

# COS10009 – Introduction to Programming

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*Learning Summary Report*

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## Self-Assessment Details

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

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

### *Self-assessment Statement*

	Included (please tick)
Learning Summary Report	✓
Test 1 and Test 2 are Complete in Ed	✓
All Pass level tasks completed (including tutorial tasks)	✓

### *Minimum Pass Checklist*

	Included (please tick)
All Credit Tasks are Complete in Ed	✓

### *Minimum Credit Checklist, in addition to Pass Checklist*

	Included (please tick)
Distinction tasks (other than Custom Program) are Complete	✓
Custom program meets Distinction criteria & Interview booked	✓
Design report has structure chart and screenshots of program	✓

### *Minimum Distinction Checklist, in addition to Credit Checklist*

	Included (please tick)
HD Project included	✓
Custom project meets HD requirements	✓

### *Minimum High Distinction Checklist, in addition to Distinction Checklist*

## 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: \_\_\_\_\_



## Portfolio Overview

This portfolio includes work that demonstrates that I have achieved all Unit Learning Outcomes for COS10009 Introduction to Programming to a **High Distinction** level.

I am able to write structured code with sequence, selection, and iteration. Not only I can use what have been taught in the unit but also I can use other methods and libraries in ruby with the help from online documents and resources. For example, I use TIMES, EACH, UPTO or DOWNTO methods instead of FOR, WHILE loop to make my code more comprehensive, and I can use Gosu classes and methods that are not included in lessons.

In terms of clean code, I try to keep my code easy to read with proper indentation and meaningful variables and methods' names. Moreover, I am able to read error codes and messages and log information to figure out and fix bugs by myself.

About the Music Player, I finished it to at least Distinction level, and I also did some extensions such as allowing users to page through multiple pages of albums and tracks, automatically searching and loading albums text file, and allowing users to go back, forward, to pause and continue the current track, and to adjust the volume.

About the Custom Code, I used state design pattern to implement different states in my game. I also split my program into several parts to keep it as much comprehensive as I could.

## Reflection

### The most important things I learnt:

In this unit, the most important things that I have learned is Ruby programming language, structured programming, and Gosu library for game development. After the unit, I can confidently write code in Ruby, and I can also use MVC pattern in GUI software development.

### The things that helped me most were:

Gosu library, because it helped me to build GUI application.

Ruby's many built-in iterating methods, because it helped me to simplify my code a lot.

### I found the following topics particularly challenging:

Recursion, because I barely used recursive functions before, and if I did, it was just a simple program. Also, recursive functions are harder to follow and predict the result than normal loops.

### I found the following topics particularly interesting:

GUI software development, because that was the first time I learned to build a GUI application properly with the MVC pattern. Now I can build a game of a simple software by myself.

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

Structured programming concepts, such as repetition, selection, and sequence, because I can use a variety of built-in ruby methods for iteration and repetition, use if/elsif/else statements and case for selection, and run code in sequence.

Array, because I can use basic array methods as well as some methods like .reject!, ...

Gosu library, because I can use many Gosu classes in my custom program, such as Image, Song, Sample, Font, Color, ... and their methods

### I still need to work on the following areas:

I still need to work on my custom project to produce a video so that I can achieve higher High Distinction grade.

### This unit will help me in the future:

Learning about Ruby can provide me a stronger base knowledge about programming as well as new language and libraries. Moreover, I also learn about Gosu library and MVC pattern in GUI software program which can help me a lot in the future.

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

If I could do this unit again, I would try to do better at coupling and cohesion lesson. It is because as my custom program get more complex, it becomes harder to fix bugs and to extend with new features. Although my program still works, I could split it into more functions and efficiently organize them to make it better.