Information Systems

67-373 Software Development Project

Executive Summaries
2016

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YMCA

Executive Summary

Community Partner
YMCA of Greater Pittsburgh
Student Development Team
Renzo Bautista
Derek Hirata
Yeon Soo Kim

Background

The YMCA is a nationwide non-profit organization that focuses on youth development, healthy living, and social responsibility. The organization offers a wide range of services, including athletic facilities and after-school classes, with the aim to provide professional, educational, and personal development opportunities for its local community regardless of age, income, or background.

Project Description

Project Opportunity

The YMCA faces logistical issues with collecting attendance that waste the time of its instructors and the children enrolled. The issue stems from instructors having to take four distinct attendances for each child in every program. This process is painfully time consuming for the instructors and takes time away from the children actually participating in the activities. If the instructors only used one centralized attendance sheet, they would be able to spend more time with the children and the children would receive a higher quality experience at the YMCA.

Project Vision

Our project aims to overhaul the current process of taking attendance at the YMCA. Rather than using three different attendance sheets, the system would be capable of keeping track of attendance on a single sheet for each program. The system is integrated into the existing databases that the YMCA uses for attendance and other metrics -- Daxko, PELICAN, Apricot -- and generates reports for administrative use.

Project Outcomes

By the end of our project, we created an application that accomplishes the following:

- Allows administrators to import data from Daxko regarding students, programs, enrollments, YMCA sites, and YMCA branches;
- Allows staff members to sign up and be verified by an administrator account;
- Allows staff members to log in and take attendance for YMCA programs;

- Allows staff members to record which snacks are provided on any given day for a program and which are received by students;

- Requires guardians to set up a 4-digit PIN code to sign out their child (which can be overridden by the instructor's own 4-digit code, or the YMCA master code);

- Allows administrators to generate attendance and snack program reports;

- Sends e-mail reminders to Deborah, Todd, and any branch directors whenever students attend programs that they are not enrolled in.

To ensure the compatibility of our system with the current YMCA technological ecosystem, we learned more about the tools they use from key people in the organization -- Jennifer Bouchard, a program coordinator assuming a data analytics role, and Jim Needles, the Vice President of Business Information Systems.

To ensure the compatibility of our system with the procedural ecosystem, we learned more about the snack program from Jeff Cox, a food program coordinator at the Allegheny site.

We ran a series of paper prototype tests at the beginning of development, and have held weekly demos to ensure our application's fit with our client's needs.

Project Deliverables

Our project consists of the code that composes the system, which contains a documentation folder, and the server that hosts the system.

Recommendations

Our recommendation is to add data analytics functions to the website, to track attendance rates of programs in different sites and branches. Through this, the YMCA would be able to quickly determine which sites are succeeding, and which are in need of special attention.

Student Development Team

Renzo Bautista served as the team's technical lead. He is a third-year student with majors in Information Systems and Computer Science, and will be returning to Google this summer for his second internship there. Renzo hopes to pursue a career software engineering upon graduating.

Derek Hirata served as project manager. He is a third-year student majoring in Information Systems with a minor in Computer Science. This summer he will be interning at LinkedIn. Derek is currently interested in pursuing a career in software development after college.

Yeon Soo Kim served as design lead and client liaison. She is a third-year student double-majoring in Information Systems and Human-Computer Interaction. She will be interning at Adobe this summer. Yeon Soo aims to pursue a career in user experience design and engineering.

Beverly's Birthdays

Community Partner
Megs Yunn
Martina Caruso
Student Development Team
Jeanine Huang
Gaury Nagaraju
Ibrahim Soltan

Background

Founded by Megs Yunn, Beverly's Birthdays is an organization that provides birthday celebrations for children and families experiencing homelessness in the Pittsburgh region. They believe in spreading birthday cheer 365 days a year and that every child, regardless of personal or financial circumstances, deserves a special birthday. Since its inception in 2011, the organization has distributed birthday presents to and celebrated the birthdays of more than 6000 children. Our main point of contact was with Martina Caruso, one of the program managers who coordinates volunteer events and needs.

Project Description

Project Opportunity

Beverly's Birthdays has grown exponentially over the past four years, a rate at which its current technology infrastructure cannot keep up with. The organization tracks amount of donations it receives using an Excel sheet and tracks inventory through memory, which was sufficient for daily operational needs in the past when it served only a small fraction of the population it does now. Manually tallying donations such as candy bars, big gifts, etc. is time-consuming and at times, takes an entire day. Since Excel only tracks inflow, there is no way of knowing how much of each item remains, which item donations are needed most or how many items are bought in addition to donations. Implementing an inventory management system will help Beverly's Birthdays streamline internal operations so that it can save time and money with accurate inventory values, better communicate its needs to donors and volunteers and remain stable for the upcoming years.

Project Vision

Our goal is to provide a system that will enhance the business processes of the organization so that they can realize their full potential and continue to do what they do at improved pace and accuracy. We propose a custom web application using barcode scanners that scans items moving in and out of the inventory, records additional details such as agencies and provides metrics based on this information.

Project Outcomes

After understanding the core problem of our client and gathering requirements, we performed a comparative analysis of alternative solutions such as customizing an existing POS system, our team decided to build a custom Ruby on Rails web application that operates on a Postgres database, all deployed on Heroku and readily available on both desktop and mobile devices. We streamlined the inventorying process so that the check-in and check-out processes only require a simple barcode scan, implemented an advanced filter to facilitate item search, provided a dashboard with metrics such as number of birthday bins delivered to each agency, total bought and donated value and provided an export option so that other metrics that measure organizational performance can be evaluated in Excel with the data collected. To ensure sustainability of the project, we have provided extensive documentation and identified key personnel responsible for both the application and the code and worked weekly with our client to ensure that she has a thorough understanding of how to use the system.

Project Deliverables

The final application is deployed on Heroku and hosted at bbinnventory.herokuapp.com. Full ownership of the GitHub repository and Heroku server will be transferred to Beverly's Birthdays. We have also created extensive application documentation and code documentation (including the ERD).

Recommendations

The application currently has core functionality, i.e. check-in and check-out of items working as intended and is fully useable. Since the application has multiple users, each of them should be trained in their area of use although there is a 'Help' page and the design is easy to use and intuitive. In case of any technical glitches or server breakdowns, it is advised to periodically export all the data as a backup. We advise future development teams to build an interactive and responsive dashboard where different attributes can be selected for metrics needed for reporting purposes.

Student Development Team

Jeanine Huang led the team as quality assurance manager and application developer. She is a Junior Information Systems major with a double major in Statistics. She will be interning at PNC this summer and is looking toward a career in software development and user interface design.

Gaury Nagaraju led the team as client manager and application developer. She is a third year student double majoring in Information Systems and Business Administration. She will be interning at Credit Suisse this summer and is looking toward a career in technology consulting and application development.

Ibrahim Soltan led the team as project manager and UI developer. He is a Junior Information Systems major with a minor in Business Administration. He will be interning at KPMG in Qatar this summer and is looking toward a career in technology consulting and entrepreneurship.

Handprinter

Executive Summary

Community Partner
Gregory Norris
Student Development Team
Jennifer Jin
Chiamaka Nnebe
Javed Ramjohn
Mark Vella

Background

The Handprinter project seeks to inspire positive environmental impact by allowing people to monitor their environmental contributions and spread new sustainability ideas to the world. Carbon footprints measure negative environmental impact stemming from actions by an individual or group. Instead of only providing a negative appraisal of one's impact on the environment, the Handprinter project also measures positive contributions to the environment, called handprints. Together, handprints and footprints provide a holistic understanding of environmental impact by an individual or group. Handprinter seeks to encourage people to come together and share, collaborate on, and adopt ideas that aim to show that the world is better off with humans than without them.

Project Description

Project Opportunity

Our client, Gregory Norris, who founded Handprinter, wants a platform for people all over the world to share and collaborate on handprint ideas. In order for such a platform to work, it needs to be user-friendly and accessible to anyone; otherwise, handprinting will not be accessible to a global population. This, in turn, will not help the organization achieve its core mission. Our team realized that a user-friendly interface to view, submit, collaborate on, and manage handprint ideas would set the stage for widespread creation and collaboration of handprint ideas.

Project Vision

Our team set out to build an interface for leaf users (non-expert, average users). The interface would be a responsive web application that allows anyone to submit ideas at any time, with ease. Key areas of functionality included: the ability to submit a new idea and options to browse, comment, and vote on ideas. Ensuring all of these actions would be usable, while providing feedback that allowed users to understand the positive impact he or she makes through contributing guided our design process.We aimed to develop an application that educates users on handprinting, encourages them to contribute, and allows them to contribute with ease in a mobile and desktop environment.

Project Outcomes

The team developed a responsive Django web application with a PostgreSQL database hosted on Heroku. Visitors can view all ideas on the application and learn about Handprints. Registered users can submit ideas, vote on ideas, and comment on ideas. Seven user tests were conducted to gain feedback on the usability and perception of the application. Now, the Handprint organization has a fully functional application that allows people to submit ideas and discuss them. This completes the first part of the Handprinter ecosystem and paves the way for reaching the organization's mission of having people submit and adopt ideas globally.

Project Deliverables

Our application is currently hosted on Heroku. Ownership of the application's Github repository was transferred to the client. We provided the client with tutorials on administration features. Extensive documentation was given to the client, including the team's requirements document that contain a history of all work performed, technical notes about areas of improvement and further work, a testing plan, user testing notes, and the user testing script used. Finally, the client was given the training and information needed to manage the Heroku account for the application.

Recommendations

We recommend that future developers conduct further user testing with a diverse sample of participants to ensure the application is usable by all segments of the population. Furthermore, we recommend that future iterations of the application incorporate in-app notifications to notify users when their ideas have been voted or commented on. Social media integration will allow users to share their idea with their friends and allow the application to gain greater visibility. A reward system based on performing actions, such as submitting a new idea, will help retain community members. Finally, we recommend that future developers test the application's responsiveness on a variety of different platforms to ensure compatibility.

Student Development Team

Jennifer Jin led development as the project's technical lead. She is a third-year student in information systems with an additional major in statistics and a minor in business administration. Jennifer will be interning at Wayfair this summer and is pursuing a career in data science.

Chiamaka Nnebe served as the project's design lead. She is a third-year information systems major and is pursuing a minor in business administration. Chiamaka will be interning as an application developer for Credit Suisse this summer and is pursuing a career in financial services.

Javed Ramjohn contributed as the team's documentation lead. He is a third-year student in information systems with an additional major in policy and management. Javed will be interning at Avis Budget Group this summer in e-commerce and is pursuing a career in cyber security.

Mark Vella was the project manager and also served as the team's client advocate. He is a third-year student in information systems with two minors in business administration and intelligent environments. He will be interning this summer at Apple, Inc. as a technical product manager.

Environmental Foodprint

Executive Summary

Community Partner
Michelle Tom
Paul Fischbeck
Chris Hendrickson
Student Development Team
Karen Irvine
Anne Lueh
Jackie Pan

Background

The Environmental Foodprint team consists of Michelle Tom, Paul Fischbeck, and Chris Hendrickson, PhD and professors from Carnegie Mellon University respectively. For Michelle's fellowship, she explored the relationship between US food consumption patterns and changes in energy use, blue water footprint, and greenhouse gas emissions. Her research advisors were Paul and Chris.

Project Description

Project Opportunity

Michelle, Paul, and Chris wish to present the findings of their research in a transparent and accessible way. In an effort to promote human health and environmental sustainability, they need a platform that consumers, students, researchers, healthcare professionals, and policymakers can use to understand the nutritional value and environmental impact of various foods and diets.

Project Vision

We proposed to create an educational and interactive calculator that acts as a vehicle for publicizing their research in the form of a web application. The application will allow users to input foods into their meals so they can easily visualize the nutritional and environmental impact certain foods have on both their health and the environment. Users will also be able to compare their specific diet to the USDA recommended diet and other diets.

Project Outcomes

Our team built a relational database to store the nutritional and environmental food data. We set a strong foundation for this project; we heavily analyzed the project requirements, developed high fidelity semi functional wireframes, conducted rounds of user testing and created a preliminary web application. The administrator of the application is able to upload CSV files containing data, and the information will be updated automatically. With the calculator, visitors can easily add and remove foods to their "plate" to interactively see the change in nutritional and environmental impact.

Information about Michelle, Paul, and Chris' research is accessible through the website, thus effectively publicizing their work.

Project Deliverables

The final deliverable is a Ruby on Rails application, deployed on a DigitalOcean server. On top of the application, we will deliver thorough documentation and provide a guide so future developers will understand the code and reasoning behind the decisions we made, and the clients will know how to maintain the application on their part.

Recommendations

We recommend that the Environmental Foodprint team continue with development to incorporate the ability to compare meals in the future. Currently, the application functions as a basic interactive calculator for users to build a meal and view its impacts. There is a lot of groundwork already laid out for future development, so we recommend adding additional features and implementing more user stories. We have heavy documentation on what the long term vision for the project is, so there is a clear goal for the future and much room for expansion.

Student Development Team

Karen Irvine managed client relations and acted as content area expert. She is a third-year student majoring in Information Systems with a minor in Business Administration. This summer, she will be interning at Deloitte.

Anne Lueh served as project manager and design lead. She is a third-year student majoring in Information Systems with a minor in Global Systems and Management. This summer, she will be interning at PNC.

Jackie Pan was the quality assurance lead and technical lead. She is a third-year student majoring in Information Systems. This summer, she will be interning at Bloomberg.

Center for Building Performance and Diagnostics

Executive Summary

Community Partner
Azizan Aziz
Bertrand Lasternas
Student Development Team
Brad Chin
Karen Segal
Maggie Yu

Background

The Center for Building Performance and Diagnostics (CBPD) is a part of the School of Architecture at Carnegie Mellon University that offers a PhD program to students and a leading research program. The mission of the CBPD is to conduct research, development, and demonstrations to increase the quality and user satisfaction with commercial buildings and integrated building systems, while improving cost, time, and energy-efficiency. The CBPD is currently comprised of about ten PhD students, fifty master's students, and six faculty members situated in the Robert L. Preger Intelligent Workplace, a "living" and "lived-in" laboratory located on the fourth floor of Margaret Morrison Carnegie Hall on Carnegie Mellon's Pittsburgh campus. The space is used to test and examine new ideas and methods of practice, and has won several national and international awards.

Project Description

Project Opportunity

In the spring of 2015, the CBPD partnered with an Information Systems student project team with the goal of addressing the lack of engagement within the CMU community to conserve energy on campus. The previous team conducted an extensive amount of research in order to determine the cause of the lack of engagement problem, and eventually chose to build a Django web application with the goals of improving the CMU Facilities Management Services (FMS) service request process and bridging the gap between the CMU community and FMS personnel. Through the application named ConnectFMS, members of the CMU community can make posts on energy conservation issues as well as utility problems they see around campus by taking a photo and writing a short description. After seeing the work produced by the previous team, the client hoped to have ConnectFMS deployed on their own server in order to support the collection of real usage data from the campus community. Furthermore, the client wanted to test the existing application in a realistic environment in order receive user feedback to evaluate the effectiveness of the application and make improvements and modifications.

Project Vision

Per the client's request, our main goals for the project were to deploy the existing web application developed by the previous student team, recruit members from the CMU community to use the

application, and improve the application based on user feedback. We also agreed to implement several essential features for ConnectFMS and planned on implementing "nice-to-have" features if time permitted. Through ConnectFMS, we hoped that the CMU community would be able to voice their concerns about sustainability and maintenance issues on campus more easily as well as learn more about CMU's building performance.

Project Outcomes

We improved upon the Django web application we inherited from the previous student team by conducting three rounds of user testing, incorporating user feedback into the application based on these results, and implementing requested new features for ConnectFMS. We were able to deploy our application on the client's server with the Andrew Shibboleth authentication system installed before we recruited real users to test out our application from the CMU community. In addition, we presented our work and findings from the semester to two representatives from FMS.

Project Deliverables

ConnectFMS is currently deployed on the client's server, and we have shared our code repository with the client on Bitbucket. We also created technical documentation containing important information needed to access and maintain the application in the future.

Recommendations

For future teams on this project, we recommend that they consider implementing new features for the project such as search functionality, social media integration, and integration with FMS's existing database. The application should be also made more responsive and desktop-friendly since it is currently only optimized for mobile use, and future developers should consider ways to optimize the database in order to increase the application loading speed.

In order to fully achieve CBPD's goal of engaging the campus community with energy consumption issues at CMU, we recommend that the client works with FMS closely to gain official endorsement of ConnectFMS in the future so that more members of the community will know of and use the application to report issues.

Student Development Team

Brad Chin served as the client relationship manager and database lead. He is a junior majoring in Information Systems. He will be interning at PNC Financial Services this summer and is looking toward a career in technical consulting and project management.

Karen Segal served as the quality assurance manager and design lead. She is a junior double majoring in Information Systems and Human-Computer Interaction. She is looking toward a career in application development and user experience design.

Maggie Yu served as the project manager and technical lead. She is a junior majoring in Information Systems and Human-Computer Interaction. She will be interning at Capital One this summer and is looking toward a career in application development.

Beaver County Humane Society

Executive Summary

Community Partners
Donna Bucek
Susan Salyards
Jasmin Wu
Student Development Team
Gus Henry
Shijie Rao
Alex Wang

Background

The Beaver County Humane Society is a local humane society that has served Beaver County and the surrounding area since 1950. Aside from adoption services, veterinary services, and educational sessions, the Humane Society also has a fostering program, which allows for local residents to take home animals that are young, sick, or injured, and care for them until they are ready to be adopted out. Throughout the year, and especially at peak seasons when more animals are brought in, the humane society needs as many people as possible to volunteer to take home foster animals.

Project Description

Project Opportunity

The current process of deciding whom to foster an animal to requires either looking through existing paper foster applications, or relying on the memory of a few individuals. This semester, the Beaver County Humane Society worked with the student development team to create a solution to better reach out to local residents, in order to increase the percentage of animals fostered. The team hopes to save the staff significant time by digitizing foster applications, and matching potential fosters to the animals the humane society takes in, but cannot yet adopt out.

Project Vision

Our team proposes an application that shows all animals needing fostering, and matches each to the best foster parent, so the staff can quickly and easily foster out animals as quickly as possible.

Project Outcomes

Our team built a web application in which staff members can view all animals currently needing fostering, and a prioritized list of suggested fosters who are best matched to each animal. The system takes in characteristics about the animal (e.g. whether it is sick or has behavioral issues) and matches them to potential fosters based on requirements and preference (e.g. will only take dogs).

Project Deliverables

We will be deploying the system on their server in-house, as well as delivering folders including source code, design documents, user interview and test results, and informational and maintenance documentation.

Recommendations

The first steps that BCHS needs to take to begin utilizing the functionality of this system requires digitizing their existing paper foster applications in order to have the foster base available in the system to use to match to animals. This will need to be done either by current staff or volunteers, according to procedures laid out in documentation.

In order for the project to be sustained within BCHS, we recommend they follow the provided documentation regarding procedures and maintenance steps. The people in IT positions at BCHS will be able to carry out any general maintenance or repair steps such as server restart, data manipulation, and networking changes, if needed. For app-specific errors or changes, we will be providing source code and instructions to another person close to BCHS who is familiar with Ruby on Rails applications, and additionally the software development team will be willing to answer questions and provide quick fixes for issues arise after the semester is over.

As we were focused on accomplishing a minimum viable product, not all requested features for our application were implemented. Therefore, if BCHS wishes to add some of the already-requested features, we recommend they or another software development team (e.g. a future IS 67-373 team) implement these features. The work this semester provided a lot of the back-end groundwork to allow for many of these future requested features to be more easily implemented. Other potential future changes that we recommend could include cleaning up and refactoring of existing code, fixing any existing bugs or user frustrations, and conduct further user testing to review and revise existing design, interface, workflow, and general experience of the application.

Student Development Team

Gus Henry headed deployment and served as project manager. He is a third-year student double majoring in Information Systems and Human-Computer Interaction, and minoring in German. He will be interning at Apple this summer. He served as the general point of contact with BCHS staff.

Shijie Rao served as backend developer. He is a third-year student majoring in Information Systems and minoring in Human-Computer Interaction. He will be interning at Amazon this summer.

Alex Wang was the front end developer for this project. He is a third-year student in Information Systems, Human-Computer Interaction, and minoring in Design. He will be a user experience intern at Apple this summer.

United Mitochondrial Disease Foundation

Executive Summary

Community Partner
Chuck A. Mohan
Jeff Gamza
Cliff F. Gorski
Student Development Team
Luke Hottinger
Lois Yang
Eric Yu

Background

United Mitochondrial Disease Foundation (UMDF) is a national nonprofit organization established in 1996. It coordinates over 150 volunteer groups and ambassadors across the U.S., host Energy for Life Walk events in 28 cities, and created the first ever Congressional Caucus on Mitochondrial Disease, focused on securing significant federal research funding.

UMDF's Path to a Cure website serves as a donation channel to the organization. It allows people to donate a brick in the path to a cure for mitochondrial disease. These usually serve as a memorial for the lost of a loved one to the disease.

Project Description

Project Opportunity

Although UMDF is fairly tech savvy, it has some glaring problems which plague its Path to a Cure site. Upon first glance the site does not provide any indication of what it's objective is and what it expects the user to do. UMDF is also paying quite a large sum of money per month to host their websites.

Project Vision

Our goal is to revamp the site such that the Path to a Cure site is more animated, intuitive, and interactive by educating first time users what Mitochondrial Disease is and entails, add milestones of achievements that the UMDF has made, and offering more customization to the bricks. This way, we can attract, educate, and retain new donors to the site. Combining the Path to a Cure site with their home site will save them money.

Project Outcomes

We worked in parallel with UMDF on developing their new website on WordPress. While the IS team focused on the design and development of the Path To A Cure donation channel, we provided our clients with hosting and design suggestions in order to improve UMDF's online presence as a whole. We also aided in the site's configuration.

Project Deliverables

The WordPress site with WooCommerce integration, a copy of any custom code we wrote for style or function, any art assets that we created for The Path to a Cure.

Recommendations

1. Work on creating a cohesive design for the entire website, not just the Path To A Cure Site. Unite all of the different websites under UMDF so that they fall under the same site and banner. As of right now UMDF has multiple websites under different domains, which costs them a lot of money (since they spent $400 on their Path To A Cure site, we can guess how much they would save by combining all of their other sites), and also divides their user base and decreases the traffic on each of their sites

2. Work on the developing Path To A Cure site. Our IS team managed to update this donation site to make it more user friendly and visually engaging, but due to our timeframe we were unable to implement everything we wanted.
   a. Include more information on the Path To A Cure site so that users can see where their money is going. Milestones (which can be done in a timeline such as our blog-esque path or simply in the slider as a news slide) , would be a great way to indicate to the users what kind of achievements UMDF has made. These include:
      i. Funding milestones
      ii. Major donations
   b. Add more interactivity with the brick, so as to incentivize users to come back. We managed to update the design of the brick as well as turn it into a shareable blog-esque item, but maybe a future IS student team can think of a way to make these bricks contain more information or make them more "real," in a sense (perhaps with 3D software)

Student Development Team

Luke Hottinger was the backend system designer. He is a third-year student majoring in Information Systems with a minor in Physical Computing. He will be interning with Boeing Defense, Space, and Security this summer as a versatile technologist.

Lois Yang served as project manager. She is a third-year student majoring in Information Systems with an additional major in Human Computer Interactions. She will be interning at Facebook as a Product Designer this summer and is looking toward a career in iteration-based product design.

Eric Yu was the frontend designer and quality control manager. He is a third-year student majoring in Information Systems. He will be interning with BNY Mellon this summer.

Best of the Batch Foundation: Project C.H.U.C.K.

Executive Summary

Community Partner
Latasha Wilson-Batch
Student Development Team
Benjamin Junker
Shreeyagya Khemka
Sung Jin Kim

Background

Best of the Batch Foundation is a nonprofit organization located in Munhall, PA (near Homestead and the Waterfront). It focuses on building character, self-esteem, and appreciation for education among children and families. Moreover, the Best of the Batch Foundation endeavors to unlock the potential in children and families in the western Pennsylvania area by providing them with a physically safe space and venue for supplementary/alternative education and recreation. In practice, this mission manifests itself in two main ways. First, the Best of the Batch Foundation serves as a clubhouse for children in the community; that is, children in the community can come to the Best of the Batch facilities while not attending to other, obligatory commitments. Second, the Best of the Batch Foundation offers numerous programs to build confidence, teamwork, and leadership skills and additionally to foster academic development for community youth.

Project Description

Project Opportunity

Project C.H.U.C.K. is one of the many programs Best of the Batch offers to serve children in the local community. It is a summer program which allows children of various ages to participate in a basketball tournament. The event has over 300 children register every year and as such requires an automated information management system. Over the past two years, Best of the Batch has worked with Carnegie Mellon students to produce such an application. However, the application could be improved by increasing security, providing additional analytics, enabling data persistence, and providing team management systems.

Project Vision

Our vision for this project was threefold: enabling data persistency, enhancing security, and building admin features. To enable data persistence, we created accounts for guardians and volunteers so that they could access and edit their information from year to year. For enhancing security, we established that satisfying brakeman tests and removing data once it has been signed off on, are appropriate security measures for this project. In terms of building admin features we provided additional analytics and a revised team management system.

Project Outcomes

The major outcomes of this project are: a redesigned user experience, added administrative features, and improved security measures. Our redesigned user experience includes a new registration process, guardian and volunteer account creation, guardian and volunteer portals and public team standing and schedule pages. We added administrative features such as notifications, analytics and team management systems. We improved security measures by running brakeman tests and by removing sensitive data once it had been signed off on.

Project Deliverables

The final deliverable is a web application (projectchuck.herokuapp.com) deployed on Heroku linked to a Postgres database with Amazon S3 being used to store images.

Recommendations

With regard to recommendations for our client partner's organization, our predominant recommendation is that they bring some sort of technology expertise in-house. The advantages for bringing technology expertise in house are, namely, that you have a technology expert who can provide better service, because (s)he understands, more deeply than a consultant, your business processes, and that you always have someone working on the technology portion of your business processes, even when you have no imminent technology needs.

With regard to recommendations for a future team, were able to lay the groundwork for data persistence in our application by implementing the username/password system. Through this, users can access their previous years' information and documents. Given that we laid the groundwork for it, we would recommend to future team to continue development on this feature, as it is of a high priority to the client. Additionally, to future teams, we recommend heavily involving the client partner throughout the development process, utilizing the expertise their of faculty advisor(s), and quickly becoming familiar with the existing system, as these were all practices of ours that helped us to produce a successful project.

Student Development Team

Benjamin Junker is a Junior majoring in Information Systems with potential minors in a handful of fields. He served as the Project Manager, Client Advocate, and Lead Rails Developer on the project. This summer, he will be working with the Financial Intelligence Unit in the Republic of Palau.

Shreeyagya Khemka served as the Technology and Deployment lead. He is a third-year student majoring in Information Systems with a minor in Computer Science. He will be interning at Credit Suisse this summer and is looking forward to a career in financial technology.

Sung Jin Kim served as the security lead. He is an Information Systems major and Computer Science minor. He will be interning at Big Switch Networks in Santa Clara, California this summer as a software engineer. He led the discussion on how to best mitigate security risks.

Phipps Conservatory and Botanical Gardens

Executive Summary

Community Partner
Adam Haas
Emily Kalnicky
Student Development Team
Jibby Ayo-Ani
Suvrath Penmetcha
Alex Tsai

Background

Phipps Conservatory and Botanical Gardens is a public garden located close to several colleges such as Carnegie Mellon University and University of Pittsburgh. Phipps' goal is to encourage people to make simple changes in their lives and thus contribute to environmental preservation. It plays a part in continuing environmental sustainability through research, shown by the Center for Sustainable Landscapes (CSL) a facility that houses groundbreaking sustainability research and science education programs. The CSL produces all of its own renewable energy and thus presents the community with a standard of sustainability and ways for everyone to contribute to environmental sustainability.

Project Description

Project Opportunity

Our clients discussed in depth the importance of not just providing an engaging experience for the visitor, but also influencing people's attitudes towards sustainability and ultimately effecting a change in their behavior. For the CSL, in particular, it is their goal to influence people to adopt more sustainable lifestyles in their own homes. Specific examples include taking shorter showers to conserve water, taking advantage of natural lighting when possible to reduce energy consumption, and being mindful of their food sources. They have tried to address this goal by investing in a dashboard that shows real-time data though it is designed for scientists and experts instead of the general audience.

Project Vision

The focus of this project is the ongoing challenge to find new ways of engaging visitors on the CSL's performance and sustainability in order to allow them to connect more deeply with the environment. We sought to fulfill this need through a web application that took visitors through an interactive tour of the building. We started by gathering feedback to understand why visitors went to the CSL, what they expected to see and experience, as well as what would make them come again. The visitors include those who come as student groups as well as other people of a variety of age groups and demographics.

Project Outcomes

Our final outcome was a web application that serves as a companion guide to visitors of the Center for Sustainable Landscapes. The app helps increase the amount of accessible information to learn about the space as well as providing deeper interaction. The web page uses HTML, CSS, and JavaScript together to create a platform for a variety of content whether it be text, images, multiple choice questions, or even graphs with live data.

Project Deliverables

The main deliverable to our client is a link to our application (http://phipps-csl.github.io/) which is hosted on GitHub and also a link to the GitHub repository which contains all the source code. We will provide a username and password to the GitHub account and to the email we used to create the GitHub account. We will provide technical documentation in addition to our solution as a reference and also for future integration with Phipps's CMS tool called ExpressionEngine. Additionally, we will provide a .zip file containing all the pictures as well as icons we created for the application. Lastly, we will provide the username and password to access Phipps's live-data.

Recommendations

We recommend Phipps bring their ExpressionEngine technical expert on board the project and give them the responsibility of integrating our solution with ExpressionEngine. Additionally, we have a few recommendations of how to further iterate and improve on our application. The first is more gamification such as scavenger hunts, which would allow visitors to engage with the different exhibits in the CSL. Phipps recently got iBeacons and our second suggestion would be to explore how our application can provide different content as visitors approached various exhibits in the CSL. The third suggestion is exploring Google Cardboard and virtual reality technology to allow visitors as they walk through to experience the hidden stories in the CSL. The last suggestion is color schemes that change by season and social media contests, which can provide a slightly different and more personalized visitor experience.

Student Development Team

Jibby Ayo-Ani served as project manager. She is a fourth-year student majoring in Information Systems. She will be working full-time with Capital One and is looking toward a career in software development.

Suvrath Penmetcha was one of the programmers for the project. He is a Junior Information Systems and Statistics major. He worked as an IT Analyst last summer at Johnson and Johnson.

Alex Tsai was the designer. He is a third-year Information Systems and Human-Computer Interaction major with a minor in Design. He will be joining Facebook's Product Design for the upcoming summer.

SEI Rubric Creator

Executive Summary

Community Partner
Josh Hammerstein
Student Development Team
Westin Lohne
Arun Marsten
Donovan Powers
Aamer Rakla

Background

The Software Engineering Institute (SEI) is a not-for-profit Federally Funded Research and Development Center (FFRDC) at Carnegie Mellon University, specifically established by the U.S. Department of Defense (DoD) to focus on software and cybersecurity. (http://www.sei.cmu.edu/about/organization/index.cfm). As an FFRDC, the SEI functions like consultants to primarily government agencies by providing objective and unbiased support for research and development of software systems, as well as providing services such as training, certifications, and advice & guidance.

Project Description

Project Opportunity

The SEI is already deep into a project where they are using machine learning and computer vision to automate testing of employees for the Department of Defense (DoD). There are tests users must take to become certified in a given area that are several hours and recorded screencasts. Grading requires a lot of staff hours and is neither sustainable in the long term nor efficient in the short term, so the solution needs to be self-proficient and automated. So, the SEI would like a solution the automatically scores employee's performance in testing scenarios, aka an "auto grader." Before this can happen, the computer vision system must be trained what to look for. We were tasked with discovering a solution that could allow them to painlessly and quickly create training data for the evaluation system. By allowing users to mark what parts of the video demonstrate proficiency in certain skills, and then allow them to organize these skills into standardized layouts readable by a machine learning system, the computer vision evaluation system will one day be able to automate this task based off the training data.

Project Vision

Based on the need of the client, we envision a solution that allows the intuitive creation of evaluation rubrics to be used as machine learning training data. Simply, this solution should allow people to tag appropriate skills demonstrated in videos, and chain those skills into larger sets of skills. The narrative, as informed by our conversations with the client, demonstrates that the creation of these KSA rubrics is imperative to enable the eventual functionality of their computer vision-enabled evaluation tool.

Project Outcomes

We have developed an air-gapped web application that can be used to create training data to provide to the SEI's Computer Vision Machine Learning System. Graders can access the application and create rubrics for different tasks and skills to be exported to the Machine Learning System so it can then identify the same tasks in the assessment recordings.

Project Deliverables

The final deliverables include training materials, documentation on design decisions, and the GitHub repository of the Node.JS application. We will also be having a final meeting with the client to ensure they have all the resources they need to understand the application and continue its development when they have time.

Recommendations

Since our team focused all of our efforts on building a reliable minimum viable product by the end of the semester, we were unable to incorporate all the additional functionality discussed with Josh and Rotem (the technical lead for this SEI Project) that they would have liked to see implemented in the Rubric Creator. We advise future development teams to develop more administrative controls and a user account system if it is still needed in the future. This would allow the admins more fine-tuned control of the system, and a cleaner interface for the users.

Student Development Team

Westin Lohne was the lead UI/UX designer. He is a Junior majoring in Information Systems. He will be working at Facebook this summer.

Arun Marsten served as a backend developer focusing on image saving and KSA interactions. He is a Senior in the BXA Program, majoring in Information Systems and Music Technology. He will be working at Deeplocal this summer.

Donovan Powers served as a backend developer focusing on video player and chapter marker interactions. He is a Junior majoring in Information Systems. He will be interning as a developer at Spiceworks this summer.

Aamer Rakla served as project manager. He is a Senior in the BXA Program, majoring in Information Systems and Drama: Production Technology & Management. He will be working at West Monroe Partners as a Security and Infrastructure Consultant beginning in August 2016.

Six Degrees of Francis Bacon

Executive Summary

Community Partner
Christopher Warren
Jessica Otis
Student Development Team
David Gao
Max Harlynking
Amy Li

Background

The Six Degrees of Francis Bacon project is a Carnegie Mellon based research group that maps the relationship between historical figures in early modern England through a digital data visualization network which contains thousands of individuals. The project relies on crowdsourcing to find, connect, and visualize the relationships between 16th through 17th century British figures. The group hopes to serve the academic community by providing new features to the website that are not only useful, but fun. It plans on doing so by collaborating with a student development team from the Information Systems department for the fourth year in a row.

Project Description

Project Opportunity

Crowdsourcing is an essential element to the Six Degrees of Francis Bacon project - supplying the information for the database. Unfortunately, the main problem the project currently faces is the lack of user activity and contribution. Some of the project's ideal contributors, active academics, lack the time or incentive to contribute to the project's network. In order to incentivize users, the group hopes to implement interactive features that encourage users to contribute to the website's network. Once users feel more incentivized to contribute, whether that be through a bar to note their progress or by providing a new way to contribute to the website, Six Degrees of Francis Bacon can grow at a steadier rate and expand its network. This would help the project improve its service, which in turn would help generate more interest and perhaps encourage more contributions to the site

Project Vision

In order to increase the number of contributions to the Six Degrees of Francis Bacon website, the team planned to implement several new features so users can discover new responsive ways to interact with the website. These features included a points system so users can track their progress towards updating their account to Curator Status, an updated user profile, a leaderboard to compare their progress with other users, and a new form to contribute to the website. These new interactive features bring a fun element to how users utilize the website and gives them recognition for their contributions.

Project Outcomes

The project consisted of a three-phased solution. The first phase included implementing a point system and updated user profile page. The point system would help users keep track of their progress, while updating the user profile would help users see how many points they have and encourage community interaction. The second phase was a leaderboard system. The leaderboard would help users compare their contribution progress to other users and further incentivize users to see their name on the main page of the site. The third phase was a new way to contribute to the database that included more interactive features. This phase would be more visually appealing than the old form to invite users to try more interactive ways of contributing. The team also redesigned portions of the home page to focus more on the digital network map to draw new users in.

Throughout the process, the team consistently updated the clients on the design process to ensure the new designs were aligned with the project's mission and existing design. The team also conducted multiple usability testing sessions to gain feedback on the current website's design and the team's new design features.

Project Deliverables

The final deliverable includes a deployed version of all three phases and the additional home page design changes. The code will be accessible to the clients via GitHub

Recommendations

The team recommends the client does more extensive research and testing to gain more information on their users and their users' habits. With this information, the clients can gain a better understanding on what changes to make to the Six Degrees of Francis Bacon website to better accommodate their users.

In addition, the client should continue seeking methods to improve the user experience on the website. This includes making the digital visualization map on the home page more user friendly in terms of interactions, and upgrading the website's design to appear more in sync with the new features and pages added to the project.

Student Development Team

David Gao led Phase 3 development. He is a third-year student majoring in Information Systems with a minor in Business Administration. He will be interning at Webbula this summer.

Max Harlynking led Phase 1 development and implemented extra features to the home page. He is a third-year student majoring in Information Systems with an additional major in Human-Computer Interaction. He will be interning at Yelp this summer.

Amy Li led Phase 2 development. She is a third-year student majoring in Information Systems with a minor in Hispanic Studies. She will be interning at Johnson & Johnson this summer.

Carnegie Mellon University Professional Development Services: Competency Assessment

Executive Summary

Community Partner
Kim Abel
Adam Marks
Katherine Sheridan
Student Development Team
Madeline Duque
Jennifer Han
James Ormond

Background

The Carnegie Mellon University Professional Development Services is a division of the Carnegie Mellon Human Resources Department that handles the affairs of career development for staff and faculty members of the university community. The CMU Professional Development Services works to support the staff and faculty to develop competencies and help them thrive in their job functions.

Project Description

Project Opportunity

Professional Development Services has identified an opportunity for CMU staff and faculty to better utilize the database full of resources to facilitate employee competency growth. CMU staff and faculty who wish to develop their competencies can currently access this database through FocusU. Professional Development Services wants to give staff and faculty the ability to build a career plan, where users can develop a path and execute the plan in order to grow.

Project Vision

The vision of this project is the creation of a web based portal that allows employees to take a competency assessment and be presented with resources and a plan on how to maintain and/or develop certain areas of competency. The web page will have two main users - CMU faculty and staff, and Professional Development Services staff. The first use is for employees to assess their competency level, and be presented with resources and a plan on how to maintain and/or develop their selected competency. Paired with a plan of action, CMU faculty and staff will be more motivated to follow through with their development. The second use of the system is for Professional Development Services staff, or equivalent administrators, to access the system and customize the content. This includes modifying the assessment itself, altering the interpretation algorithm, and adding/removing/editing competencies and resources.

Project Outcomes

There were two main outcomes of the project: a better understanding of the necessary solution for the client, and a developed web application. The first major accomplishment in the project was working with the Professional Development Services staff to build a deep understanding of the proposed solution. Discussions with the client resulted in the proposal of a web application where 1) faculty and staff could assess their competency levels and gain access to appropriate resources and 2) Professional Development Services administrators could manage the content in the system. The technological outcome of the project was the development of the proposed web application prototype. The combination of these two accomplishments resulted in a more efficient method for distributing the Professional Development Services' resources to faculty and staff in the university community.

Project Deliverables

The deliverables for this project is a database-driven web application, with a content-management system for the administrators and a competency self-assessment for general users. The client can give the code base to the next team of developers with all of the existing code for the application. Another component of the deliverables of this project is thorough documentation given to the client. The documentation will provide the client with the opportunity to build upon this project in future phases.

Recommendations

This project explicitly covers Phase 1 of a larger project as defined by the client. The application delivered is a prototype and not yet in a production state. It is highly recommended that the next development team utilize the documents delivered to Professional Development Staff to build an understanding of where Phase 1 of this project ended. These documents include a requirements document, technical document, hosting document, training document, design document, and user testing document. Each of these documents is designed to help the reader build an understanding of the Phase 1 prototype and how to begin the next phase.

Student Development Team

Madeline Duque served as the Project Manager. Madeline is a junior at Carnegie Mellon University studying Information Systems with a minor in Game Design. She is PR for CMU's Game Creation Society and has a passion for game development.

Jennifer Han oversaw Client Relations for the project. Jennifer Han is a junior at Carnegie Mellon University studying Information Systems with a minor in Human-Computer Interaction. She is the marketing officer on the cabinet for the Student Body President and Vice President and involved in the Educational Technology club.

James Ormond was the Quality Assurance manager for the project. James is a junior at Carnegie Mellon University studying Information Systems with a minor in Business Administration. He is an active member of the varsity basketball team and an avid web developer.

SwiftCeipt

Executive Summary

Community Partner
Kevin Chau
Jason Xu
Jon Yen
Student Development Team
Sivan Mehta
Eric Terui
Amy Zheng

Background

SwiftCeipt was started in 2013 in the Oakland district of Pittsburgh as a tech solution to managing receipts and finances. People have to deal with receipts coming from various vendors all the time. These receipts usually appear in different format, e.g. paper or email. In most cases, these receipts are unruly and unmanageable due to them not being sorted in any logical order. With SwiftCeipt, a user no longer has to face these issues, as their receipts are easily itemized, stored, and made accessible via an iOS app. These features are summarized simply in the company's mantra: Manage receipts effortlessly forever.

Project Description

Project Opportunity

Initially, SwiftCeipt's only product was an iOS application, which limited the expansion of their user base. We also found that the available features of the SwiftCeipt are limited, which makes it hard to distinguish from other available products in the market. With these in mind, our team found that we could add most value to the organization through a web application that non-iOS users can access. It also expands the feature set to those that aren't appropriate on a mobile application.

Project Vision

Knowing this situation, our team believed we could add the most value to them by creating a desktop application. This would surely allow them to expand their user base beyond only iOS users to anyone with a web browser. On top of the existing feature set, we aimed to explore and create more interesting and innovative features based on the needs and visions of our client. For example, the folder feature to organize the receipts, data visualization feature.

Project Outcomes

Our outcomes largely manifest themselves in the extra features we developed for their desktop application. The desktop application allows them to increase their user base past iOS users in all users with a web browser, making the product more accessible to small business owners, their target audience. The folder feature allows users to easily organize receipts into logical groups, and when considered with the newly implemented graphs and maps, take advantage of the inherent advantages of a desktop application.

Project Deliverables

In our final deliverables, we will include source code, documentation for setup, testing instructions, and recommendations for the future of the product. All of these have been documented and generated over the course of development in a GitHub repository owned by SwiftCeipt.

Recommendations

We recommend our client to enhance testing for their backend database, especially for the newly created functionalities--the folder feature. A well-tested backend will make the web application more solid and reliable. We also recommend our client to implement a user tutorial after they are done with the Google login feature. This will be user-friendlier for first time users. Lastly, we highly recommend our client to conduct a full user test to get feedback from different user groups.

Student Development Team

Sivan Mehta is junior Information Systems major with a minor in Statistics. He acted as the tech lead of the team. He is interested in doing web app development and data analysis in the future.

Eric Terui is a senior Information Systems major and Music minor. He served as project manager and led client relationship. He will be starting his career off next year as a data engineer at Capital One.

Amy Zheng is a junior Information System major with an additional major in Statistics. In this project, she acted the frontend design and development lead. She is also interested in doing web app development and data analysis in the future.

Carnegie Mellon University
Spring Carnival Committee 2016

Executive Summary

Community Partner
Patrick Koenig
Student Development Team
Ronnie Ghose
Israel Madueme
Kunal Sinha

Background

Spring Carnival is hosted by the Spring Carnival Committee and is comprised of three main events: Booth, Buggy and Mobot. The Spring Carnival Committee (SCC) puts together this event and manages hundreds of students involved in student organizations who take part in Booth and Buggy races. The carnival committee comprises of many students and the executive board consists of eight members. We partnered with the carnival committee to make improvements to their current task management application, Binder. The committee had some enhancements that they wanted our team to implement so that the Binder application can better support their new requirements.

Project Description

Project Opportunity

Our project was unique in that it has two types of problems for our team to target. Firstly, our client already had a working application (Binder) that helps streamline their core business process (i.e. Spring Carnival booth administration). In order to meet their new business needs, they needed a more robust feature set to solve problems. The second type was an organizational one - the opportunity to explore regions of the organization that did not yet have a technology plan in place in order to further reduce the load on the Spring Carnival executive committee. Our client made a great effort to detail many issues they had with the application and new features that would be desirable.

Project Vision

Our first vision was to improve and extend the existing Binder application so that it supported our client's developing needs and workflows. Our second vision was to use our expertise as Information Systems professionals to learn about our client's business process and inform them of ways technology could facilitate processes in their organization. Our first goal was our main focus as that was our client's immediate need, and our second goal was something we intended to complete as the semester progressed.

Project Outcomes

Throughout the course of the project our team and our client were very diligent about tracking what we worked on using GitHub issues. We are happy to say that at the conclusion of the project our team resolved over 30 issues! The main features we created include a more streamlined tool checkout process, new reporting features to pull information out of Binder, a easier method for communicating between coordinators in the app itself, and many bug fixes. We are confident that our changes were a part of the improved productivity our client saw during Spring Carnival 2017.

Project Deliverables

Our client has an existing repository on GitHub (https://github.com/sc0v/binder-app/) and all of our code contributions have been pushed there via pull requests. In addition, our client pioneered the deployment process and so they already have the tools and information needed to deploy the application to their Campus Cloud VM.

Recommendations

We recommend that in the future our client solicit outside help in resolving some of the existing high priority issues remaining on the GitHub issues page including: adding text alerts for the tool waitlist, creating a better watch shift assignment workflow, and adding more comprehensive testing to the application. Also our client, Patrick, championed the deployment process, and so we recommend that he create a guide on what he did so that future Spring Carnival Committee's will be able to successfully deploy Binder in years to come. Going along with this, we recommend that in the future the SCC solicit outside help to develop an easier way to seed Binder's initial database entries every spring.

Student Development Team

Ronnie Ghose served as the design lead for the team. He is a third-year student majoring in Information Systems and Computer Science. He is looking towards a career in design and banking where he may explore a wide range of issues.

Israel Madueme served as the technical lead for the team. He is a third-year student majoring in Information Systems. He is looking towards a career in software development.

Kunal Sinha served as the project manager for the team. He is a third-year student majoring in Information Systems with minors in Business Administration and Statistics. He will be interning at JP Morgan this summer and is looking towards a career in software development and investment banking.

Pennsylvania Resources Council

Executive Summary

Community Partner
Ross Hirschfeld
Sarah Shea
Justin Stockdale
Student Development Team
Nikita Bokil
Ann Chen
Connor Moore

Background

Founded in 1939, the Pennsylvania Resources Council (PRC) is the state's oldest grassroots environmental organization that works to protect the Commonwealth's resources for future generations through environmental education, recycling and waste diversion programs, anti-litter campaigns and much more. PRC West manages a broad portfolio of programs and is a leader across the region on issues related to recycling and waste diversion. Some of the programs that PRC has conducted in the past include "Hard to Recycle Collection Events," conservation workshops, and environmental film festivals. With their board, membership holders, foundation, grant, and corporate partners, they have considerable presence and reach in the state. The Spring 2016 semester is PRC's third time collaborating on a project with the IS program.

Project Description

Project Opportunity

PRC hosts numerous collection events over the summer for household chemicals, e-waste, pharmaceuticals, and other hard to recycle items. Each collection event takes place in a parking lot, with approximately 1,000 cars coming in and out in 4 hours. During this time, people wait almost an hour in line until their materials are collected from the trunk by volunteers and they are sent on their way. PRC has been unable to effectively collect information on any of the recyclers, aka their "customers", and is looking for a data collection and analysis tool. This information is important to the organization for two main reasons: data-driven decision making and customer outreach. With the proper visualizations, PRC can present solid data to municipalities and sponsors in order to increase their funding and support environmental initiatives. Additionally, PRC has had difficulty engaging current members and attracting new ones, and would benefit from a tool that would increase their membership value proposition.

Project Vision

Our vision consists of three parts. First, we want to ensure efficient, effective data collection by developing business processes around an offline survey tool so that it is accessible in the parking lots. Second, we want to provide appropriate data visualizations so that PRC can better understand their customers, strengthen their value to the community, and procure more funds from the

municipalities. Third, we want to develop an events filtering map that will be featured on the PRC website. The map will display upcoming PRC events and allow users to filter by different event types near them. We hope that the events platform will increase PRC's membership value proposition and encourage users to visit their site.

Project Outcomes

Our project timeline involved evaluating various survey and data analysis tools, user testing the tools at PRC events, deploying the survey at PRC's first collection event, and developing the events platform. We ensured the solutions would be sustainable by training the community partners and providing thorough documentation. We also involved PRC's technology consultant, FiremanCreative, to discuss the events platform and integrate it with PRC's website. Our efforts helped us achieve the goal of providing value to PRC by asking questions and guiding their decisions surrounding technology.

Project Deliverables

Our final deliverables to PRC include the following:

1. SurveyGizmo subscription, training, documentation, and integration into PRC business processes
2. BatchGeo training and documentation for map visualizations
3. Events platform to be integrated into PRC website and display upcoming events

Recommendations

In order to build capacity, continued use of SurveyGizmo and BatchGeo will allow PRC to leverage these applications to meet their goals. To ensure this, we have provided comprehensive documentation to allow new users to learn about how to use the applications for their specific needs, and have ensured that the current community partners can successfully navigate the applications. We have also worked with their technology consultant, FiremanCreative, in order to ensure the sustainability and maintenance of the events platform and open up further discussion about using technology to improve PRC's business processes.

Student Development Team

Nikita Bokil served as Project Manager for the team. She is a junior majoring in Information Systems with a minor in Hispanic Studies graduating in Fall 2016. She will be interning at Pricewaterhouse Coopers this summer and is looking toward a career in Digital Consulting.

Ann Chen served as QA/Documentation Lead for the team. She is a junior majoring in Information Systems with a minor in Human-Computer Interaction graduating in Spring 2017. She will be interning at Capital One this summer and is looking toward a career in Software Development.

Connor Moore served as Technical Lead for the team. He is a junior majoring in Information Systems with a minor in Computer Science graduating in Summer 2016. He will be interning at Apple this summer and is looking toward a career in the field of Cyber Security.