



COS20007

OBJECT-ORIENTED PROGRAMMING

Learning Summary Report

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Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

Self-Assessment Statement

	Pass (D)	Credit (C)	Distinction (B)	High Distinction (A)
Self-Assessment				✓

Minimum Pass Checklist

	Included
Learning Summary Report	✓
Test is Complete	✓
C# programs that demonstrate coverage of core concepts	✓
Explanation of OO principles	✓
All Pass Tasks are Complete	✓

Minimum Credit Checklist (in addition to Pass Checklist)

	Included
All Credit Tasks are Complete	✓

Minimum Distinction Checklist (in addition to Credit Checklist)

	Included
Custom program meets Distinction criteria & Interview booked	✓
Design report has UML diagrams and screenshots of program	✓

Minimum Low-Band (80 – 89) High Distinction Checklist (in addition to Distinction Checklist)

	Included
Custom project meets HD requirements	✓

Minimum High-Band (90 – 100) High Distinction Checklist (in addition to Low-Band High Distinction Checklist)

	Included
Research project meets requirements	✓

Declaration

I declare that this portfolio is my individual work. I have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: **Ta Quang Tung**

Portfolio Overview

This portfolio includes work that demonstrates that I have achieved all Unit Learning Outcomes for COS20007 Unit Title to a **High Distinction** level.

In this unit, I have completed all tasks from Pass to High Distinction. In all Pass and Credit tasks, I have demonstrated the five Unit Learning Outcomes to a high level. My custom program for the Distinction tasks meets all Distinction requirements and shows that I can apply all the ULOs of this unit. My Distinction custom program was further developed to the HD level, incorporating design patterns and increasing its complexity with additional features. I also extended beyond the materials presented in this unit by conducting a small research project on the performance of the collection classes offered by the .NET framework, allowing me to better understand the tools I was taught in this unit.

Task Summary

To demonstrate my learning in this unit, I would like the following tasks to be considered part of my portfolio:

- All Pass tasks (completed).
- All Credit tasks (completed).
- All Distinction tasks: Distinction custom program (completed)
- All High Distinction tasks: High Distinction custom program and Research project. (completed)
- Semester Test (passed)

Reflection

The most important things I learned:

In this unit, I learned the principles of object-oriented programming and applied them to build a complex custom program (a video game). I also learned how to apply design patterns to my application. By following the OOP paradigm, I found that the complexity of my programs becomes much more manageable.

The things that helped me most were:

What helped me the most in this subject was the book *Design Patterns: Elements of Reusable Object-Oriented Software* by Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides. It introduced me to a wide range of software design patterns and helped me implement them in my programs.

I found the following topics particularly challenging:

I found that the designation of responsibilities and collaborations to classes in my OOP programs particularly challenging. While the concepts of responsibility and collaboration are easy to understand, it is not always straightforward to assign them to classes in practice.

I found the following topics particularly interesting:

I found the topic of design patterns to be the most interesting. Design patterns help me organize my classes into logical hierarchies and add additional classes without breaking my application. In a way, design patterns are the glue that holds disparate classes together into a meaningful program.

I feel I learned these topics, concepts, and/or tools really well:

I learned the principles of inheritance and polymorphism really well in this unit. They enabled me to develop a custom program with a very complex class hierarchy but the classes and interfaces work seamlessly together. This unit also acquainted me with Visual Studio IDE and its features such as debugging and code testing.

I still need to work on the following areas:

An area I will need to work on is writing tests for my application. This unit introduced me to the practice of writing tests for my code through the SwinAdventure tasks. Ideally, tests should have been written before the actual code, but I always found myself writing tests after the code. Code should conform to tests, but by writing code beforehand, my tests conformed to the code.

My progress in this unit was ...:

My progress in this unit was quite consistent as I completed all of my tasks and submitted most of my work on time. The only tasks I was late were the Distinction and High Distinction ones where I needed time to perfect my work. I did not engage with my tutor as much as I should have, which might have impacted my progress on D and HD tasks. In future units, I will work more closely with my tutor to check my tasks and plan ahead to prevent late submissions.

This unit will help me in the future:

The OOP mindset I learned in this unit has improved my skills as a programmer. By organizing the components of my application into classes and objects, I can manage its complexity and work on each component independently. This unit has consolidated my understanding of the principles of high cohesion and low coupling I learned in a previous unit (Introduction to Programming) by requiring me to design cohesive and loosely coupled classes. My knowledge of design patterns will also come in handy in the future when I need to design complex systems.

If I did this unit again, I would do the following things differently:

I would begin working on my custom application earlier in the semester. This task required a lot of thinking, researching, and planning, and I felt I was in quite a rush to complete it near the end of the unit. I would also engage with my tutor more to have my progress checked and commented on as I go.