

COMP3064 – Game Programming

Assignment 1

2D Shooter

Due Sunday October 30, 2016 end of the day on BlackBoard.

Value 15%

2D Shooter

Maximum Mark: 41

Overview: you will create your own 2D arcade game. The game must include **enemies** for the player to **avoid and/or destroy**. A **scoring system** must also be included. You must use your own graphic and sound assets (not the assets included in lab exercises or space shooter Unity3d tutorial!).

Instructions :

(12 Marks: GUI, 12 Marks: Functionality, 5 Marks: Internal Documentation, 8 Marks: External Documentation, Version Control: 4 Marks)

1. Your Game will have the following characteristics **(12 Marks: GUI, 12 Marks Functionality)**
 - a. A **Gameplay screen** where the main game occurs. The background will “scroll” in one direction only: horizontally (right to left). (2 Marks: GUI, 2 Marks: Functionality)
 - b. Player control of an **Avatar** (a vehicle or character) – use the standard keys (WASD) for player movement (2 Marks: GUI, 2 Marks: Functionality).
 - c. Computer control (simple AI) of the **enemies**. The enemies should be abundant enough to challenge the player but not be impossible to beat. (3 Marks: GUI, 3 Marks: Functionality)
 - d. Random placement of items to collect and/or obstacles to pass through or over – this will generate points for the player (2 Marks: GUI, 2 Marks: Functionality)
 - e. A **Scoring system** – ensure that the player’s score is accurately calculated and displayed somewhere on the **Gameplay screen** (1 Mark: GUI, 1 Mark: Functionality).
 - f. The player must have a **life counter** or **health status** that decreases each time his **avatar** collides with an enemy (1 Mark: GUI, 1 Mark: Functionality)
 - g. Add sound effects for collisions with enemies and collecting points (1 Marks: GUI, 1 Mark: Functionality).
2. Include **Internal Documentation** for your program **(5 Marks: Internal Documentation):**
 - a. Ensure you include a program header for each module of your game that indicates: the Source file name, Author’s name, Last Modified by, Date last Modified, Program description, Revision History (2 Marks: Internal Documentation).
 - b. Ensure you include a comment for all of your methods that explains the purpose of the method (1 Marks: Internal Documentation)

- c. Ensure your program uses contextual variable names that help make the program human-readable (1 Marks: Internal Documentation).
 - d. Ensure you include inline comments that describe elements of your GUI Design for your 2D game (1 Marks: Internal Documentation)
- 3. Include **External Documentation** for your program that includes **(8 Marks: External Documentation)**:
 - a. **Table of Contents** (1 Marks: External Documentation).
 - b. **Detailed Game Description** – describing how your game works (2 Mark: External Documentation).
 - c. **Controls description** (1 Mark: External Documentation).
 - d. **Interface Sketch** – this section should include wireframes of each of your game screens with appropriate labels (1 Mark: External Documentation)
 - e. **Screen Descriptions** – Include at least 3 screen shots for your game: 1 for your Start State, 1 for your Gameplay State and 1 for your Game-End State (1 Mark: External Documentation).
 - f. **Enemies** – Describe the computer controlled enemies and how they function (0.5 Mark: External Documentation).
 - g. **Scoring** – Describe how the player can score and how the score is calculated (0.5 Mark: External Documentation).
 - h. **Sound Index** – Include an index of all your sound clips (0.5 Mark: External Documentation).
 - i. **Art / Multimedia Index** – Include examples of your image assets. Each image should be displayed as a thumbnail (0.5 Mark: External Documentation).
- 4. Share your files on **GitHub** or **BitBucket** to demonstrate Version Control Best Practices **(4 Marks: Version Control)**.
 - a. Your repository must include **your code** and be well structured (2 Marks: Version Control).
 - b. Your repository must include **commits** that demonstrates the project being updated at different stages of development – each time a major change is implemented (2 Marks: Version Control).

Optional Game Features (i.e. Potential Bonus Marks).

- A. Empower the computer controlled enemies to fire bullets. 2 Bonus Marks
- B. Empower the player controlled ship to fire bullets. 2 Bonus Marks
- C. Include a final “boss monster” to avoid. 2 Bonus Marks
- D. Add power-ups for the player’s **avatar** (e.g. extra speed, a shield) 2 Bonus Marks
- E. Add a cool soundtrack to the game. 1 Bonus Mark
- F. Allow the game to scroll in any direction in response to the player’s controls. 4 Bonus Marks

No more than 6 Bonus Marks can be gathered.

SUBMITTING YOUR WORK

Your submission should include:

1. An external document (MS Word or PDF).
2. A zip archive of your complete project files or link to the project files on GitHub or BitBucket (preferred).

Please zip **ALL** files in to a single project archive.

This assignment is weighted **15%** of your total mark for this course.

Late submissions:

- 20% deducted for each additional day.

External code (e.g. from the internet or other sources) can be used for student submissions within the following parameters:

1. The code source (i.e. where you got the code and who wrote it) must be cited in your internal documentation.
2. It encompasses a maximum of 10% of your code (any more will be considered cheating).
3. You must understand any code you use and include documentation (comments) around the code that explains its function.