**Challenges faced:**

This project, as the requirement suggests, is based on android and although we are familiar with java we faced a few challenges. Development on android is very different from what we have done in the past. First of all, we had to learn the extensive library of classes and functions that java provides in order to make what we thought of. Using these classes for our own benefit is bit daunting at first, but comes along very nicely overall. Going through this learning curve was very exhausting but rewarding. Getting to what you need is quite a challenge, so one has to come up with workarounds that do not modify the requirements too much and go with the implementation well.

Secondly, XML is a totally new markup language that we had to learn in order to make the user interfaces. This is very similar to HTML that we have done in the past but there are some key differences, for example the styling method is very different. This required us to learn and tackle the challenges it takes to learn a new language.

Since this is our first time building an app for a mobile device, the process looked quite different from what we are used to. Setting up android studio was a challenge in itself. Deciding to use virtual devices revealed hardware problems and didn’t go well with the agile approach we were going for. So we decided to use physical devices and debug the application that way. Constantly running the app on the device to make sure we get the functionality we are hoping for.

There were off course other challenges as well. Collaborating on git hub was a first time for us. Managing the versions and keeping it all in line was a nice experience and we learned long the way.

**Remaining work and future planning:**

Up till now the interfaces for the user have been defined. The user can now have a clear idea and see what the final structure of the app interface will look like. The next step would be to create the back-end of the application. This will have the user database and the devices database, that will be responsible for storing and managing the device and user data. This will also provide security that will come as the user authentication and administration privileges.

This app provides a solid platform for anyone who is interested in making a self-contained home automation system. This app is a very solid base to provide the user with the experience to have control for his entire home.

Since this app is aimed at handling all the user stories, the next logical step would be to provide the necessary interfaces for it to connect and control appliances. This could very well be Bluetooth, wifi, radio or any other technology that is both reliable and robust. Because these are already available in any android phone/table in the market, it would be easy to integrate the interface with the application.

Secondly, the hardware required to run this project is out of the scope of this project, as a matter of fact, it is out of the scope of computer science. So, this should be the next step which will nicely bring together all the aspects of the project. The hardware would include a microcontroller network that will talk to the phone via the interface mentioned above. These microcontrollers will then be responsible to directly control the appliance the user wants to control. These devices could include transistors and relays that would play nicely with the appliances and control them at the user’s command.