources that they have tried. The tool descriptions of use cases seemed beneficial, verified the participants. One thing that was suggested was that the team relocate the ribbon to the left side of the page rather than the right, because many of them did not notice it until it had been indicated by the interviewer.

Figure 10: the dashboard courses page

The group seemed to see significant potential for the concepts behind this page, but there was initial confusion over what information was being presented. They liked the idea of being able to see what the user has searched for recently, and very much appreciated the possible

implementation of search-based suggestions. The visual nature of the pic chart representation of common use cases for a tool seemed to appeal to most participants, especially because it is simple to interpret at a glance.

Overall, it was requested that we include a page to allow users to suggest resources that are not on our website, which would be an excellent approach to further increasing user engagement, suggestions, and feedback in the product. Lastly, it should be noted that the team brainstormed with the advisors about how to design a comprehensive way to reduce user confusion about essential features, and create a simple guide to effective site usage. The result of this series of discussions was the possibility of providing the user with the option to view a brief walkthrough of features and site navigation when they access the site initially. Concerns were raised about how this should be optional and unobtrusive, pitfalls of many websites which often repel and frustrate users. When this feature is added, thought will be given on how to best mitigate this issue, and there will be a link on the Account page so that users may replay the walkthrough.

Next Steps

Future contributions to Work My Way will focus on business and technical development with an emphasis on producing valuable academic insights. Business efforts will focus primarily on establishing a more succinct marketing plan and becoming financially sustainable. Specifically, the marketing plan will involve three primary stages: 1) pilot program with a focus on utilizing the Office of Disability Services' market reach, as well as organic promotion through social media; 2) use of the WPI First Year Experience (FYE) program, since Work My Way is already aligned with the program's goal of enabling students to successfully transition to college;

3) general promotion at WPI through the collaboration with campus-wide events sponsored by the Office of Disability Services and other organizations that are aligned with our mission.

Financial sustainability is another future objective of Work My Way. While the project is currently sponsored by the Office of Disability Services, this year's IQP team recognizes the need to explore new monetization options that will enable Work My Way to scale sustainably. Work My Way has researched and considered opportunities to collect and broker data, since the data likely has considerable value to advertisers, but other models should be investigated.

Technical innovation will be a major component of future effort with Work My Way. Subsequent teams should focus on refining the user interface and user experience, especially by adhering to the principle of universal design and the design criteria recommended by Apple for Mac OS X. In addition, effort should be placed on implementing social functionality, that allows users to share how they work and see how others work; all social functionality should be opt-in and with anonymity features to allow users to have greater privacy. Workflow management is a similar but disparate capability that should be implemented, allowing for AI-driven suggestions helping a user to better understand how they can work most efficiently and effectively. Moreover, data collection should be implemented to collect direct and explicit user data, as well as indirect and implicit data about the site's users, such as demographics information.

Academically, there are several opportunities to develop rich insights into how students think and work by analyzing the data produced on Work My Way. This information has the potential to be valuable in economics, psychology, and marketing among other areas. It also provides insightful data for creating and enhancing models for the site's artificial intelligence and machine learning components.

Conclusion

Work My Way went through a pivotal year where it shifted from being a directory of resources for students with learning disabilities to a service that enables all students to discover how they work while connecting them with tools that help them work most efficiently and effectively. Based on research we conducted throughout the project, we affirmed the need for a service that helps students discover which tools work best for them in an academic setting. During the 2015-2016 IQP project, we conducted several focus groups to validate the idea and iteratively improve the design of our service.

We also identified the lack of similar projects in higher education, especially with regard to students with learning disabilities. While our initial target market was students with learning disabilities, the IQP team decided to generalize our efforts to include all college students since there is a strong stigma associated with learning disabilities and associated assistive technologies.

As a result, the Work My Way team decided to emphasize improvement rather than remediation, enabling us to achieve our original goal without the risk of stigma and while broadening the service's viability beyond the original target population. The change in positioning addresses two core realities of our service: students with learning disabilities avoid resources that could bring them unwanted attention or stigma; and many students in the broader undergraduate population at WPI are already searching for technologies that help them to excel academically.

Learning Outcomes

One core objective of the Interactive Qualifying Project program at WPI is to develop team-based collaboration skills within the context of an academic endeavor. The Work My Way

IQP team successfully achieved these goals by constructing a team dynamic where each person specialized in a specific aspect of the project and became responsible for completing that aspect of the work. Also, we each took opportunities to mentor and instruct other members in areas that the mentor had experience in.

We differentiated ourselves by instituting a product manager who took responsibility for guiding the project's direction while serving as an intermediary between the technical, academic and business efforts. The product manager was also responsible for facilitating communication between all the stakeholders, ensuring technical efforts were matched with appropriate business justifications. Moreover, the product manager empowered the team to implement the Lean methodology along with the Scrum project management approach.

The project team quickly prototyped new features, performed timely user testing, and modified the product according to the feedback received. This enabled us to maintain a stakeholder feedback loop that helped us to continually improve the design for Work My Way, while being receptive to specific needs and constraints of students, advisors, sponsors and other stakeholders. We also focused on lightweight conceptual prototypes which enabled us to rapidly test new design approaches and ideas for the website.

Personal Outcomes

As a project, Work My Way has given each team member valuable experience with defining problems and developing solutions. It has also given members contextual awareness of the broader impact on academia, industry, and humanity when engaging in such project endeavors. In addition, each team member achieved their own set of accomplishments and discoveries through the project.

Ellyn

At the beginning of this project, I was interested in this topic, but I was more interested in getting an IQP project. I currently work in the Office of Disability Services, and my boss told me about the project and invited me to join it. When researching the implications of this project and its effect on students with disabilities, it became apparent to me that not having a resource such as Work My Way was detrimental to many students. This made me appreciate what we were doing more, and made me more passionate about this topic. When we decided to separate from the ODS, and make this a resource for all students, I was relieved. I believe that if this website was made for the ODS, and was too closely associated with them, there would be a stigma associated with it as well, and that would make students less likely to use it. I really appreciate this project, because it is something that I feel will greatly impact the WPI community as a whole, and it is something I am proud of. I cannot wait to have the site up and running so that I can introduce it to others and, hopefully, help the WPI community to reach our fullest potential as students.

Xuanzhe

The first thing that attracted me to this project is the topic, the idea that building something to help students on their learning. The most challenging part of this project is to become a self-driven member. Doing multiple tasks in a small team is very challenging. It requires me to communicate with team members and advisors efficiently, follow the progress actively and sometimes lead the progress if necessary. I also learned a lot about business planning and marketing during this project. I really think a crossing discipline project with social values like this is an important part of my WPI education.

Ryan

My initial interest in Work My Way stemmed from my personal challenges with effective learning, especially in the collegiate environment, as well as my insatiable desire to find more

efficient ways of getting work done. One of the most rewarding aspects of the project was the ability to transform a simple directory resource - a website with reviews and information about academic resources - into a prototype for a product. Given my previous product management experience and continued interest in creating products with impact, this project has enabled me to test my skills and apply them to a "real world problem" facing students like myself. I look forward to my continued involvement with Work My Way.

Hanne

At the IQP fair during my Sophomore year, the Work My Way project stood out to me as a uniquely student-driven effort to improve the learning process for all WPI students regardless of ability level. As the project progressed, our efforts became even more focused on making Work My Way a universal resource for both students and professionals. The most exciting aspect of this project was how it went from a limited-impact effort to improve student efficacy at WPI to a far-reaching endeavor grounded in personalized workflow optimization for motivated individuals of all levels. Never before have I had the opportunity to get involved in such a meaningful project which truly pushed me to learn and expand my knowledge base. Personally, the greatest challenge of this project was balancing my investment in the idea, goals for the project, and motivation to turn it into a sustainable product with the limited timeframe and requirements of an IQP. I have genuinely enjoyed participating in creating and implementing a vision for Work My Way, and I immensely look forward to seeing how the next stages will unfold.

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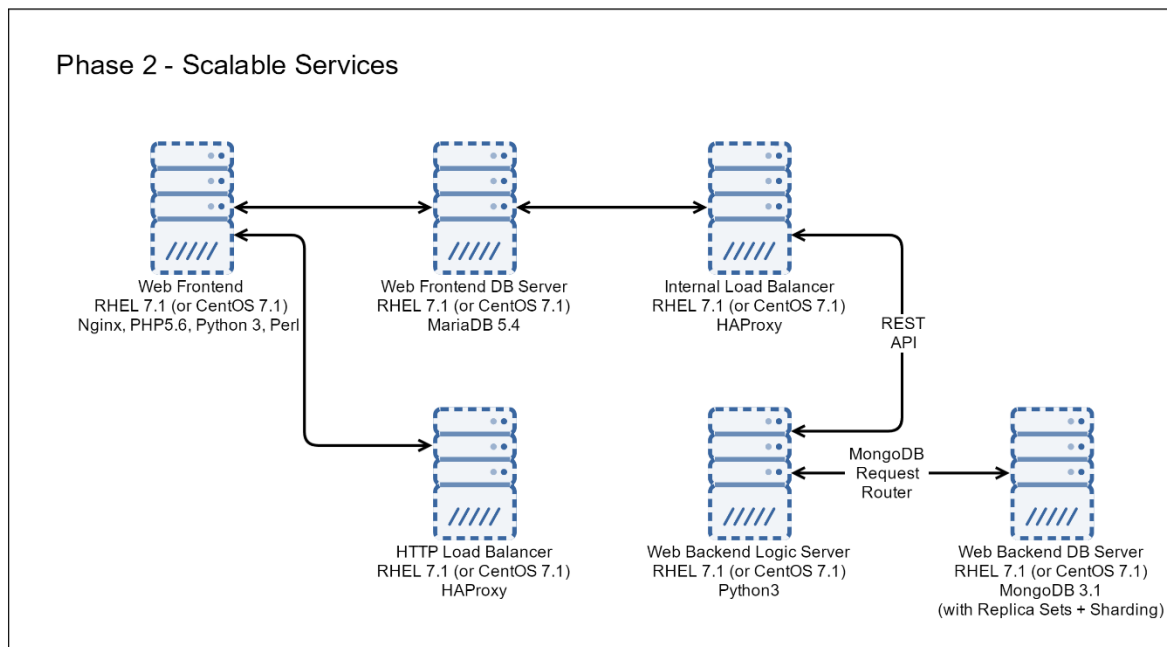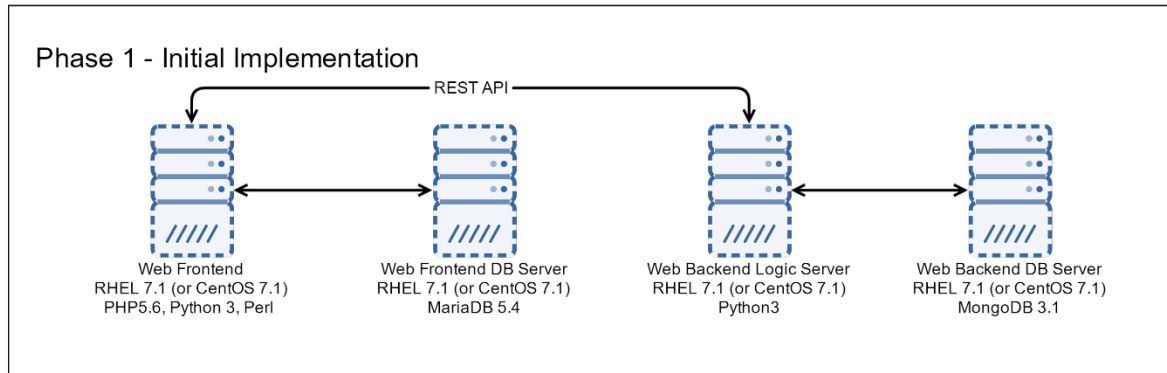WPI. (n.d.). *Office of Disability Services*. Retrieved from Worcester Polytechnic Institute.

Appendix A – Design Specification

(The following appendix was captured from a design specification created in November 2015 and may not reflect the latest updates to the website. It is included as-is for demonstration purposes. The abstract and Table of Contents have been omitted.)

This design specification is a living design document with information about the service architecture, interface, and HCI elements. It is intended to provide general implementation guidelines for implementing Work My Way, but it should not be considered complete or authoritative. Instead, it is intended to complement other design documents during the Software Development Lifecycle (SDLC) for Work My Way.

Server Configuration

Phase 1 - Initial Implementation

REST API

Web Frontend
RHEL 7.1 (or CentOS 7.1)
PHP5.6, Python 3, Perl

Web Frontend DB Server
RHEL 7.1 (or CentOS 7.1)
MariaDB 5.4

Web Backend Logic Server
RHEL 7.1 (or CentOS 7.1)
Python3

Web Backend DB Server
RHEL 7.1 (or CentOS 7.1)
MongoDB 3.1

Phase 2 - Scalable Services

Web Frontend
RHEL 7.1 (or CentOS 7.1)
Nginx, PHP5.6, Python 3, Perl

Web Frontend DB Server
RHEL 7.1 (or CentOS 7.1)
MariaDB 5.4

Internal Load Balancer
RHEL 7.1 (or CentOS 7.1)
HAProxy

REST API

HTTP Load Balancer
RHEL 7.1 (or CentOS 7.1)
HAProxy

Web Backend Logic Server
RHEL 7.1 (or CentOS 7.1)
Python3

MongoDB Request Router

Web Backend DB Server
RHEL 7.1 (or CentOS 7.1)
MongoDB 3.1
(with Replica Sets + Sharding)

The second phase is a distributed, scalable solution that reflects an expected site architecture once the site becomes popular. In particular, load balancers are used at the front-end where user's access the site and internally to help balance the load for requests to the site's logic. User data can grow at a rate of $O(n^2)$ or more aggressively, depending on the amount of information collected about the user. This data is stored in the "Web Backend DB Server," which

is a JSON-based Document Object Model (DOM) database that supports sharding and replica

sets. For the purpose of clarity, *sharding* is the splitting of database entries across multiple

servers, in order to make scaling out the database easy. The other configuration requirement,

replica sets allow for high availability and improved performance of the service; if one or more

machines go down, the service can remain operational during this outage. Both sharding and

replica sets are transparent to the developer, so it is possible to access data without understanding

the underlying infrastructure.

Physical Hardware

Any modern server should be able to handle an instance of the site. For the "Phase 2"

implementation, each replica set, web server, and logic server should be placed on separate

physical hosts, in order to provide the required availability and reliability guarantees.

Virtualization Environment

Any virtualization environment, including vSphere, ESXi, KVM, Xen, or Hyper-V, can

be used to run an instance of the site, provided the hypervisor supports Red Hat Enterprise Linux

or CentOS.

Containerization Environment

One unique requirement for this site's implementation is that each role should be

separated from each other, in order to provide improved portability and security. A container

environment, such as Docker, should be employed to create a separate container for each of the

envisaged roles.

Importantly, running all of the services on a single host without any form of isolation,

whether through containers or through separate virtual machines, adds undue reliability and

security risk; if any of the services cause a system failure or have a security vulnerability, the

entire site could be compromised. Also, containers help to encapsulated all of the necessary

system software and packages that are required to run each of the roles; this helps to improve the

maintainability of the site, by eliminating the concern of incompatible system software breaking

necessary services, like the database software.

Load Balancers

If the site is popular, or high availability is important, load balancers can provide a way

of managing the incoming user traffic and allowing it to be routed to separate machines where

the request can be handled appropriately. HAProxy is a common and popular free load balancing

proxy that makes it possible to distribute the site load across multiple hosts.

Operating System

The preferred operating system is Red Hat Enterprise Linux 7.1 or CentOS 7.1. This

operating system provides the necessary flexibility, performance, reliability and security

necessary for the proper operation of the website. Importantly, it runs a modern version of the

Linux kernel, which is required for running Docker containers on the virtual server.

In terms of specific Linux distribution, Red Hat Enterprise Linux was chosen because of

its long support cycles of approximately 10 years from release, as well as its conservative update

schedule. CentOS provides many of the same benefits as RHEL, except it is provided without

any form of professional technical support. In most cases, CentOS is a sufficient substitute for

RHEL, especially since CentOS is an officially sanctioned Red Hat Enterprise Linux clone.

Security

The Work My Way website may store confidential information about users and may

collect personally identifiable information. It also will store user credentials, unless the user opts

to login via a social network. As a result, security is an essential building block of the site's

design.

Website

As a minimum, all traffic between the site and user should be protected using a TLS 1.2

handshake with a AES128-SHA256-ECDHE ciphersuite; this ciphersuite is vendored into RHEL

7.1 and many other Linux distributions. OpenSSL or a comparable tool should be used to encapsulate the traffic between the user and the server. The implementer may want to consider also configuring OpenSSL to use Forward Secrecy in order to improve site privacy.

Database Server

The following recommendations are made for securing the MariaDB and MongoDB databases:

- Limit connections to only the IPs of the corresponding web or logic servers.

- Require a cryptographic key, such as an RSA key, for connecting to the server.

- Encrypt the connections between the servers

User Stories and Personas

The following section provides common user stories to help explain the functionality of the site. It is intended to be a baseline for design, development and testing of the site's functionality.

Normal WPI Student
Below is an example of a normal WPI student, Gompei Goat. Gompei is a student in CS3733 and is looking for a great diagramming tool to help him design his software. The following example illustrates the involved steps and resources that are involved in his interaction with the site.

Process Flow

Start → User Login → Present user dashboard. → USER: Go to Resource Finder → Show Resource Splash Page → USER: Click on "Classes" → Show Class Categories and Search

Cache — Request categories.

Get user profile and relevant personalization variables.

(JSON) User Profiles

USER: Begin typing in "CS3733" → Return relevant class. → USER: Selects CS3733 → Resource Lookup

Lookup all resources tagged with "CS3733"

(SQL) Site Data

USER: Type "diagram" → IN-BROWSER: Narrow down resources with the tag "diagram" → Return Resource Data → End

Walkthrough of Process

In the above process flow, our user starts off by logging into their account, either via social media or an email-password combination. Once they've logged in, they're presented with a dashboard with information that is specific to them. In this example, our user is looking for a diagramming tool for their CS3733 course. They begin by exploring what types of information can be used to find resources – in this case, they settle on starting off with a class search. They look for "CS3733" and select the course. Next, the user searches for the term "diagram" and related diagramming tools are presented; tools are presented by the relevancy to the course. In cases where no tools have been specifically associated with the course, any diagramming tool is displayed. Finally, the user selects a specific tool and views the page with information about the tool.

User Login

The diagram below illustrates the process of handling a user login. At the beginning, the user is prompted to select between an email-password entry and a social email login, as is depicted below. In the final rendition, the buttons for social login will be replaced by an appropriate button from each provider.

User Login
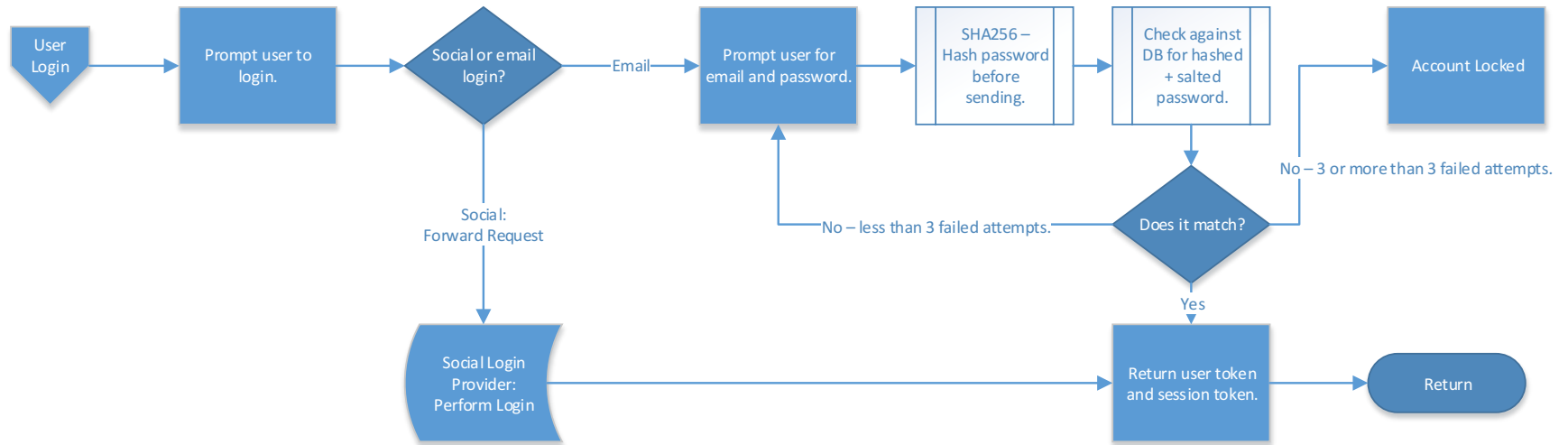
At this point, the user can choose between either of the options:

- Social login – provided by an API offered by the social service, such as Facebook or Twitter. If a user selects this method, then they will authenticate with the social network directly and an associated session token will be returned for granting the user access to their content.

- Email-password login – this is managed internally using a local database. All usernames and passwords should be salted and hashed using the SHA256 algorithm. The user can also login using their WPI login credentials, which is then forwarded to CAS for securely logging them in.

Resource Lookup Process
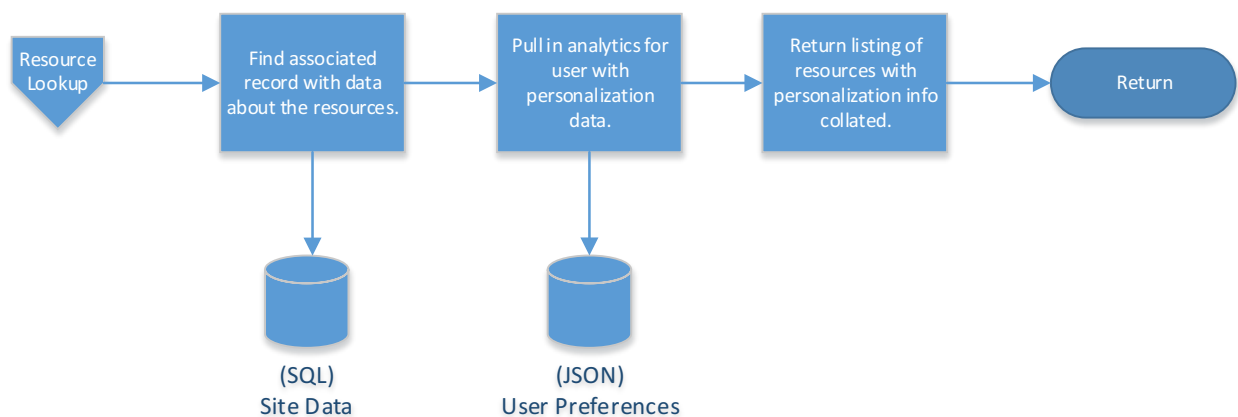
Return Resource Data Process
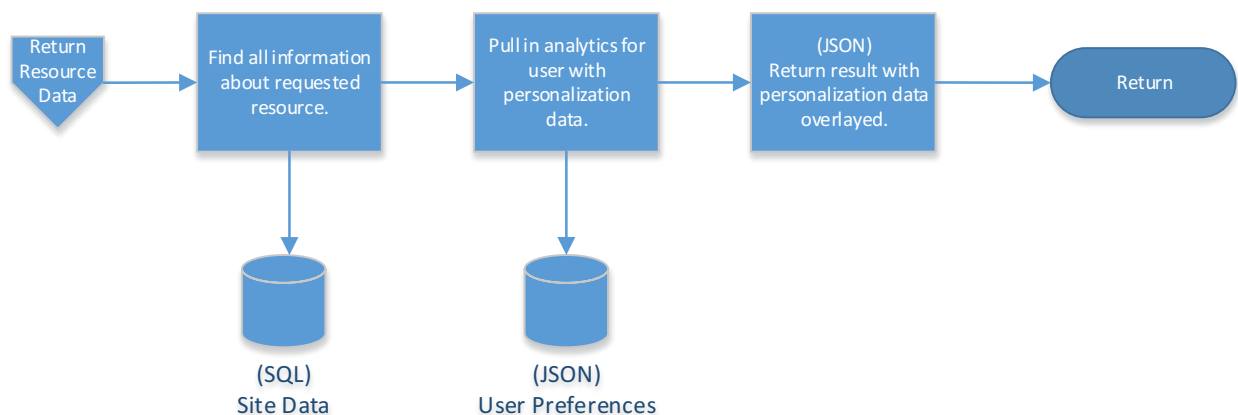
Data Organization

In general, two types of data are generated and stored by Work My Way. The first is general site content data, which includes the individual entries for each resource and the corresponding organization of content on the site. The other type of data is user personalization data, which includes analytics, user-generated content, survey data, and user profiles.

Database Configuration

Database Name	Type of DB	Description
Site Content	RBDMS – SQL	Stores all of the CMS content and generic site data. This is required for running any CMS system, including WordPress, Drupal, or Joomla.
User Login Data	RBDMS – SQL	Secure storage of the user login and password credentials. All passwords are stored hashed with SHA256 and salted.
User Profiles	DOM – JSON	Stores profile data with basic information about the user, their personalization profile, and basic user-submitted information.
User Preferences / Analytics	DOM – JSON	This database stores information about how users interact with the site, which resources are recommended for them, and data to help drive a personalization model.

Inferred Data and Preferences

Much of the data collected and generated by Work My Way is user submitted information that is collected via surveys and other formal interactions with the website. However, some information about the user can be inferred. The inferred data can be used to help our website be more applicable to the end-user, as it can provide a level of customization without requiring user interaction. Specifically, the following types of information can be inferred:

Data	Source	Benefit
User ISP	IP Address	Allows the website to provide a custom experience for people connecting from specific IP addresses. For example, a student connecting from WPI's campus can be shown WPI-specific information, such as the availability of a specific resource for WPI students.
Operating System	User Agent	Allows the website to tailor recommendations to the operating system which the user is visiting the website from.
Language	User Agent	If the site becomes internationalized at any point, this can be an easy way to display the site in the user's default language.
Access Frequency	Custom – Analytics	Allows resources that are "popular" generally or are commonly looked at by a user to be shown more prominently.
Reading Level	Custom – Analytics	Based on the way the user writes, site content could be tailored to their reading level.

Explicit Data and Preferences

Some data is collected explicitly, through incidental and formal interactions with the website. At a bare minimum, users start off their experience with the website by visiting a quick survey that helps the site to better understand their personality, learning style, and preferences. Additional data is collected while the user interacts with the website, in order to provide a more relevant experience to the user.

The specific methodology for collecting this information should be based on extensive usability testing, since extensive interaction with the website could inhibit successful use of the site.

Data	Source	Description
Learning Type	Survey	Allows user to select their learning type from: auditory, visual, kinesthetic, textual, graphical.
Myers-Briggs	Incidental	Allows users to volunteer their Myers-Briggs personality type.
Favorite Resources	Survey	Similar to how Twitter asks you to follow a few people during the creation of a new account, WMW would ask users to enumerate their favorite resources that they already use.

Future Implementation Ideas

The following is a list of possible ideas for expanding the website, its functionality and its reach. In addition, possibilities for monetization are explored.

- **Social features** – users could create profiles with their favorite resources, the way they work (see http://lifehacker.com/tag/how-i-work for examples), and other information about themselves.

- **Adaptive analytics –** the more a user interacts with the website, the more data about that user is generated. This could help to drive more effective models about users throughout the time of their interaction with the site.

- **Gamification of the site –** getting users to voluntarily complete surveys may be an unattainable objective, given the relatively short attention span of most Internet users today. If WMW collected this information through game-like interactions with the site, this could help reduce the friction of getting users to interact with the site and submit data.

- **Improved accessibility –** the site could provide multiple ways to consume the same information, such as text, audio, video and interactive content.

- **Group needs analysis –** some resources may be used by a group rather than for an individual. In these types of cases, it may be beneficial to provide recommendations for group tools, based on consensus of which tools are effective for the largest number of people.

- **Access for other universities –** some of the content is tailored towards WPI students, such as searching for resources based on a class. This could be expanded to other schools, to provide students in other institutions the same degree of search capability.

- END OF DESIGN SPECIFICATION

Appendix B – Lean Business Model Canvas

The Lean Business Model Canvas is used to visualize and understand the Work My Way business model. We utilized the business model canvas to better:

- Identify major problems that students face with finding resources.

- Describe solutions to identified problems.

- Establish specific metrics that will help us evaluate the success of our model.

- Evaluate costs involved in delivering Work My Way.

- Explore revenue streams with the purpose of long-term financial sustainability.

- Explicate the unique value that Work My Way has and how the project is relevant to bring it to fruition.

- Provide information on who our audience is and how we can reach them.

While Work My Way is not expected to become its own business entity, the Work My Way project team recognizes the importance of understanding and defining all aspects of developing a successful business model around the product. This is essential to the longevity of the project, especially if it gains popularity outside of the WPI market.

Please see the next page for the original Business Model Canvas that was drawn in Google Draw on December 6th, 2015. This canvas is intended for use by subsequent project teams as they continue to refine and iterate on the business model for Work My Way.

The Business Model Canvas

Problem
top 3 problems

- Not knowing where to find / existence of specific resources.
- Stigma or Hesitation to ask for help
- Hard to figure out what set of tools are most useful to you.

Solution

- Catalog / logical organization + navigation of resources.
- Focus on improvement, not remediation.
- Personalization / Recommendation Engine

Key metrics
key activities you measure

- User engagement, retention, conversion
- User satisfaction: survey-based feedback and ODS reports

Unique value proposition
single, clean, compelling message that states why you are different and worth buying

WMW enables students to discover the way they work best, promoting success in college and beyond.

Unfair advantage
can't be easily copied or bought

- First Mover Advantage
- Bootstrapped
- Existing Community
- Student-driven

Channels
path to customers

- ODS, ARC, Academic Advising
- WOM / Social Media
- First Year Program
- WPI Faculty

Customer Segments
target customers

- WPI students
- College students

Cost Structure

- Advisor Fees
- Moderation + Curation - Work Study Person
- Computing Resources (servers / etc)
- Site development / maintenance
- Licensing costs
- Marketing & Sales

Revenue Streams

- Data Brokering
- (Advertising)

Appendix C – Initial Mockups

Prior to the mockups produced for end-user testing, several proof of concept mockups were produced to demonstrate the site's functionality and overall design criteria. While these mockups were not used for focus groups, they served as a valuable initial iteration that was illustrative of how the site should function and how it should be presented to end users. More specifically, it enabled several conversations about the site's navigation, presentation of information, and general layout. Emphasis was placed on accessibility in these designs, including through the use of a simple color pattern that is color blind accessible.

Resource Description Mockup

The Resource Description provides information about a specific tool or resource on the site. In this iteration, a single numerical score (scale: 1-100%) is provided to gauge the relevancy of the resource to the specific user. The interface also provides information about the

way the tool can be used, compatibility, as well as user contributed reviews.
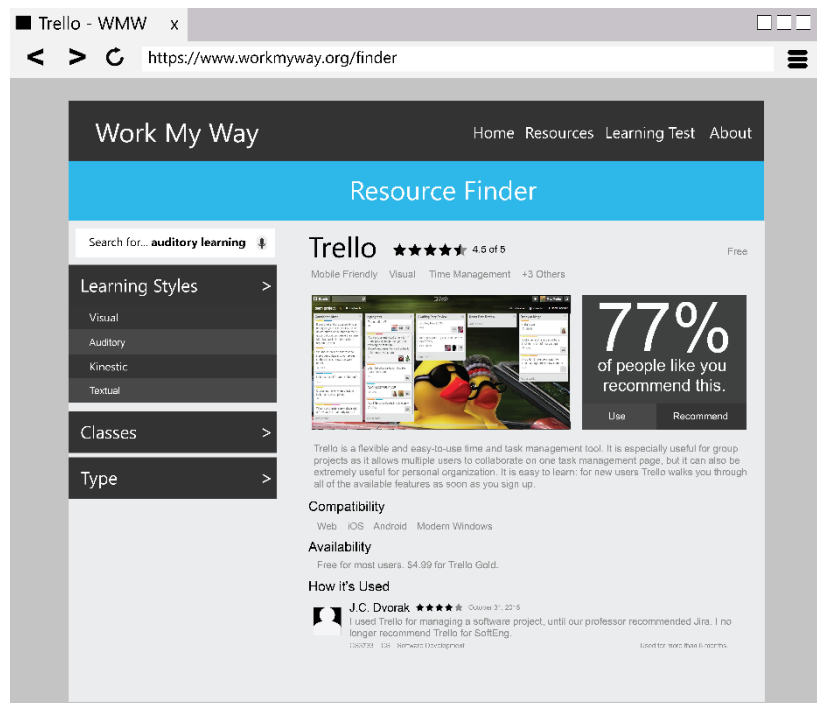
Resource Finder Visualizer Mockup

The Resource Finder Visualizer provides information about specific resources within a category or search criteria. In the depicted example, a user selects the "Learning Styles – Visual" category, which provides all tools that emphasize visual learning. Each resource is scored (scale: 1-100%) and organized by relevance to the user. A screenshot is provided in the panel for each resource, with a semi-transparent overlay that enables easy readability of the content.

Appendix D – Logo and Brand

Prior to the 2015-2016 Work My Way project team, no efforts were made to comprehensively construct a brand identity and logo for the project. Since Work My Way is intended to reach a broad audience across WPI, and potentially, most other institutions of higher education, the project team identified the need to create a brand identity, logo and strategy for the product. By maintaining a strong and consistent brand image, we can effectively achieve our goal of reaching students and fostering a relationship based on trust with both students and professors that interact with Work My Way.

Purpose

Work My Way is a complete rebranding of the past 3 years of effort on a project called "Universal Learning Center." The rebranding effort was initiated after realizing that another institution used the lattermost moniker for a related, but considerably different product; we decided to avoid any name confusion by changing the brand name for the project.

Logo

Our logo (see below) includes both the "Upward Compass" logogram and "WorkMyWay" typeface. The "Upward Compass" logogram depicts a needle on a compass pointing Northeast. The compass logogram implies a metaphor of "finding your way (to academic success)," while the needle points in an upward direction, indicating success.

We selected Lato for "Work" and Lato-Black for "MyWay" in the typeface. The combined use of these two weight fonts in the same font family serves to emphasize the "My

Way" component of the brand name, bringing attention to the fact that Work My Way is focused on helping individuals find their own success. The family also creates the perception of a modern, friendly brand, due to the relatively square corners and lack of serifs.

Identity

Several exercises were performed to derive the team's combined identity and the desired product identity. During these exercises, participants were asked to answer several questions describing Work My Way as if the product were a person. Specifically, the exercise coordinator asked: 1) if Work My Way was a person, how would you describe them; 2) what values do they have; 3) what do they believe in?

By utilizing personification, the exercises enabled team members to think about and explain Work My Way in terms that are natural and familiar to them. As a result, the coordinator was able to ascertain several adjectives describing the persona of the product, while helping the team to better understand the product positioning that was desired.

Results

Many of the adjectives provided by the participants were similar in nature. More generally, participants described Work My Way using variants of the following words:

- Customer Service – helpful, dependable, and clear.

- Personal – accessible, personalization, customization, and friendly.

- Reliable – concise, credible, and honest.

Acceptance, open-mindedness, and community were other desired criteria chosen by the Work My Way team to describe the brand image and personality. Given the origin of this project as a tool for students with learning disabilities, the emphasis on diversity and community

engagement is logical and notable; while Work My Way no longer focuses solely on students with disabilities, they are still a major population that our product is intended to work with to achieve academic success.

Appendix E – Current Website Iteration

At the conclusion of the Work My Way project for the 2015-2016 academic year, the team constructed a Wordpress-based demonstration of the product. This demonstration illustrates some of the basic functionality that the site requires, including specific navigation and organization components, including tagging and categorization. It is still a work in progress and is anticipated to change dramatically in subsequent projects.
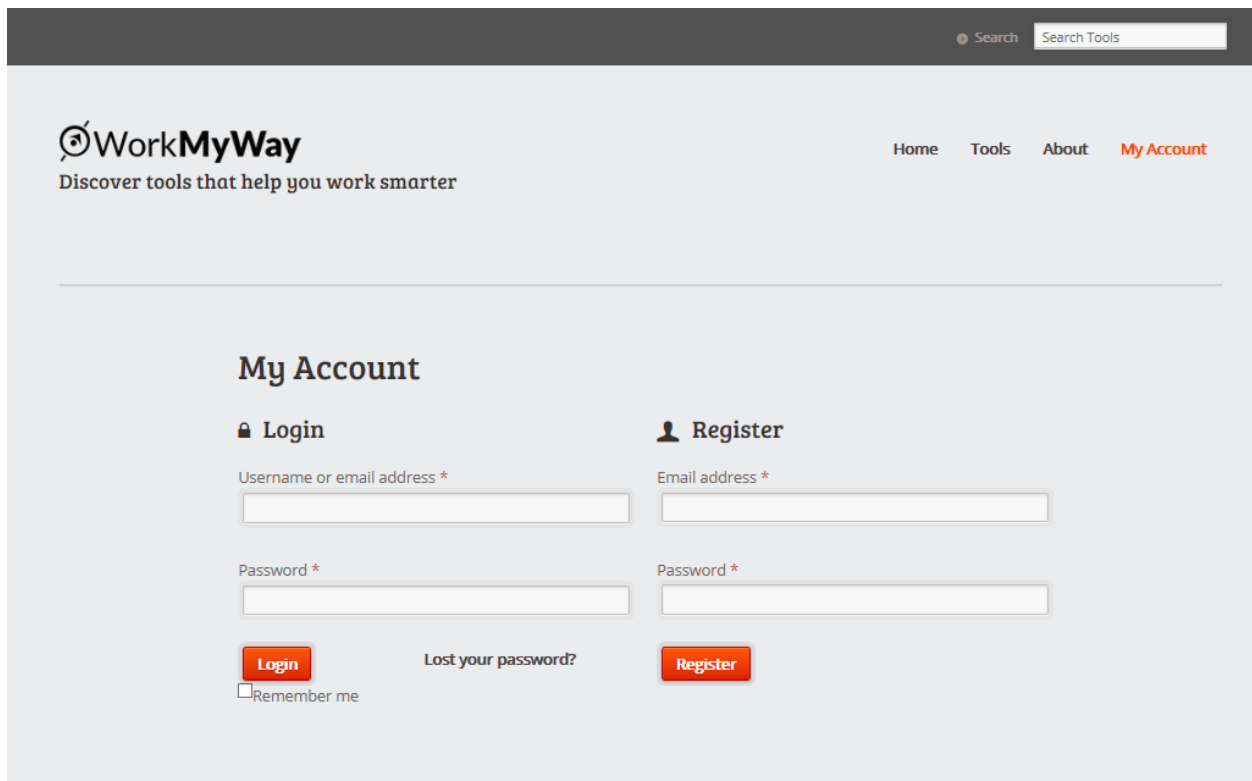
Home

The Work My Way homepage is a basic landing page that will be transformed into a descriptive page explaining the project, its benefits and intended usage. The homepage is envisaged to look like the homepage for Trello, which explains the product and provides more details on its usage.
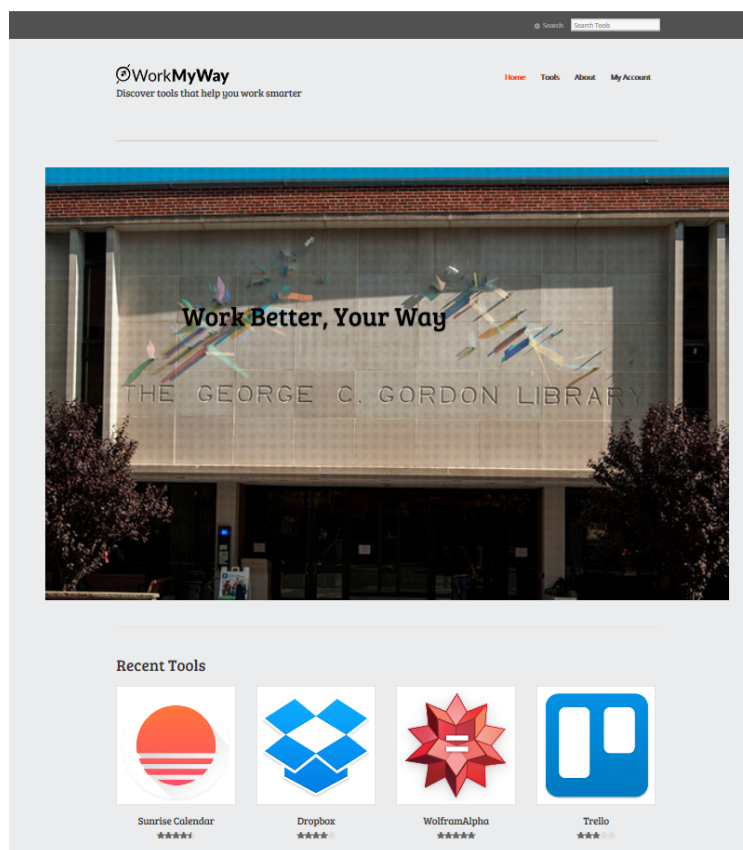
User Login Pane
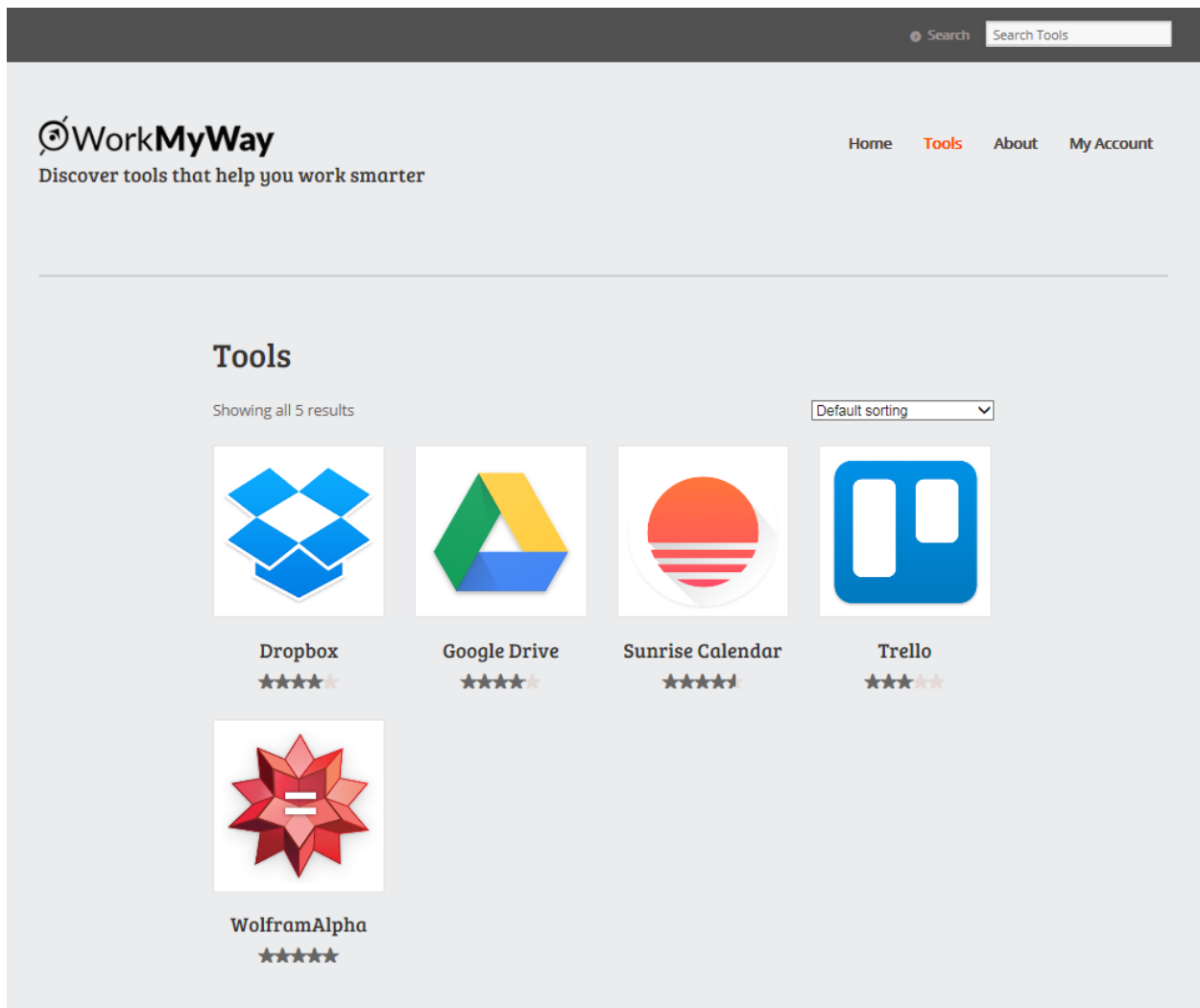
A considerable amount of the functionality of the site is for users that are registered and logged in, especially functionality providing a personalized experience to users. In this iteration, we implemented a basic login and registration page, which relies on username-password authentication; future iterations will support WPI's Central Authentication System identity federation and Single Sign-On service (SSO).

Tool Navigation

Some users come to a site like Work My Way to discover new tools that may help them in a specific aspect of their studies or life. As a result, providing a page where they can see all tools that fit their criteria is an essential component of fulfilling this goal. Users can see this page by selecting the category that fits their needs best or by utilizing the search field on the top of the page.

Tool Details

When a user selects a tool they're interested in, they are provided with a page that provides more information about that tool and its usage. Users of the site can contribute "reviews" where they can share their experience with the tool. Additionally, users can see what "tags" the tool is listed under, allowing them to find other tools that provide similar functionality.

Appendix F – Focus Group Questions

The three stages of Focus Group testing utilized in the creation of this iteration of Work My Way were imperative in guiding the design process for the final deliverable. First and foremost, the feedback received allowed the team to make informed, customer-motivated decisions about how to ensure that the product met the needs of students at WPI. The following documents provide insight into the questions asked of focus group participants in Stages 0, I, and II of testing; please note that the content and objectives of Stages I and II were comparable enough to use similar questions to guide discussion in both cases.

Focus Group 0

Preliminary Questions:

1. On a scale of 1 to 10, please rate how effective you feel you are at managing your time. A rating of 1 is the lowest, and a rating of 10 is the highest.
   a. What are the biggest challenges you face in improving your time management skills?
   b. Are you interested in solutions or tools that can help you to improve your time management?

2. What makes or has made it difficult to seek help?
   a. At WPI?
   b. At work?
   c. Other circumstances?

3. What tools have you found helpful in enabling you to work more efficiently?
   a. Have you spent a lot of time "playing around" with different tools and resources trying to find something useful to you?
   b. Have you noticed any themes or key features between tools that do and do not work for you?

4. Please share the tools that you currently use to keep yourself organized and working effectively.
   a. How did you learn about or find these tools?

5. Do you face any additional obstacles, besides time management, when working or studying?

6. So for these other obstacles (refer to 1 or 2 that the subject has previously mentioned), tell us a little about how you have looked for help? What tools or resources have you used?
    a. What is your preferred means of accessing help?
        i. In-person, digital (mobile or computer preferred?), other?

7. When looking for academic help, what forms of content are most appealing and effective for you? Is any form particularly ineffective?

8. The IQP team is building an online resource for connecting students and professionals to resources and tools that enable them to master their workflow, so they can work more efficiently and effectively.
    a. How important is efficiency to you when you work?
    b. What do you think when you hear the word "workflow?"

9. How familiar do you feel you are with your learning style?

Focus Group 1

<Flash the logo for 2 seconds>
1. Describe the logo/what you just saw.
    a. What did it evoke?
    b. What do you think of the colors used?
2. Suggestions?

<Go through mockup screens in a logical order, about 5 seconds per mockup>
1. What is your first impression of these mockups?
    a. What did you saw in this quick preview evoke any emotions/first impressions?
2. Suggestions?

<Show main page>
1. What is the first thing you see on this screen?
    a. Why did it draw your attention?
2. What features on this page would help you navigate to a specific resource or tool?
3. Please point to the different features on this screen and share what you think they might do or mean.
4. Are there any areas which seem unclear or convoluted?
5. Suggestions?

<Show Advanced Filter screen>
1. Please point to each of the features of the Advanced Filter and share what you think their purpose might be.
2. How would you go about using the Advanced Filter screen?
3. Suggestions?

<Show Tool Detail Page>
1. Based on this mockup, how would you go about determining how relevant this tool is to you?
2. How do you feel about using a review-based system to show relevancy based on courses and your individual learning style?
3. How many types of information are displayed on this page? (visual, auditory, etc)
   a. Do you think this multimodal approach to conveying information would help you personally *(answer individually!)*
4. Is this sample tool a paid purchase?
5. How could you go about accessing this tool?
6. How would you save this tool to your "Favorites"?
7. Overall, does this page seem logically organized? Familiar layout? Navigable?
8. Suggestions?

<Show Signup Page>
1. Compared to other signup pages you have used, does this seem fairly standard in terms of layout and features?
2. Is there anything unclear or unappealing about this page?

<Show User-Account Settings Page>
1. Compared to other signup pages you have used, does this seem fairly standard in terms of layout and features?
2. Is there anything unclear or unappealing about this page?
3. Missing features?

<Show User Dashboard>
1. How do you feel about the tab-based navigation on this page?
   a. Does it flow well with other forms of navigation on the website?
      i. Should we use tiles/cards instead?
2. Suggestions?