## 3.2 Development Platform

Our mobile application is being built within Android Studio, the official integrated development environment for Google’s Android operating system. Android Studio is based on JetBrains’ IntelliJ IDEA software with adjustments made specifically to target Android development.

### 3.2.1 Mobile Application

Prior to development of application functionality, we focused on designing the visual aspects of the application. In creating a mockup, we were able to set visual requirements, including the fonts, colors, content layout and navigation pattern styles. Following these requirements is crucial as we find that the visual appearance of an app is very important for user attraction and retention.

Once the design and visual requirements were sorted, application development could start. In choosing a development language, there were a variety of requirements that had to be met. We wanted to work with a language that we were already familiar with (given the time restraints of the course), that was robust, and that worked well with the Android development environment. Given these requirements, the obvious choice for us was to use Java. We have plenty of Java experience from previous courses in our program, we know that it is a deeply powerful language, and Android (and the majority of Android applications) are written in Java. For design aspects, we chose to opt with XML, as it is most often coupled with Java in Android development.

The application includes a login activity, which allows the user to register and authenticate an account against the database service. After registering, the user is able to connect the smart watch device to the application, and the syncing of health data begins.

The application also includes a data visualization activity, which maps out key user health stats over a selected period of time and displays them graphically. The data is fed to the application using the aforementioned sensors – the TMP006 supplying temperature data, the ADXL345 supplying movement data and the SEN11574 supplying pulse readings.

The application also has a variety of activities that the user can interact with. Each activity will display a different reading and will complete different tasks to achieve what we want the mobile application to do, each case is presented below:

Temperature tracking

· Tracks and displays the user’s body temperature

Steps Taken

· Tracks the amount of steps the user has taken over a given interval

Heart-rate

· Tracks the user’s pulse, with distinction between resting pulse and pulse during activity

Database design will be based primarily around each sensor's data and values they record it will also record the date the data was logged via a timestamp.



