Software Engineering Senior Design 1 Plan

Project Title:
ITW Assessment

Software Team Members:
Cianna Grummer – Cgrummer2019@my.fit.edu

Advisor:
Dr. Gu – gul@fit.edu

Client & Affiliation:
Dr. Gu, Bela Perdomo, Alec Anzalone, Kiera Ceely, Caleb Phillips
Advisor and BME students at Florida Tech

Client Meeting Times:
Wednesday 1pm-2pm, Mondays 3pm-4pm

Goals & Motivation:

The current system to diagnose Idiopathic Toe Walking is a practitioner will watch a patient walk and based on the doctors experience they will categorize the patients ITW severeness. This way of diagnosing patients is an unreliable and inconvenient way of diagnosing. With the ITW Assessment device and web application patients will be able to collect their data from home upload it to the website where their data will be compared to a baseline average and be able to quantitatively diagnose the patient. Since ITW primarily appears in patients with Autism this home diagnosis would eliminate breaking the patient's routine by taking them to a doctor's office and save all patients time by not going into a doctor's office.

Approach:

I am going to use AWS Amplify to create a webpage that allows two different kinds of users to interact with the system with different results. Patients are going to be able to access their own information with simplified data results that are easy to understand to the everyday user while the practitioner will have multiple patient results and be able to look patients up by name to see a more detailed data page.

Patients' data will be accessed securely as well as practitioners' logins to ensure no data leaks through a secure username and password system

Functionalities:

Gives Patients and Practitioners a simple and easy to use website to access their personal data and test results. Practitioners will be able to easily look for individual patients and pull up simplified and complex data regarding that patient while patients can easily view their simplified data in an easy-to-understand way and see their test results. Patients' data will be secure and only viewable by them and their practitioner. Patients will also be given easy to find valuable resources on how to use the ITW Assessment Device correctly on the website.

Algorithms and Tools:

- AWS Amplify will allow the web application to be accessed by anyone with a link and will allow an easy compatible way to connect the database to the website. Amplify will deploy the html files I write and allows version control as well as connectivity to GitHub for easy development. It also offers a variety of helpful tools such as integrated API calls.
- AWS RDS will be instrumental in setting up the SQL database and connecting the data to the web application.
- GitHub will be useful for version control of the website's code as well as sharing the documents with the rest of the team. In using GitHub I will be able to revert the code back to previous versions if an error occurs or needed.
- Visual Studio Code will play an integral part in creating the html files that need to be uploaded to the AWS Amplify to create the website. VS code offers many helpful tools to expedite the coding process.

Challenges:

- I have little experience with html and CSS regarding creating a website. To overcome this challenge, I will be using online resources such as GeeksforGeeks.org and other online tutorials and resources to learn the coding languages enough to complete the website.
- I have only ever used AWS for a database and never used the AWS Amplify application. AWS offers many tutorials through their website as well as third party tutorials on YouTube. AWS also has a long list of help options to learn how to use Amplify or fix any issues I might encounter while creating my web application.
- I have never connected a database to a website, but I have already found many tutorials from AWS explaining how to connect AWS Amplify to their database host AWS RDS.
- I have never created a login, retrieved a password, or encrypted data to ensure security. To learn more about this topic I will use online resources to research the steps I need to create a successful secure login. I have already found multiple resources online such as W3Schools.com.

Milestone 1:

Compare Technical Tools:

Web Hosting Options:

- Vercel
- Google sites
- AWS Amplify

Database Hosting Options:

- MongoDB
- Google sheets

- AWS RDS

Demo: provide a demo of the website being hosted.

Resolve Technical Challenges:

- Learn Html, CSS
- Learn AWS Functionalities
- Research login and security

Collaboration tools:

I am using GitHub to share the code and hold updates and different versions in case we need to revert the project back to a previous version. As a group we are using Text message to communicate as well as meeting in person to go over project details. I will also be sharing the link to the web application through email and text messages.

Documents/ Plans to be Created:

- Requirements Document
- Design Document
- Test Plan

Milestone 2:

Implementation: Create the login for patients and practitioners

Test: Login functionality as well as security

Demo: Provide a demo of a successful login

Milestone 3:

Implementation: Connect database to website

Test: Test the database functionality through the website

Demo: Provide evidence of database functionality

Task Matrix not included because there is only one software team member

Approval from Faculty Advisor

"I have discussed with the team and approve this project plan. I will evaluate the progress and assign a grade for each of the three milestones."

Signature: _____ Date: _____