Engineering and Applied Science

CS1410 – Java Program Development

**Individual Report**

Rebecca Jane Holmes

160041808

This report will discuss how I contributed towards the Java group project of creating a petrol station simulation with five other group members as well as what I have learnt from this experience.

In our group’s first meeting, we discussed what each member’s role in the group would be, including the main programmers, testers and the GUI developers - I was chosen to be one of the main programmers alongside Matthew Barlow. We set up our GitHub accounts so we could share and edit the work we have done with each other and this is the platform we used for the whole Java project.

As a group, we covered various possible designs for the program and the classes we could implement and with each class we created CRC cards containing the responsibilities and collaborators agreed by every group member. I proposed that we could have a Station superclass for the Pump and Till classes, but instead we thought it would be more convenient to put the code for that class inside the Simulator class. We laid out the CRC cards and arranged them in the way we believed each class should be linked to each other. By doing this, we realised we were missing some classes – a Queue class and the Station class, so we created CRC cards for these.

After arranging the CRC cards and connecting them together, we made a skeleton for every class on Eclipse containing the fields and methods we think would be needed for every class – I focused on writing the code for the Truck and Motorbike class. This allowed us to use the plugin on Eclipse to form a rough UML diagram. At first, the diagram did not appear how we thought it would – some classes were not connected to each other, so we had to make some changes to the code to fix this issue.

In the next meeting, we added more code to each of the classes – I added any extra fields and methods to Vehicle and its subclasses that were not written before and fixed some errors as well as removing any unnecessary methods, meanwhile Matthew was focusing on the Simulator and Station classes. We frequently discussed as a group about the program and shared new ideas or any problems we had with the code. Matthew and I advised the testers, Rajan Gopalji and Hannah Miller, about what methods and classes they should create their test classes for and helped them when needed.

Matt and I continued editing and developing the program as we found some of the logic was incorrect as well as fixing minor problems and improving the text interface. Furthermore, I added some code to the main method which outputs the simulation results into a text file and updates with every simulation run.

I learnt from this project how important it is to be constantly communicating and meeting each other consistently every week. By meeting up for around six hours every week, we managed to keep up with the workload at a good pace.