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: **Nguyen Vinh Khang**

Portfolio Overview

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

Demonstration of Unit Learning Outcomes

1. **Advanced OOP Principles:**
   o My project showcases a deep understanding of OOP principles through the implementation of the program classes. Refactoring techniques were applied to enhance readability, maintainability, and performance, optimizing class designs and employing static methods where appropriate.
2. **Effective Use of Libraries:**
   o I integrated the SplashKit library for graphical operations and the EPPlus library for handling Excel files, demonstrating my capability to manage data import/export operations and create visually appealing, functional applications.
3. **Innovation and Problem-Solving:**
   o I developed innovative solutions for managing mineral inventories and weapon mappings using various mineral types. The project focused on creating scalable, efficient, and user-friendly features.

Extending Beyond the Material

- **Architectural Concepts:** Applied knowledge of cloud services and serverless architecture, designing scalable and high-performance applications.
- **Software Engineering Practices:** Refactored code to improve structure, readability, and maintainability, adhering to high-quality development standards.
- **External Libraries:** Integrated and optimized the use of SplashKit and EPPlus for enhanced functionality and user experience.

My portfolio reflects proficiency in OOP, effective use of libraries, advanced problem-solving, and the ability to extend beyond standard curriculum requirements, justifying a High Distinction grade.

Task Summary

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

- 1.1P - Preparing for Object Oriented Programming (Completed)
- 1.2P - Object Oriented Hello World (Completed)
- 2.1P - In Person Check-in 1 – Tools (Completed)
- 2.2P - Counter Class (Submitted)
- 2.3P - Drawing Program - A Basic Shape (Completed)
- 2.4P - Case Study Iteration 1 - Identifiable Object (Submitted)
- 3.1P - Clock Class (Completed)
- 3.2P - The Stack and Heap (Completed)
- 3.3P - Drawing Program - A Drawing Class (Completed)
- 4.1P - Drawing Program - Multiple Shape Kinds (UML Diagrams updated)(Completed)
- 4.2P - Case Study - Iteration 2 - Players Items and Inventory (Completed)
- 5.1P - In Person Check-in 2 - Drawing Program (Completed)
- 5.2P - Case Study - Iteration 3 – Bags (Completed)
- 5.3C – Drawing Program – Saving and Loading (Submitted)
- 6.1P - Case Study - Iteration 4 - Look Command (Submitted)
- 6.2P - Key Object Oriented Concepts (Completed)
- 6.3D - D Level Custom Program Initial Plan (Submitted)
- 6.4D - D Level Custom Program (Submitted)
- 6.5HD - HD Level Custom Program Initial Plan (Submitted)
- 6.6HD - HD Level Custom Program (Submitted)
- 7.1P - Case Study - Iteration 5 - Tying it Together (Submitted)
- 7.2C - Case Study - Iteration 6 – Locations (Submitted)
- 9.1P - In Person Check-in 3 - Case Study (Submitted)
- 9.2C - Case Study - Iteration 7 – Paths (Submitted)
- 9.3HD - Research Project Initial Plan (Submitted)
- 9.4HD - Research Project (Submitted)
- 10.1C - Case Study - Iteration 8 - Command Processor (Submitted)
- T1 - Semester Test (Submitted)
- 11.1P - Clock in Another Language (Submitted)

All of them are completed

Reflection

The most important things I learnt:

Most important things were the practice of OOP concepts and design pattern of the program of which I needed to apply to my custom program. I helped my program becomes more structured, readable, and work effectively

The things that helped me most were:

Information source such as GeekForGeek, Youtube, Canvas modules.

I found the following topics particularly challenging:

Print code to PDF, very time consuming.

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

I have learnt and practice the use of SplashKit very well especially when work with animation, image scaling and memory saving. I also be able to

I still need to work on the following areas:

I still need to work on extending the program and make the user interface more functions since I feel like it is still a bit simple.

My progress in this unit was …:

I have big progress in getting used to C# language and OOP coding pattern. Engage in every task of this unit and tried to perform each task the best way I could.

This unit will help me in the future:

This course taught me concept of OOP – an advance and widely used technique. In the future I will be able to apply the concept and criteria in

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

If I can study this course again, I can extend my custom program even further and try to refactor my code more carefully.