MCAST Technical College

INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY

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	Christian Sciberras	**ID Number**	**0139903L**	**Class / Group**	**MSD4.2C**

☐ *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)

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

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

Home Assignment 1:

Task 1:

1. Clausewitz Engine: Programming language used in the engine C++, a game programmed using that engine is Victoria 2 and it is a 3D Engine.
2. Unity game Engine: Programming language used in the engine C#, JavaScript and Boo, a game programmed using that engine is Hearthstone and it is a 2D/3D Engine.
3. Frostbite game engine: Programming language used in the engine C++ and C#, a game programmed using that engine is Anthem and it is a 3D Engine.
4. Godot Engine: Programming language used in the engine GDScript, C#, C++ and visual scripting, a game programmed using that engine is Rogue State Revolution and it is a 2D/3D Engine.
5. Unreal Engine: Programming language used in the engine C++, a game programmed using that engine is Batman: Arkham Asylum and it is a 3D Engine.

Task 2:

a.

- JPG - It is a commonly used compressed image format used to contain digital images. JPG is the most commonly used image format used in digital cameras, various operating systems and is also used on the internet.
- PNG - It is the most commonly used uncompressed raster image format found on the internet. PNG (which is a lossless data compression format) was created to replace GIF. PNG also has the ability to display transparent backgrounds, similar to that of GIF.
- GIF - GIF is another lossless format used for images that support both animated and unchanged images. It was at one point the most popular 8-bit colour image until PNG started to challenge its popularity. An animated GIF is basically many images in one file.

b.

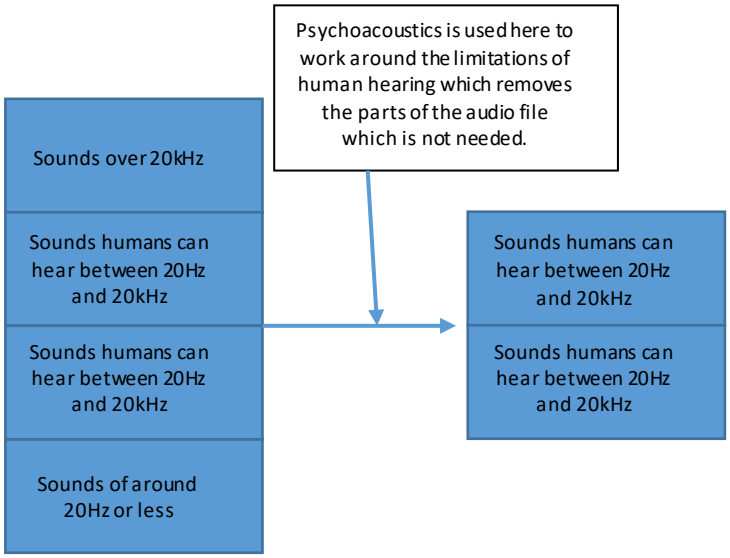
- MP3 - An MP3 file format is a popular lossy audio that is compressed to a smaller size for storage, streaming and downloads. Unfortunately with this file format the quality of the audio will become worse due to how it is compressed. However the MP3 file format is far more practical to use than the WAV format due to it being smaller in size.
- WAV – A WAV file format is a lossless audio that is uncompressed unlike the MP3 file format. Due to it being uncompressed, the audio quality of a WAV file format does not change in quality. This file format also has the ability to give a high

sample rate and bit depth which allows us humans hear all the frequencies we can hear.

Task 3:

a. In the compression of images, one of the main reasons it is important because it reduces the size of the file. This will help in communication bandwidth, data transmission time and storage space. Electronic devices such as a PC or cameras when loading a large image file tend to load them much slower because they have much more to process than compressed images. Even on websites when there are uncompressed images on certain webpages, it will take longer for it to load than compressed ones that don't take as much to load.

b.



Task 4:

As a jpg file format.

Assignment Rubric:

Criteria and tasks	**Marks**
KU1: Identify and describe different game engines for different tasks	
For 5 Game Engines list:	**5**
The Programming Languages used in it	
A game programmed using each Engine	
2D/3D Engine	
KU3: Describe file types for media assets	
Explain 3 image formats	**3**
Explain 2 audio formats	**2**
KU4: State the relevance of compression settings in media assets	
Research the importance of compression in images	**2**
Explain in detail using diagrams how compression in an audio file works	**3**
SE1: Design and specify the details of the game to be developed, including a state machine	
Create a good State Diagram for the scenario	**5**
All states must be listed in the State Diagram	**2**
All triggers must be correct in the State Diagram	**3**
TOTAL MARKS:	**25**