



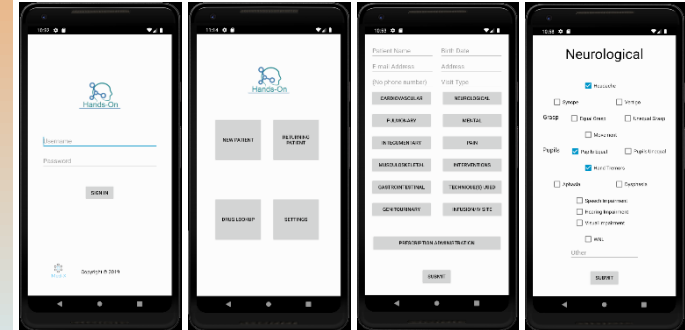
Executive Summary

Many systems, currently in use, employ user interfaces that behave unintuitively. This project's goal is to create a system with an intuitive user interface such that more time can be spent caring for patients than handling the system. This project will consist of a mobile app that will run primarily on devices running Android operating systems. This will allow for a mobile system that can be run on many hardware systems, such as personal smartphones or company dispensed tablets, and make use of touchscreens built into such devices to aid in ease of use. The user interface is the primary design goal, with HIPAA compliance and a robust back end to support the ability of the system to provide the proper aid to medical professionals.

Conceptual Design Phase

First, we worked on the project charter where we identified the preliminary aspects such as vision, mission, success criteria, related work, cost, etc. Then, we worked on the system requirement specification where we gathered and analyzed requirement based on customer, packaging, performance, safety, maintenance, etc. After that, we worked on architectural design specification where we divided our application into various systems and subsystems. Then, we worked on detail design specification, where we worked on our systems and subsystems in detail to begin the development phase with full throttle.

Prototype & Test



Background

As a cross-disciplinary project, our sponsor is the UTA CSE department and our customer is the UTA Nursing department. At UTA there is a tradition of healthy inter-disciplinary relationships and one instance would be that between the CSE and Nursing departments. As such our team members and the Nursing department do not have a relationship, but Senior Design teams of the past have worked with the Nursing department on several VR projects due to which there is an open channel of communication and good understanding between both parties. Hence the Nursing department wants us to work on this charting system because they realize the need for an intuitively designed portable charting system and they trust that we can build the system of their desire feasibly with high quality.



Figure 1: Application Logo

Detailed Design Phase

- Our solution is fast and intuitive as compared to most of what are already in market. We've divided the program into model, view and controller of an android app. There is also a separate backend program in Node.js running in the cloud to perform the CRUD (create, read, update, delete) operations on the cloud database so that the application and data consistency can be maintained when user signs in using different devices.

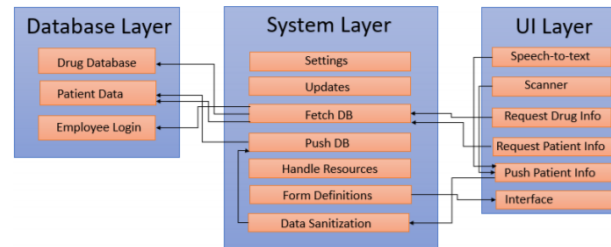


Figure 2: Subsystems

Conclusions

- The end-product of this project will be a mobile app that runs primarily on android tablets and a backend server to maintain data consistency over multiple devices. The code is maintained privately at a GitLab repository.
- The design is intuitive, and it matches the client's original goals in aspects that it is fast and easy. The application is HIPAA compliant which was one of the major requirement.
- We learned collaboration in a large group, risk identification and mitigation, etc. While this project was severely impacted by COVID-19, in ways that members couldn't meet and exchange the testing platform, we see a great prospects for this application in the future specially since there aren't much software made in this aspects.
- Thanks to the Rae Jeffers from Nursing Department for sponsoring our project and coordinating with us along the line.

References

1. N/A