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	Benjamin Pourrut		**ID Number**	277402L	**Class / Group** 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:		**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)

Unit: IICT4016- Programming for Computer Games

Home Assignment 1: Research and Design (24 hours)

Benjamin Pourrut

Task 1: Game Engines (KU1) – 5 marks:

Research 5 Game Engines. In point form, and in your own words, for each engine list:

- **The Programming Language(s) used in it**
- **A game programmed using that Engine**
- **Whether it is a 2D/3D (or both) Engine**

Unity

❖ Unity Supports three different programing languages which are C#, JavaScript, and Boo.

❖ A game programmed that is using Unity engine is Genshin Impact.

❖ Unity is a 2D and 3D engine.

Solar2D

❖ Solar2D supports the interaction of Lua layered on top of C++/OpenGL.

❖ A game programmed that is using Solar2D engine is Fun Run 2.

❖ Solar is only a 2D engine.

Amazon Lumberyard

❖ Amazon Lumberyard supports two programming language which are Lua and C++.

❖ A game programmed that is using Amazon Lumberyard engine is Star Citizen.

❖ Amazon Lumberyard is at its core a 3D engine but there is some support for 2D.

GameMaker

❖ GameMaker supports JavaScript and C-type languages.

❖ A game programmed that is using GameMaker engine is Katana Zero.

❖ GameMaker is at its core a 2D engine but it can create 3D graphics and effects.

Godot

❖ Godot supports four different programing languages which are GDScript, Visual Scripting, C#, and C++.

❖ A game programmed that is using Godot engine is Gravity Ace.

❖ Godot is a 2D and 3D engine.

Task 2: File types for media assets (KU3) – 5marks

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

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

a)

JPG

❖ JPG short for "Joint Photographic Experts Group" is a regularly used as a method of lossy compression for digital images, especially for those images that are made by a digital photography. The level of compression can be modified there-for allowing a satisfaction between storage size and image quality.

PNG

❖ PNG Short for "Portable Network Graphics" is a raster-graphics file format that supports lossless data compression meaning the quality won't degrade. PNG files can handle up to 16 million colors. PNG also supports pallet-based images and grayscale images

GIF

❖ GIF short for "Graphics Interchange Format" is an image file format commonly used for images on the internet.GIF files are bitmap images which means they are made up of pixels. GIF is limited to 256 colors, but they also use lossless compression that does not diminish the quality of the image itself. Gifs can also be used for short animations or even low-quality film clips.

b)

MP3

❖ MP3 is a digital music format for generating high-quality sound files. It has forever changed the way people listen to sound like music. The vast interest of the MP3 format is its capacity to compress files which there-for making it an advantageous and very popular way of storing or sharing sounds.

WAV

❖ WAV is a file format which is uncompressed. WAV is also compatible li a lot of devices since they go through very little processing from the original audio and they keep all the information when converted to digital. WAV file format make it easier to fine tune that audio as much as you like.

Task 3: Compression in multimedia (KU4) – 5 marks

Research the following in your own words:

a) **The importance of compression in images (100 words)**

b) **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.**

a)

Image compression is reducing the size of the original image in bytes of a graphics file without downgrading the quality of the image to a level without the photo getting to an unacceptable point. Image compression can be eighter lossy or lossless. Although lossless compression is always preferred but mainly intended so it can support many types of images. The cut in file size grant more images to be gathered in each individual amount of disk or memory space. The compression in images also lessens the time needed for the images to be sent over the Internet or downloaded from different website pages.
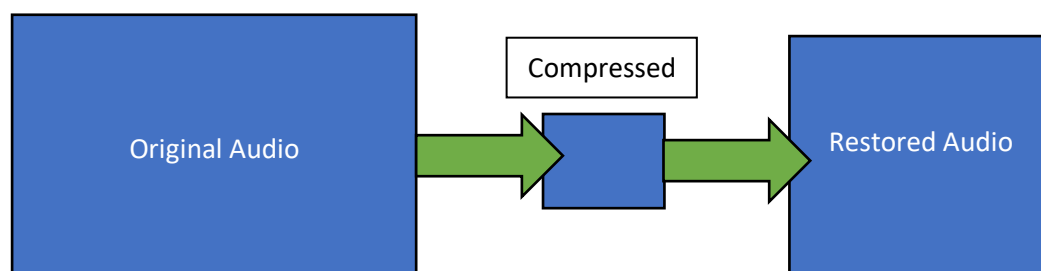
b)

Lossless diagram:
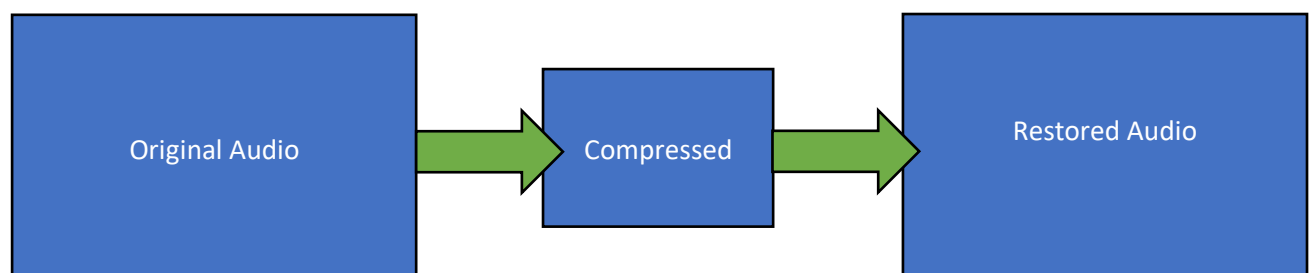
Lossless audio gives you all the information to you that was originally in the uncompressed files.

Lossy diagram:

Lossy audio compression formats like MP3 deletes all data that your ears are not able to here to make files straightforward to transfer over the internet.