**CS1410: Java Programming Development**

**Petrol Station Coursework: Level 1 Submission**

**Personal Report**

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I feel as if I’ve partaken in every opportunity I’ve been presented with throughout the development of this project. When initially analysing the task, our approach was to read through it individually and then come together, each with our own interpretation of it and cross-reference our ideas to ensure we each fully understood the task and how we were going to initially tackle it. We each contributed at this stage. I pointed out certain parts of the criteria; from identifying the basic fundamentals, to recognising the additional criteria we needed to meet for our aim of level 1 submission.

When creating and developing our design for the task, we each went away and thought individually about what would be best for the task, then held a group meeting to discuss our different ideas and how we felt the design should go. I explained how I felt this simulation would be best designed – for example, using abstract classes and inheritance to focus on minimising code repetition and looking to both minimising coupling and maximising cohesion. In general, looking at each aspect of good coding practise and looking to make our design conform to this. As a group we used the best elements of individuals ideas to finalise our design.

When creating the project, we split the task down into subsections which enabled us to work on different elements of the code in isolation without interfering with one another (after agreeing on names for global variables). We were each delegated the task of writing skeletons for some of the different classes. Personally, I modified part of the vehicle class, the classes for a couple of the vehicles, as well as the class for the pump. Once past the skeletal design, I worked specifically on the Graphical User Interface (GUI) alongside another group member: Nkosi Garcia.

We carefully went through the specification to ensure we included all the necessary requirements of the GUI. We then came up with the initial design including the classes we felt we would need, the different components and features that it should include, as well as the relationships and links each would have with one another. We then separated the task to enable us both to work on it at the same time. I worked on the back end, managing how data would be taken from the simulator to the GUI and how each of these would be displayed – generally how the GUI would actually work. Meanwhile, Nkosi worked on the front end of the GUI, focussing on the layout, the aesthetics and how the user would interact with it. We then met in the middle to link our two sections together, writing ActionListeners for the different buttons that would ensure the methods and elements that I’d written for the GUI would be triggered appropriately when the user clicked/input to the corresponding parts of the GUI.

As a group, we discussed what tests we should have and which elements we needed to test. The writing of the tests was completed by other group members whilst we worked on the GUI. Everyone worked on the documentation, each writing on the relevant project section we worked on. Together, we were able to test the completeness and comprehensiveness of the documentation to ensure it was suitable and adequately explained our final project. The final stage was the report. However, as for the final report, we divided it into sections and were each responsible for working on our own aspect before collectivising our work to form the final report.

From carrying out this implementation, I’ve learnt a range of valuable skills for group working and coding. I’ve learnt how to plan code properly and efficiently from a specification. Thus, finding the coding itself a lot more efficient, to a much higher standard and conforming to good practise. I feel as if I’ve developed and learnt a lot in terms of my coding capabilities. In addition to this, I have also learnt valuable group working skills, ranging from communicating and planning to writing code as a group opposed to individually. This will of course carry immense value into future jobs, for my placement year and further in my career where working in groups is likely to be the norm.