

## ASSESSMENT AND INTERNAL VERIFICATION FRONT SHEET (Individual Criteria)

|                                 |                                       |                         |               |               |      |
|---------------------------------|---------------------------------------|-------------------------|---------------|---------------|------|
| Course Title                    | Advanced Diploma                      | Lecturer Name & Surname | NEIL AQUILINA |               |      |
| Unit Number & Title             | Programming for Computer Games        |                         |               |               |      |
| Assignment Number, Title / Type | Research and Design – Home (24 Hours) |                         |               |               |      |
| Date Set                        | 18/12/2020                            | Deadline Date           | 19/12/2020    |               |      |
| Student Name                    | Lian Bugeja                           | ID Number               | 182403L       | Class / Group | 4.2B |

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | <i>Student's declaration prior to handing-in of assignment:</i><br>† I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy                       |
| <input type="checkbox"/> | <b>Student's declaration on assessment special arrangements (Tick only if applicable)</b><br>† I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit. |
| <input type="checkbox"/> | † I declare that I refused the special support offered by the Institute.  |
| Student Signature:       |   |
| Date :                   | 18/12/2020  |

| Assessment Criteria   | Maximum Mark | Mark Achieved |
|---|--------------|---------------|
| <i>KU1: Identify and describe different game engines for different tasks</i>                      | 5            |               |
| <i>KU3: Describe file types for media assets</i>  | 5            |               |
| <i>KU4: State the relevance of compression settings in media assets</i>                           | 5            |               |
| <i>SE1: Design and specify the details of the game to be developed, including a state machine</i> | 10           |               |
| Total Mark  | 25           |               |

| Assessor's feedback to student  |
|---|
|   |
| (If necessary, use reverse side of page for IV feedback on assignment brief / sample of assessment decisions) |

|   | Name & Surname | Signature  | Date |
|---|----------------|--|------|
| <b>Internal Verifier</b> : Approval of <u>assignment brief</u>              |                | For approval signature, please refer to electronic audit trail |      |
| <b>Lecturer / Assessor</b> : Issue of results and feedback to student       |                | For approval signature, please refer to electronic audit trail |      |
| <b>Internal Verifier</b> : Approval of <u>assessment decisions</u> (Sample) |                | For approval signature, please refer to electronic audit trail |      |
| <b>Learner's signature upon collection of corrected assignment.</b>         |                |  |      |

# **Task 1**

## **Game Engines**

### **1. Unity**

#### **Programming Languages:**

- C#

#### **Game Programmed using Unity:**

- Rust

#### **Is Unity a 2D or a 3D Engine:**

- Unity is both a 2D and a 3D engine

### **2. Unreal Engine**

#### **Programming Languages:**

- C++

#### **Game Programmed using Unreal Engine:**

- Mortal Kombat X

#### **Is Unreal Engine a 2D or a 3D Engine:**

- Unreal Engine is both a 2D and a 3D engine

### **3. Game Maker**

#### **Programming Languages:**

- It has its own language called GML

#### **Game Programmed using Game Maker:**

- Undertale

#### **Is Game Maker a 2D or a 3D Engine:**

- Game Maker is both a 2D and a 3D engine

### **4. Godot**

#### **Programming Languages:**

- It has its own language called GDScript

#### **Game Programmed using Game Maker:**

- Tanks of Freedom

#### **Is Game Maker a 2D or a 3D Engine:**

- Godot is both a 2D and a 3D engine

## 5. CryEngine

### Programming Languages:

- C++
- C#
- Lua

### Game Programmed using Game Maker:

- Far Cry

### Is CryEngine a 2D or a 3D Engine:

- CryEngine is only a 3D Engine

## Task 2

### File types for media assets

#### Image Formats

##### A1. JPG

- JPEG is a commonly used method for images produced by digital photography.
- The compression can be adjusted, which means that JPEG files are web friendly because the files are typically smaller.

##### A2. PNG

- Portable Network Graphics is a raster file format.
- This file format is ideal for digital art.
- PNG supports grayscale images, palette-based images and non-palette-based RGB or RGBA images.

##### A3. GIF

- The Graphics Interchange Format is a bitmap image format.
- It supports both static and animated images.
- This file format is mostly used for animations.
- They can be compressed to reduce file size without degrading any visual quality.

## Audio Formats

### B1. MP3

- MP3 is a coding format used for digital audio.
- It is a file format containing an elementary system of MPEG-1 or MPEG-2 encoded data.
- MP3 uses lossy data-compression, this allows a large reduction in file size.

### B2. WAV

- WAV is an audio file format developed by IBM and Microsoft.
- It used to store audio bitstreams on PCs.
- This file format is the main format used on Microsoft Windows systems which is raw and uncompressed audio.

### B3. WMA

- WMA (Windows Media Audio) format is a lossy audio file.
- This format is often used for streaming online music.
- It compresses the file size in a way that leads to a reduction in file size at the cost of reduced quality.

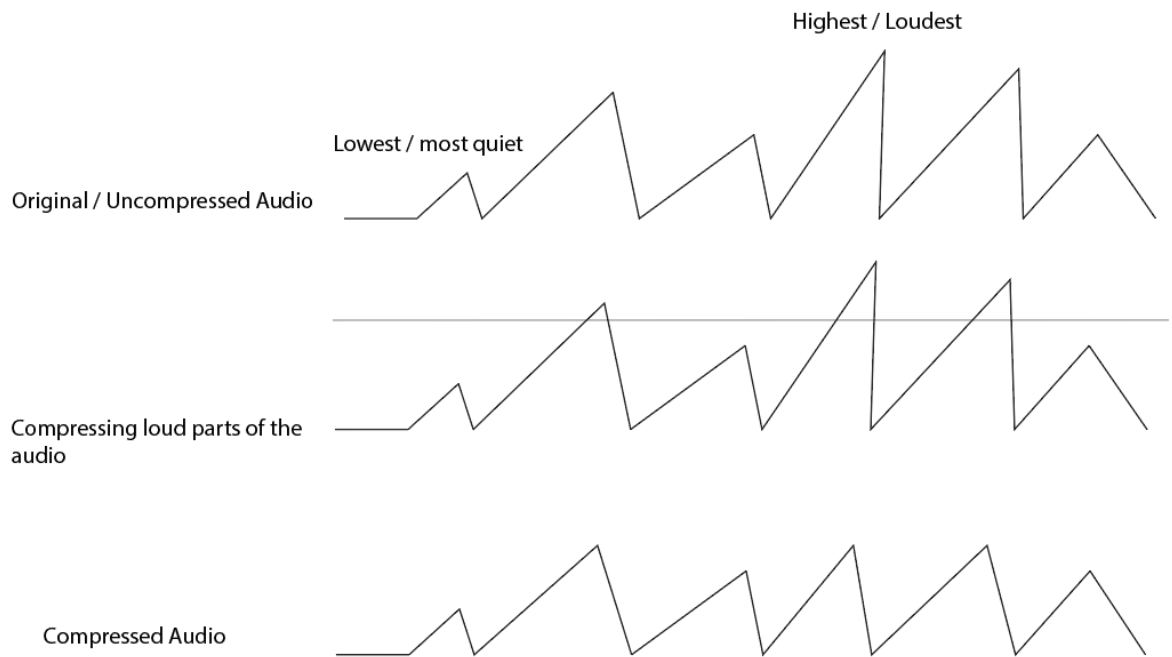
## Task 3

### Compression in multimedia

#### a. The importance of compression images:

It is very important that when adding any images to any type of work, they are compressed. This is because it helps reducing the loading screen and file size. While many people do not pay attention to it, it is very important that there is a balance between image quality and file size. This is so that the image still looks good but loads faster without taking a lot of storage. There are mainly two different compression types which are lossy compression and lossless compression. These two compression types are both useful for different image types and both reduce file size when used.

#### b. Compression in audio file Diagram:



In the first part that is where there is the Original / Uncompressed Audio. The lowest part of the audio is the quietest while the highest part of the audio is the loudest. In the second part that is when the user decides to compress the audio and the audio will be decreased in size. In the last part there is the output of compressing the audio this is where from part 2 the audio will be reduced however it will still output the same audio.