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	James Cutajar		**ID Number**	433303L	Class / Group	4.2A

		Student's declaration prior to handing-in of assignment:
☑	❖	I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy
☐ ☐		**Student's declaration on assessment special arrangements (Tick only if applicable)** ❖ I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit. ❖ I declare that I refused the special support offered by the Institute.
Student Signature:		**Date :** 18/12/2020

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

Programming for Computer Games Home Assignment 1: Research and Design (24 hours)

Task 1: Game Engines:

Unity:

Programming Language used: C# and JavaScript

Game programmed by the engine: Escape From Tarkov

2D/3D (or both) Engine: 2D and 3D

Unreal Engine:

Programming Language used: C++ Programming Language

Game programmed by the engine: Fortnite

2D/3D (or both) Engine: 3D

CryEngine:

Programming Language used: C++, Lua and C#

Game programmed by the engine: Crysis

2D/3D (or both) Engine: 3D

Amazon Lumberyard:

Programming Language used: C++ Programming Language

Game programmed by the engine: Star Citizen

2D/3D (or both) Engine: 3D

Godot:

Programming Language used: C#, C++ and GD Script

Game programmed by the engine: Ghost Study

2D/3D (or both) Engine: 2D and 3D

Task 2: File types for media assets

1. **Choose 3 types of image formats from SVG, JPG, PNG, WEBP, GIF, BMP and explain each image format, in your own words.**

   JPG: Stands for Joint Photographic Group and is a raster format often used for photographs on the web. JPEG files are web friendly because the files are typically smaller.

   PNG: Stands for "Portable Graphics Format". It is the most frequently used uncompressed raster image format on the internet. PNG also have the ability to display transparent backgrounds.

GIF: GIFs are a series of images or soundless video that will loop continuously and doesn't require anyone to press play.

2. **Choose 2 types of audio formats from OGG, MP3, WAV, AAC, WMA and explain each format, in your own words.**

MP3: MP3 is a compressed audio file format. A typical MP3 file sounds similar to the original recording, but requires significantly less disk space.

WAV: A WAV file is a raw audio format. The format uses containers to store audio data, track numbers, sample rate, and bit rate. WAV files are uncompressed lossless audio and as such can take up quite a bit of space.

Task 3: Compression in multimedia

1. **The importance of compression in images**

There is a lot of misunderstanding and confusion when it comes to images. The biggest misunderstanding is that many think that having the image at its highest quality is the best way but the problem with that is that the file size typically increases as the quality increases. While many people

don't think about the file size as often it is still very important. The file size is important especially when it comes to loading times. There needs to be a balance between image quality and file size so that the image still looks good but still loads fast without taking too much storage. When it comes to image compression it is important to understand image types, file types, image compression formats, and how the quality changes in the end.

2. Explain in detail using diagrams how compression in an audio file works. The diagram must be originally drawn by yourself, and not copied and pasted.

Compression is the process of lessening the dynamic range between the loudest and quietest parts of an audio signal. This is done by boosting the quieter signals and attenuating the louder signals.

INPUT

↓

ENCODER

↓

COMPRESSED DATA

DECODER

↓

OUTPUT