

*Design Document – 3rd Year Project*

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*Table of Contents*

*Introduction ............……………………………………………………………………………………………………………….. 1*

*System Requirements ……………………………………………………………………………………………………. 2*

*Technology Used and Why ……………………………………………………………………………………………………. 3*

*Architecture of the Solution ……………………………………………………………………………………………………. 4*

*Design Methodology ………….……………………………………………………………………………………………………. 5*

*Features of the Implementation ………………………………………………………………………………………… 6*

*Limitations …………………………………………………………………………………………………………………………… 7*

*Known Bugs …………………………………………………………………………………………………………………………… 8*

*Recommendations for Future Development …………………………………………………………………………….. 9*

*Conclusions …………………………………………………………………………………………………………………………… 10*

*Introduction*

AttendU is an attendance app for teachers and students. This software design document is to provide a description of AttendU, providing insight to the structure and design of the app.

*Features*

Here are the features that we intend to include in our app;

* Log in
* Students can take attendance.
* Students can view their grades.
* Teachers can view student attendance.
* Teachers can edit student’s grades.
* Accounts are created and edited by the administrator.

*Technology Used and Why*

AttendU was developed using Ionic 3 and employs Firebase’s Realtime Database. The API we used was CRUD.

**Ionic 3**

Ionic is an HTML5 based mobile application development framework which is used to develop hybrid mobile applications. Hybrid apps have many advantages over pure native apps, specifically platform support, speed of development and access to third party code.

We decided on using Ionic for a number of reasons;

1. Ionic allows you to create both Android and iOS devices using the same code base.
2. It has stabilized quite a bit even in the last year.
3. Ionic uses Angular, which is one of the best frameworks for modern web development, so we figured it would be beneficial to become familiar with it.

**Firebase Realtime Database**

The Firebase Realtime Database is a No-SQL cloud-hosted database. We were attracted to this database because it is compatible with Ionic and we really liked the real-time aspect of it. With some data binding you can connect your views with your data and these views will change automatically when the data changes. The performance of Firebase was another drawing point, and in our experience the performance was consistently great, although Firebase is designed with millions of users in mind, so we barely scratched the surface of what Firebase is capable of.

**CRUD**

When searching for an API to use, we considered using the RESTful API because of its robustness, but decided on using one that we hadn’t any experience with. We chose CRUD because of its prevalence and because it suited the needs of our project.

*User Interface*

**Original Design**

When we started designing the layout for AttendU, we had originally intended on using tabs to separate different features. We created a basic skeleton that we intended to use in the development of the app.

Below is a basic view of how we had originally intended the app to look.

A screenshot of a cell phone

Description generated with very high confidence

A screenshot of a cell phone

Description generated with very high confidence

When we started developing the app, we found that tabs were too so we decided to use the more fluid system of page navigation.

**Final Design**

The design we settled on uses lists to display information and most functions have their own page.

Below is the final layout of AttendU, complete with a snazzy logo.A screenshot of a cell phone

Description generated with very high confidence*A screenshot of a cell phone

Description generated with very high confidence*

Once the user is logged in they are brought to either the student home page, teacher home page, or admin home page depending on their account type. From here the user will be able to navigate to any page they have access to by virtue of their account.