Music Matters Booking System

Architectural Spike Report

Authors:
Byron Prather
Jesse de Melo
Quinterious Hall

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System Metaphor

Completed by Byron Prather

We want to design a web application booking system that allows a user to record and display artist names, performance times, dates, and locations. All of this information will be displayed in an interactive calendar format. We also intend to add a feature that will automatically create and send email invoices and performance confirmations to a number of individuals as determined by the user. This web application will work together with the previously developed iOS application to provide functionality both on the go, with a more robust computer functionality.

Cycle Intent

Completed by Byron Prather

The intention for this cycle was to read over and learn what foundation we had received from previous project groups. From their documentation we gained an understanding of the intent of this project and what they had accomplished and where we need to be headed. We also met with our sponsor Mike Moody. Mr. Moody expressed his content with the work of the previous group on the iOS application and his desire to have a more robust and functional web application. The previous group had left us with a starting point of the web application and a near complete iOS application so we all felt confident in our ability to see this project to completion.

Future Work

Completed by Jesse de Melo

Moving forward with the project, my team and I will be wrapping up the development of the web and mobile application by picking up where the previous team left off. Based on the final report of the previous team, the implementation of some of the existing features on the web application need to be completed. According to the document, these features include the ability to add and edit venues, add and edit clients, emailer, form creator, and the display of a calendar. For the mobile application, as mentioned by the previous team, the app is working as intended with a few styling issues that need to be handled. These issues were identified by Mike during his test of the app. The previous team provided a detailed list of the iOS app styling issues identified by Mike on their final report. My team and I will work to fix these stylistic issues and address any further issues with the iOS app identified by Mike during this term.

User Stories
Completed by Byron Prather, Quinterious Hall

Functionality
Name: Database Data Synchronization
- **Summary:** As a user I want changes I make on the iOS application to change data on firebase and therefore change data on the Web application. I also want the inverse to be true so that both properly display all scheduling data.
- **Description:** When a change is made to the Music Matters iOS app or the Web Application the corresponding change will be uploaded on Firebase. Loading the iOS app or Web app after this will display the new information.
    - Planned Hours: 3
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Name: Desktop Application Synchronization
- **Summary:** As a user, I want to have a desktop application that has the same functionality and interface as the mobile application.
- **Description:** A desktop application will be developed and modeled following the same interface criteria as the mobile application. The mobile app will be used as the starting point for the desktop application to be finished in later cycles.
    - Planned Hours: 6
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Reliability

Name: Database Security
- **Summary:** As a user, I want the application to have a database that is read and write safe.
- **Description:** Database information will only be accessible to authorized users, i.e. an admin role.
    - Planned Hours: 2
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Name: Data Transfer Reliability
- **Summary:** As a user, I want to be able to use both applications concurrently and have the data be consistent between mobile and desktop versions.
- **Description:** Both the mobile and desktop application should display the same information regarding bookings and should not have any inconsistencies.
    - Planned Hours: 3
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Usability

Name: Cross Platform Compatibility
- **Summary:** As a user, I want to be able to access the application on both a mobile and PC platform and have them in sync with each other.
- **Description:** Whenever a user wishes to see a calendar with booked artists, they can either view the calendar on their mobile device or personal computer and should easily be able to access both platforms.
    - Planned Hours: 3

- Planned Hours this cycle:
- Actual Hours:
- Hours this cycle:
- Coder(s):
- Tester(s):
- Reviewer:
- Status: Not Started.

Name: Ease of Use
- **Summary:** As a user, I want to easily be able to add, modify, search, or edit calendar information when dealing with bookings in the application.
- **Description:** The calendar for the booking system should be easy to update, as any changes with any bookings or the venue should be able to be changed in the application relatively quickly
  - Planned Hours: 2
  - Planned Hours this cycle:
  - Actual Hours:
  - Hours this cycle:
  - Coder(s):
  - Tester(s):
  - Reviewer:
  - Status: Not Started.

Performance
Name: Load Time Optimization
- **Summary:** As a user, I want the application to load data on the interface seamlessly without any issues.
- **Description:** The application should not take a while for a user to access information about bookings or to update calendar information.
  - Planned Hours: 3
  - Planned Hours this cycle:
  - Actual Hours:
  - Hours this cycle:
  - Coder(s):
  - Tester(s):
  - Reviewer:
  - Status: Not Started.

Name: Intuitiveness
- **Summary:** As a user, I do not want to have to figure out how to use the app. I want it to be really easy to understand how to navigate the application and find what I'm looking for.
- **Description:** Make the app really easy to use by providing obvious paths for the user to know where to go and how to find what they are looking for.
    - Planned Hours: 2
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Supportability

Name: Offline Support
- **Summary:** As a user, I want the mobile application to have some offline functionality.
- **Description:** The application should be able to display calendar and other static data while the user is offline. If the internet is lost, the user should still be able to access some aspects of the application.
    - Planned Hours: 4
    - Planned Hours this cycle:
    - Actual Hours:
    - Hours this cycle:
    - Coder(s):
    - Tester(s):
    - Reviewer:
    - Status: Not Started.

Name: Logic Error Handling
- **Summary:** As a user, while adding data to the application's calendar, I want the program to be able to identify any overlap or errors with the logic.
- **Description:** If a user is adding a booking to the calendar that interferes with another event, application should be able to identify this and let the user know they have a booking already scheduled for the specific date and time.
    - Planned Hours: 4

- Planned Hours this cycle:
- Actual Hours:
- Hours this cycle:
- Coder(s):
- Tester(s):
- Reviewer:
- Status: Not Started.

Design Documentations
Completed by Jesse de Melo

As far as the design documentation, we anticipate that there will not be any changes in the design of the web and mobile application done by the previous team. The diagrams and architectures provided by the previous team on their final report are suitable for the Music Matters web and mobile application. However, a few alterations will be made in the user interface design of the mobile application due to stylistic issues. The existing diagrams and architectures of the web and mobile application may be altered in case Mike requests for some changes or addition of new features in the application.

Management Plan
Completed by Byron Prather

Going forward there will be a number of tasks we must accomplish to finish the web application development. The following will cover two parts of our management plan. First, our communication structure, and second our broad task board overview.

Communication Structure:

We intend to have regular meetings with our sponsor, Mr. Moody on mondays in the afternoons or early evenings as fits everyone's schedules. Additionally we will be communicating with our sponsor throughout the week as issues and milestones arrive. These messages will be sent over email. For our team communication we have informal access to communication over discord to reach out as necessary throughout the week. In addition we intend to have regular weekly meetings on Thursdays or Fridays as we have time. During these meetings we will discuss progress made so far, and what we need to work on next. We will also update our sponsor after meetings to let him know what we intend on working on next.

Broad Task Overview:

Here below I have listed our broad overview of tasks that must be done in order to achieve completion of this project. Please note that at the current date no one has immediately grabbed these tasks, and that the order of these tasks are loose and may be subject to change as our understanding of the project and development of it change as well.

1. Develop skeleton web pages to house both the calendar and email interface.
2. Develop interactable calendar interface for the web application.
3. Configure calendar to read data in from firebase upon refresh and write information to firebase when submitted by users.
4. Develop automatic emailing function with ability to add and remove email addresses as needed by our user.
5. Establish two independent emailing lists with independent email addresses, one for invoices and one for performance confirmations.
6. Determine how users interact with the web application and configure the ability for an administrator to add and remove user accounts.
7. ---Additional Steps to be added here as Mr Moody requests changes or additional functionality.---
8. Final Testing Phase: Make sure it all works well without breaking.
9. Deployment.

**Please Note these are our original thoughts as to what tasks need to be accomplished and the order in which they will need to be handled to achieve our goal, as such they are subject to change.

Risk Mitigation
Completed by Byron Prather

To lower our chances of issues and errors that may arise throughout the development process we will be taking a slow and steady approach. We will be emphasizing analysis, peer review, and periodic testing throughout the project's lifecycle. Continuing constant communication between our team and the sponsor will decrease the risk of any ambiguity about our deadlines, requirements, and expectations for the project and will allow us to avoid any setbacks during our development process. Risks that will arise during the development process are yet to come but will be highlighted and discussed in this section as they do. In the future we will be updating this section with more of the specific steps we took to handle risk mitigation.

Lessons Learned
Completed by Quinterious Hall

During the architectural spike, we identified a number of components that are imperative in order for us to be successful in completing our project. One of the components is having effective communication, which is arguably the most important key for any group to have while working towards a common goal. Effective communication definitely allows for easy tracking of cumulative progress and allows the entire group to hone in on any issues or roadblocks that arise. This also helps us to be strategic about deadlines and to make sure everyone is actively contributing to the project. We have also identified being proactive with our sponsor as a component that will improve our chances of success. Staying in constant communication with the sponsor removes any ambiguity about deadlines, requirements, and expectations surrounding the project and allows us to ensure the sponsor is satisfied with our work.

Test Documentation
Completed by Quinterious Hall

TBA - This section will change if we end up with a computer program interface that differs from the interface of the current mobile application.

If the interface does not change:

Because of the nature of this cycle, there is not anything that needs to be tested at the moment. We have uploaded the application's code into Expo in order to get it back running in TestFlight, an emulator for iOS application development. Much of the potential testing will be with translating the mobile application into a desktop application in future cycles.

Meeting Minutes

Written by Byron Prather

  <u>8/27/2021: From 6pm to 7pm</u>
    Goal: To discuss Mr Moody's initial request to get the iOS application back on test flight as soon as possible.
    Description: We met and discussed how we would go about getting the application back on iOS Test Flight for our sponsor as soon as possible.

  <u>9/3/2021: From 10am to Noon</u>
    Goal: To discuss the Arch Spike written report submission and get it finished and sent to the sponsor for approval.
    Description: We met and discussed who would take writing for different parts of the report, and finished most of it. With the intent to send it to Mr. Moody for approval by no later than 5pm.

Note: Group correspondence happens informally over discord much more frequently than meetings such as above. Information from discord discussions can be provided upon request.

Sponsor Approval
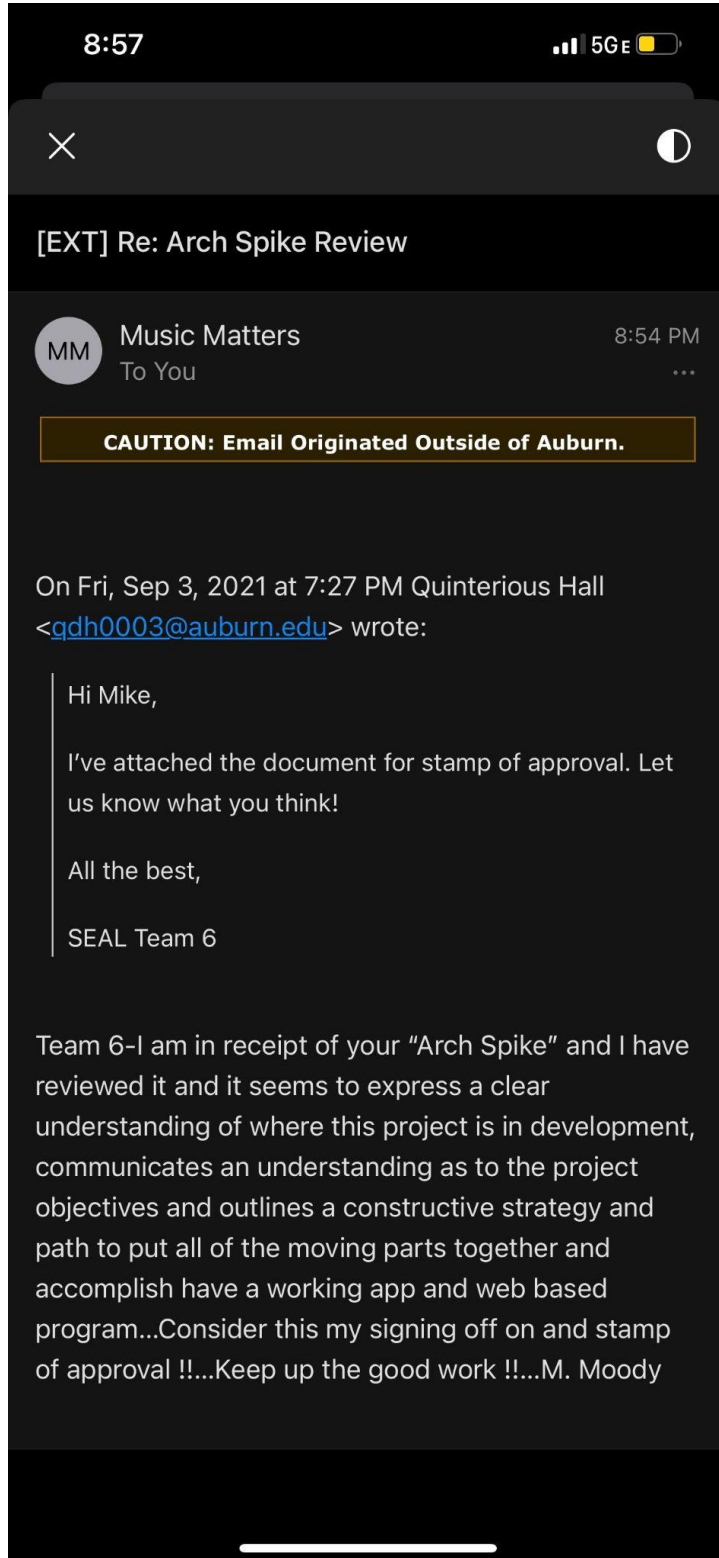
*Note: Sponsor refers to us as Team 6 since we're the 6th team he's worked with