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	Jack Michake Crookes	**ID Number**	**0116506L**	**Class / Group**	**MSD - 4.2B**

☑	*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:	J.Crookes	**Date :**	18.12.20

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

Programming for Computer Games

Home Assignment 1: Research and Design (24 hours)

Task 1: Game Engines

Engine 1: Unreal Engine

Programming Language: C++

Game programmed with this Engine: Batman: Arkham

2D or 3D: Both

Engine 2: Unity

Programming Language: C# or JavaScript

Game programmed with this Engine: Tyranny

2D or 3D: Both

Engine 3: GameMaker

Programming Language: C++, C# and Delphi

Game programmed with this Engine: Hotline Miami

2D or 3D: Both

Engine 4: CryEngine

Programming Language: C++, Lua, C#

Game programmed with this Engine: Kingdom Come: Deliverance

2D or 3D: 3D

Engine 5: RPG Maker

Programming Language: Ruby

Game programmed with this Engine: Rakuen

2D or 3D: 2D

Task 2: File types for media assets

3 types of image formats

JPEG (Joint Photographic Experts Group)

A JPEG is a standardized lossy compression process for digital images. This compresses digital images into smaller files giving them the. JPEG extensions to files of RAW photographs which are large in size. It is one of the most common file formats as it is used mostly mainly used on the web.

PNG (Portable Network Graphic)

PNG is a lossless compression format that compresses images without losing quality and clarity. This file format can use transparency which means that the background can be invisible. It is wildly used for flat images, logos, icons, and other graphical creations.

GIF (Graphics Interchange Format)

A GIF is a lossless compression format that compresses images without losing quality and clarity the same as PNG. This file format can create Animated GIFs by combining several images or frames into a single file.

2 types of audio formats

MP3 (MPEG Audio Layer-3)

An MP3 is a lossy file format that works by compressing an audio file to lower the file size. It's a lossy format because it cannot revert to its original format thus losing some of the original file's data during compression. This format is mostly used to upload any audio-only content such as podcasts and music.

WAV (Waveform Audio Format)

A WAV file is a non-lossy raw file format that uses containers to store track, sample rates, bit rates, and audio data. Since this file is non-lossy and raw the file size would be generally bigger than 10MB per minute.

Task 3: Compression in multimedia

The Importance of compression in images

Compression of images is very important in today's work as the file size has a significant influence on the following factors: Storage and Loading Speed. As far as storage is involved it is rather simple why this is important, if we had to use an SD Card for example to store images I would perhaps hold 10 – 20 RAW images but if the files are compressed to a JPEG it can hold around 100 – 500 pictures depending on the size of the SD Card. Now when it comes to loading speeds things are different, It is true that the quality of the image is important but the higher the quality of the image the higher the size it has and thus it requires more time to download and slows the website's loading-speeds down.

A diagram of how an audio file is compressed