

Task 1: Game Engines (KU1) – 5 marks

Unity

- Programming Languages: The primary language used is C++ but there are other scripting languages that can be used such as C# and Bolt (Visual Scripting).
- Game programmed via Unity: Club Penguin Island.
- 2D/3D Engine: It has both 2D and 3D Engines.

Gold Box

- Programming Languages: The primary languages of this engine are Pascal, Assembly, C, and C++
- Game programmed via Gold Box: Champions of Kyrnn.
- 2D/3D Engine: It only uses 2D Engine.

MonoGame (XNA)

- Programming Languages: This game engine only uses one language, which is C#.
- Game programmed via MonoGame: Terraria.
- 2D/3D Engine: It uses both 2D and 3D Engines.

Game Maker Studio

- Programming Languages: The primary language is GML, but other languages used are JavaScript and OpenGL Shading Language, which is based on the C language.
- Game programmed via Game Maker Studio: Forager.
- 2D/3D Engine: Uses both 2D and 3D Engines.

Unreal Engine

- Programming Languages: Like Unity, the primary language used is C++, but it also has a visual scripting system called Blueprints.
- Game programmed via Unreal Engine: The Sinking City.
- 2D/3D Engine: Unreal Engine only has a 3D engine.

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

Image Formats

JPG: This image format is a type of compressed file that was mainly developed by the Joint Photographic Experts Group. It is a raster image file and is most commonly used for storing photos on digital cameras as these cameras used them to save these images via JPG.

GIF: The name GIF stands for Graphics Interchange Format and is a lossless compression file that was developed by a group of employees of CompuServe. It is a raster image file and are mostly used in web graphics and for showing photos. There are also animated GIFs that store small animations.

BMP: Stands for Bit Map, which is a type of raster image file and is considered to be an uncompressed file that was created by Microsoft. This image format is mostly used to store 2D digital pictures.

Audio Formats

WAV: WAV stands for Waveform Audio File Format. This audio file format is one of the most common digital file formats for storing waveform data. These files are mostly audio recordings and is mostly used to save uncompressed audio files.

OGG: OGG is a type of audio file that is similar to an MP3 audio file, however some claim that the quality of sound is better than an MP3 file. It is a compressed file that is used for storing audio data.

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

The importance of compression in images (100 words)

The compression of images is important since the image's size will be drastically reduced and the user will be able to send the desired image via social media or email, some of which have an imposed size limit of what to send over their platform. Therefore, image compression would enable someone to send more images over Facebook or Outlook than they would have otherwise been able to. Image compression is also used by website owners when adding pictures on their platform, as the lesser the image size the faster the website loads, which helps in improving the website's user experience.

Diagram showing how compression in audio files work

