Unit 7 - Reflection:

This was the hardest week since the beginning of this module, Unit 7. From the lecture cast, Debugging/Error Handling and Data Structures, a great starter for the upcoming learnings, I have covered important research in driverless cars, robotics, autonomous vehicles, data structure, implementations and storage data. This unit has given me valuable knowledge and skills for developing high-quality code and efficiently organising and processing data.

In addition to the theoretical understanding gained, I have also engaged in practical ePortfolio activities and hands-on coding exercises. This activity was the real challenge and a crucial piece of the study which was to discuss how data structures support object-oriented development and give examples of three different data structures to contextualise my response. The second part of the activity was to create a nested dictionary of data on cars within a Car class; extend this program to work with the dictionary by calling the following methods: items(), keys(), and values(). In my research, I reached a challenging point where I had to read an article by Kampffmeyer & Zschaler (2007) and create a program that recommends design patterns based on user input. This involved using a constructor to initialise attributes and assign values to variables based on the user's requirements. It was an intense but rewarding experience. These activities have allowed me to reinforce my learning and provided opportunities to showcase my progress through e-portfolio submissions.

The knowledge and skills acquired in this unit are valuable for developing high-quality code and efficiently working with data. I must continue practising and applying these concepts to strengthen my abilities further.

Looking ahead, the content covered in this unit will benefit the summative assessment in Week 11, where I can demonstrate my understanding of system design.

Unit 7 has given me a solid foundation in debugging/error handling, data structures, and data search. These skills are valuable for this course and applicable to real-world programming scenarios. Continuing practising and explore these concepts further are important to enhance my coding and data processing proficiency.

Reflecting on the challenges I faced this week while working on the driverless car research and design project, I realised I needed to provide valid evidence from my diagrams. Instead of focusing on presenting proper charts to showcase my design, I spent too much time researching and validating my report. It's frustrating that despite investing countless hours and the entire weekend, I presented a different study than required. However, I accept my mistake and believe we must learn from our mistakes. I hope to gain clarity from this experience and use it to improve my work in the future. I have attached my tutor's notes below this reflection.

Tutor’s feedback:

Outcome: 45 % (Fail)
Graded by Dr Oliver Buckley

Feedback comments:

The object model is a good start but you need to review some of the concepts. The current diagram contains a lot of inheritance, for example the user interface inherits from the control module and the sensor module. It's important to pay attention to the small details in these diagrams. I'm not clear on the inclusion of both an 'object model' and a class diagram?

The use case diagram is very simplistic and only contains a very basic set of use cases. This needs more information and clarity.

Again, the activity the diagram is very very limited and lacking in any real depth.

The sequence diagram is also very simplistic and does not demonstrate a deep understanding of the material.

The state diagram is reasonable and does demonstrate some level of understanding and appreciation of the underlying concept.

Generally, it would have been better to focus on the design elements, the coding is a little superfluous at this stage and would be better saved for the next assessment.