

American Heart Screening Management System

Milestone 6 Evaluation

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Client:

Evan Ernst, CEO - Who We Play For

Klynton Holmes, Tech Advisor - Who We Play For

Progress of Current Milestone

Task	Completion %	Carlo	Chris	Drew	John	Noah	TODO
1.Participant Cancellation Feature	100%			50%		50%	
2.Implement Payment Error Handling	100%					100%	
3.Resolve Event Editing Bug	100%			100%			
4.User Manual	100%		10%		90%		
5.Developer Manual	100%		5%	90%	5%		
6.Demo Video	100%	100%					
7.Update User Surveys	100%		100%				

Accomplishments

- Task 1: Participant Cancellation Feature
 - Participants receive a cancellation code upon registering (in UI and by email) that can be used to cancel an upcoming event
 - A cancellation button on the registration page can be clicked to bring up a dialog to enter the code
 - User will receive confirmation upon successful cancellation and the accountant UI is updated accordingly
- Task 2: Implement Payment Error Handling

- If a participant enters invalid payment info, such as wrong card number, wrong CVV, or wrong expiration date, an error message appears informing the participant of invalid payment information.
 - Participant registration form no longer clears if there is an issue with the payment, so participants do not need to enter all their information again.
- Task 3: Resolve Event Editing Bug
 - Fixed a bug that prevented editing of an event's type
 - Type of event would update in UI, but not properly update in backend/database
- Task 4: User Manual
 - Includes a breakdown of the director, participant, and accountant user interfaces
 - Dives into further detail than the demo video, describing the purpose of various actions/options and what different statuses mean in regards to participants and events
- Task 5: Developer Manual
 - Includes a breakdown of the project architecture, folder structure, and logical organization
 - Describes important configurations of required tools for the project
 - Explains how to properly deploy/test backend changes with AWS
- Task 6: Demo Video
 - Walkthrough of the main features of the project
 - Divided up into the three current user types: participant, director, and accountant
- Task 7: Update User Surveys
 - Creation of an additional survey dedicated to gathering user feedback from accountants
 - Linked to accountant UI

Contributions

Carlo

- Completed the demo video
 - Screen recorded video to walk through the main features of the project.
 - Created graphics, wrote script, and created voice over.
 - Edited video and audio to pair together on timing.

Chris

- Updated user surveys
 - Created a third user survey for accountants
- Assisted in completing user manual
 - Revised user manual documentation
- Assisted in completing developer manual
 - Revised developer manual documentation
- Uploaded demo video to Youtube
 - Created a 'professional' Youtube channel dedicated to our senior project videos
 - Uploaded demo video with proper tags and description
- Uploaded demo video to senior design website
 - Created new section on website for demo video
 - Embedded demo video from Youtube and added responsive styling for mobile-users.
- Updated timeline on senior design website
 - Changed the timeline links from *before* routing to Google Docs to *now* downloadable PDF files
- Gathered supplies for showcase
 - Collaborated with WWPF to gather supplies for the senior design showcase

Drew

- Hosted team status meetings
 - MWF on days we don't meet for senior design class
 - Discussion Points: Current progress, blockers, demos
- Aided in implementing participant cancellation feature:
 - Updated participants sort key (SK) to be unique, so that it can be used as a cancellation code.
 - Integrated new frontend additions with previous backend cancellation functionality
 - Implemented error handling for invalid codes and duplicate cancellations
- Resolved event-editing bug
 - Previously, event types (School, Community, and Private) were not properly updated since the frontend and backend states were not in sync
 - Implemented logic to update the event type index in database and handle sparse index updates for published events

- Wrote developer manual
 - Went in depth about the project architecture / structure, source code, and the necessary tools and configurations

John

- Completed user manual
 - Wrote user manual documentation
- Assisted in completing the developer manual
 - Revised developer manual

Noah

- Created payment error handling
 - Created popup for invalid payment information.
 - Informs the user that the payment information they included is invalid.
- Aided in implementation of participant cancellation feature
 - Created a button to display a popup for a user to insert cancellation code
 - Edited email sent to participant after registration confirmation to include the cancellation code.
 - Cancellation code created from participants last name and date of registration

Lessons Learned

Carlo

- The importance of setting clear requirements and not being afraid of walking through processes with clients multiple times to prevent misunderstandings.
- Never be too proud to ask for help from your teammates.
 - Just because tasks are split up and assigned, don't think you have to do it alone. A good team is always helping each other with tasks.
- Building user interfaces
 - Before implementing or even designing the UI, it is extremely important to meet with the intended users to ensure all needs are met.
- When working with a client, it is important to meet with them regularly and give updates to make sure everyone is still on the same page.

Chris

- How to comprehend and develop applications using the Vue framework. Vue offers a multitude of tools for developers to build large applications. Vue, and frameworks similar to Vue, all attempt to save developers time and provide easier ways to build applications.
- How to comprehend and develop applications using Node.js. Vue relies on Node.js to install necessary components and test our software.
- How to comprehend and develop applications using Amazon Web Services such as S3, Lambda, DynamoDB, and API Gateway. AWS is overwhelming at first and takes time to navigate. After some practice, AWS becomes an extremely useful tool that large-scale applications can benefit from.
- What Cardea is, how it is being used by professionals, and how it stores heart screening information for patients. WWPF relies on this software at their events.
- Most importantly, the frequency and impact of sudden cardiac arrest in America. Thanks to WWPF, I have a deep understanding of the current situation in our country. This project fulfills a purpose far beyond what I hoped to accomplish at university. WWPF's story provided enormous amounts of motivation for our group to give our best work on this project.

Drew

- Effective requirements gathering is difficult in practice, but necessary to advance a project efficiently
 - Misunderstandings between clients and developers, and ambiguity can severely hinder progress and lead to wasted time
- Infrastructure as Code (IaC)
 - Terraform is a powerful tool for automating infrastructure for various AWS services
 - This allows changes in permissions, resources, and configurations to be deployed to all developers in an efficient manner, rather than manually making changes through the GUI and commits the configurations to source control
 - It also prevents mistakes that can lead to wasted resources or security breaches
- Agile Principles
 - Implementing agile-like principles from the start of the project, such as frequent Scrum meetings and a sprint board can greatly increase productivity

- It keeps the team in constant communication, revealing any impediments and keeping everyone on the same page
- Continuous integration followed by feedback from clients is vital, as requirements may change frequently
- Microservices / AWS
 - The microservices provided by AWS make isolated development easier — you can modify or add other microservices without affecting others
 - This supports scalability, since microservices can more readily be developed and plugged into the existing architecture
 - AWS provides a service called CloudWatch, which supports logging for many of the other microservices. This can be utilized to create organized logs for all your resources, speeding up debugging for the entire system and tracking points of failure in production

John

- Full Stack Development
 - For me, this project involved learning every facet of full stack development such as frontend development using a framework (Vue), backend development, and working with Amazon Web Services.
- Storyboards are extremely effective for managing a project
 - Dividing each task into storys and using a board to visualize what stage a story is at, what is required to complete the story, and who is working on the story proved very beneficial when organizing our project.
- Having multiple people work on one branch can get complicated
 - Strong understanding of git is important in development as it is easy to overwrite files that you shouldn't or accidentally pushing files that should not be pushed, which can heavily affect your partners work as well as your own.
- Effective communication from all members involved in a project is vital
 - Poor communication leads to slow development, errors in design/implementation, and overall a poor product.

Noah

- Time management
 - There were many smaller technical issues that would get in the way of the main issue you were working on. Ensuring you begin working early enough to handle these unexpected delays is important.

- Working remote challenges and skills
 - Many of our meetings were virtual and helping someone in person is a little easier than over the screen.
 - While we all shared the codebase, we each had different branches depending on the issue we were trying to solve. Because of this there can be issues if many people are trying to push their changes at the same time.

Meeting Dates

Client

Date	Discussion Points
April 5th, 2022	<ul style="list-style-type: none">• Gave a breakdown of all features and current limitations of software• Discussed Beta testing setup and potential dates
April 11th, 2022	<ul style="list-style-type: none">• Gave demo walkthrough of all features• Decided that Beta Testing will occur sometime after the showcase• Client would like more features implemented and time to experiment with the new event management system before switching from their current registration system

Faculty Advisor

Date	Discussion Points
April 16th, 2022	<ul style="list-style-type: none">• Presented Milestone 6 Progress• Requested feedback

Feedback for Milestone 6

Client

- Pleased with the features implemented throughout the course of the project and the addition of the Accountant role
- The automatic Cardea spreadsheet update feature will need to be revised in the future, since Cardea only reads the spreadsheet once (rather than continuously) to generate a CSV file per participant
 - An alternative would be to synchronize a shared drive, where participant CSV files are published
 - Volunteer would sync with drive, or download the needed participant to initiate the Cardea software
- Future needs for project include:
 - Additional online payment options, such as Apple Pay and PayPal
 - Implementing a long-term storage solution for past events/participants, such as AWS S3 Glacier
 - Creating a Admin UI / role to approve deletions for events and perform other administrative tasks
 - Possibly integrate web application into WWPF's current website, replacing Acuity for event management / registration

Faculty Advisor

- Task 1:
- Task 2:
- Task 3:
- Task 4:
- Task 5:
- Task 6:
- Task 7:

Faculty Advisor Signature: _____ Date: _____

Evaluation by Faculty Advisor

- Faculty Advisor: detach and return this page to Dr. Chan (HC 214) or email the scores to pkc@cs.fit.edu

- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Carlo	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Chris	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Drew	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
John	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Noah	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

Faculty Advisor Signature: _____ Date: _____