Mobile and Web Timecard

Project plan

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1 Introductory Material

1.1 Acknowledgement

Genova Technologies has provided and will continue to provide significant guidance in the form of technical advice, tools, and financial aid. Bi-weekly meetings are held to review the progress of the senior design team, and more frequent meetings will likely be necessary with our technical lead from Genova, Tom Sidebottom, to continue answering our technical problems. Genova has set the senior design team up with accounts in the Agile tool Rally to allow us to document our progress in a uniform way. Genova has committed up to $20,000 in financial support to aid in the completion of the project.

1.2 problem Statement

The problem we are aiming to solve with this project is Genova Technology's lack of user-friendly and well-liked method to track time spent on projects. Genova previously had a time card which most employees enjoyed using. A change in the accounting software used by Genova left this old time card incompatible with the new accounting software. Because of this incompatibility Genova was forced to go back to an old and disliked time tracking application. Genova hopes the senior design team can develop an iOS, Android, and web time tracking application that is compatible with the accounting software and user-friendly.

The senior design team will solve this problem by developing an iOS, Android, and web time card application. We will accomplish this by utilizing industry standard software development tools and an Agile development methodology set up with 2-3 week long development sprints, the tool Rally will be utilized to implement this Agile methodology. Data will be stored and retrieved to and from a database server hosted via Amazon Web Services. The back end code base will be built on a linux server and coded in Java. The front end will be coded differently depending on whether it is the iOS, Android, or web app.

1.3 Operating Environment

Since this is a software project the operating environment is fairly straightforward and we don't have to worry about any physical conditions. The iOS application will run on an Apple iOS device, the Android application will run on an Android device and operating system, and the web app will run on a standard web browser.

1.4 Intended Users and Intended uses

The end users for this product will be the employees of Genova Technologies as this is an internally used application. The mobile and web time card application must provide easy and user-friendly functionality to allow the Genova employees to quickly and efficiently track their time spent on different projects. Additionally it must provide a simple way for

the administrators to login to the application to review and approve the timecards. If a timecard is denied, there will be an option to add a note describing why it was denied, and the timecard will go back to the employee to be changed and resubmitted. Once timecards are approved the data must be exported to the compatible accounting software so Genova's customers can be properly billed for their time.

1.5 Assumptions and Limitations

Assumptions:

- Application will only be used by Genova employees and therefore the maximum number of concurrent connections will be limited number of employees and consultants
- Users will not access time-card application from multiple platforms (on the same account) concurrently
- Multiple language support not necessary
- Voiceover support not necessary
- Application will not be used outside the United States

Limitations:

- Time-card application will have a minimum of feature parity with old system
- Time-card application must run natively on iOS and Android operating systems
- Server costs will be covered by client

1.6 Expected End Product and other Deliverables

The end product will be an iOS, Android, and web application which will store and retrieve data to and from a server hosted via Amazon Web Services. This application will provide an easy and user-friendly way for Genova's employees to track their time spent on different projects. Once the timecards have been completed the administrator will review the timecards and have the option to approve or deny them. Once approved the timecard data will be sent to the accounting software so the customer can be properly billed.

The mobile and web timecard will be completed by the end of April 2018.

2 Proposed Approach and Statement of Work

2.1 Functional requirements

The Genova time card should be accessible through Android devices, iOS devices, and through a web portal. It must be able to log times related to the projects worked on and any notes the developer might have.

2.2 CONSTRAINTS CONSIDERATIONS

The time card should mirror the design from Genova's previous time card. The database should be quickly accessible and simple to use.

All coding standards will follow guidelines for their respective coding languages and abide by IEEE standards. No unethical practices will be followed and client data will not be shared.

2.3 TECHNOLOGY CONSIDERATIONS

iOS design requires the use of compatible Apple systems. Designing the iOS time card will force the team to delegate work to those with the hardware capable of running xcode. This may pose issues with cross-platform communication. Similar coding styles should allow for easier integration across multiple platforms.

2.4 SAFETY CONSIDERATIONS

All work performed is digital and presents no physical hazards to any party involved.

2.5 PREVIOUS WORK AND LITERATURE

There are hundreds of similar time card systems that companies use. Genova had a previous system, but due to software updates it was no longer compatible. They provided the design notes on source material of their previous time card system to help guide us.

2.6 POSSIBLE RISKS AND RISK MANAGEMENT

The largest concern that may slow down the project is knowledge of the tools we have. Not all of us are experts in iOS/Android development, server and database management, web development, etc... Other than that, with the project being entirely software built, there aren't any major concerns.

2.7 PROJECT PROPOSED MILESTONES AND EVALUATION CRITERIA

Android functionality, iOS functionality, server and database functionality, and Web service functionality are the main milestones. We will be testing that they work as intended by Genova, that they work with the other parts of the project, and that they work with Genova's systems overall.

2.8 PROJECT TRACKING PROCEDURES

We will be using a service called Rally that is similar to Trello used in ComS 309. We can have a list of user stories that need to be worked on and assigned in one section, what is being worked on and by who on another, and then what has been completed and by who in the final section.

2.9 OBJECTIVE OF THE TASK

Our end goal is to have a software product in the form of an app. It will be multiplatform so that any Genova employee can use it. The overall style and implementation of the app is essentially all up to our team to design.

2.10 TASK APPROACH

The project will be broken down into tasks or user stories organized by the tool Rally. Each task will be a single feature of the overall application (i.e. Design database tables and relationships, etc.). Each user story will be assigned a point value that correlates to the amount of time a task is estimated to take.

2.11 EXPECTED RESULTS AND VALIDATION

By the end of the spring semester, we expect to have a working time card system working on iOS, Android, and Web and have it available for Genova employees to use.

We are expected to create the fully functional, multi-platform electronic time card system for Genova's company use. Genova employees will be able to clock in and out through the app on iOS and Android devices as well as online. Our solution will be confirmed as working when it is able to be integrated into their internal systems fully functional and without causing any issues with other systems they have in place.

3 Estimated Resources and Project Timeline

3.1 PERSONNEL EFFORT REQUIREMENTS

Include a detailed estimate in the form of a table accompanied by a textual reference and explanation. This estimate shall be done on a task-by-task basis and should be based on the projected effort required to perform the task correctly and not just "X" hours per week for the number of weeks that the task is active

3.2 OTHER RESOURCE REQUIREMENTS

Identify the other resources aside from financial, such as parts and materials that are required to conduct the project.

- Previous iteration design documents
- Amazon Web Service server
- Android Studio
- Mac computer with Xcode

3.2 FINANCIAL REQUIREMENTS

Any equipment necessary to properly test the time card, and any paid services for server access.

3.3 PROJECT TIMELINE

TBD

4 Closure Materials

4.1 CONCLUSION

Sum up your project plan. Briefly re-iterate your goals for the project and the plan your team has put in place to achieve these goals.

– This component should leave the audience with the belief that the project is important and that the project team's proposed approach will solve the problem satisfactorily.

– One way to accomplish this is to briefly summarize the problem, the proposed approach, and the anticipated solution. Like the rest of the project plan, the closing summary should be well and tightly written.

4.2 REFERENCES

4.2 APPENDICES