Home Assignment 1: Research and Design

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	Liam Zammit	ID Number	43503(L)	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 : _____

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)

Task 1: Game Engines

- Unity
  C++, C#
  Game programmed using Engine: GooBall
  3D, 2D
- Frostbite
  C++, C#
  Game programmed using Engine: Battlefield

3D, 2D

- Unreal Engine
C++, Python, LUA
Game programmed using Engine: Dragon Ball FighterZ
3D, 2D
- Phaser
JavaScript, TypeScript
Game programmed using Engine: Labyrinth
2D
- Godot
C++, C#, Python
Game programmed using Engine: RUN
2D

Task 2: File types for media assets

a.

- GIF
GIF is an image file format that is mainly used for animations and it uses lossless compression. GIF stands for Graphics interchange format.
- PNG
PNG is the most common file format as it supports transparency in an image and it is an uncompressed raster image. PNG stands for Portable Graphics Format
- JPG
JPG is a raster format that is mainly used for photographs. JPG stands for Joint Photographic Group.

b.

- MP3
MP3 is the most common way to store music files on music players, mobile phone or computers. It is a compressed audio file format.
- WAV
WAV is an audio file format standard that is used for storing an audio bitstream on PCs.

Task 3: Compression in multimedia

a.

Compression in images is used to reduce the size of a file therefore it allows you to store more images in a given amount of disk or memory space. Image compression also allows you to reduce the time it requires for images to be sent over the internet for example sending an image via Messenger to your friends or downloaded from Web pages. Compressions can be lossy or lossless, lossless compression means that when the image is compressed the picture quality remains the same while lossy compression permanently removes the data but the file size is significantly reduced, this also means that there is quality loss in the image.

b.

Audio files are compressed by having a threshold that sets the level at which the compression effect is engaged, when the level passes above the threshold it will be compressed. The Knee refers to how the compressor transitions between the non-compressed states on an audio signal running through it. Attack time refers to the time it takes for the signal to become fully compressed while Release Time is the opposite of that, it refers to the time it takes for the signal to go from compressed to its original state, non-compressed signal. When compressing the audio file it will make the audio sound better.