**COMP 2920 : Software Architecture & Design**

**Assignment 4**

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Explain the product architecture? Describe at a very high level the components / modules that will interact in your system. How are you going to implement the functionality? What is interesting about this project from a technical point of view? Optionally, what languages/toolkits do you propose to use for the development? Any special quality requirements? Any specific domain requirements etc.

**Product Architecture**

Our project uses a Client – Server Architecture. The users will be using for the client a mobile device running an Android OS. The mobile application part was written in Android Studio Version 3.0.1. There is also an administrator whose client is a web interface running in a Browser on a PC or laptop. Both the user and the administrator on the client side will be connecting to firebase on the server side. This connection will be over TCP and HTTPS respectively. Firebase is set up and run by Google. The internals of how and where things are stored in firebase is hidden from us. We have access to the firebase tools and API. They provide API for several different programming options. Using firebase also helps to set up local storage of the data on the mobile device.

The parts of Firebase we are using are the user authentication and the Firestore database. The authentication part takes care of a log-in screen, storing current users, recognizing users, creating new users, and a forgot password tool. The authentication part of firebase uses SHA-1, 160-bit, cryptography. The firestore part takes care of the database and database rules. It stores the data in a NoSQL type database. It uses for commination in and out the JSON datatype. One of our reasons to choose firebase is its’ scalability. For small use, such as developing the application, it is free to use. As the number of users and the amount of communication being done goes up, then there are various price plans to match the amount of use. This makes firebase a good option when developing mobile applications using a client server architecture.