PCG Home Assignment 1

Task 1

Game Engine	Programming Languages	Game Programmed	2D/3D/Both
Unity	C++/C#	Trash Dash	Both
Frostbite	C++/C#	FIFA 21	Both
Gamebyro	C++	Fallout 3	Both
GameMaker	C++/JavaScript	Undertale	2D
Phaser	JavaScript/ Typescript	Fireboy and Watergirl 5	2D

Task 2 a

PNG is an image format that allows the user to save an image with a transparent background.

GIF is an image file that is mostly used to create animated images. It is a lossless compression format.

BMP also known as Bitmap is a raster image file format used to store bitmap images. It is capable of storing 2D images.

Task 2 b

MP3 is the most popular audio format used to store any audio.

WAV or Wave Audio File Format, is an audio file format commonly used on Microsoft Windows systems for raw and typically uncompressed audio.

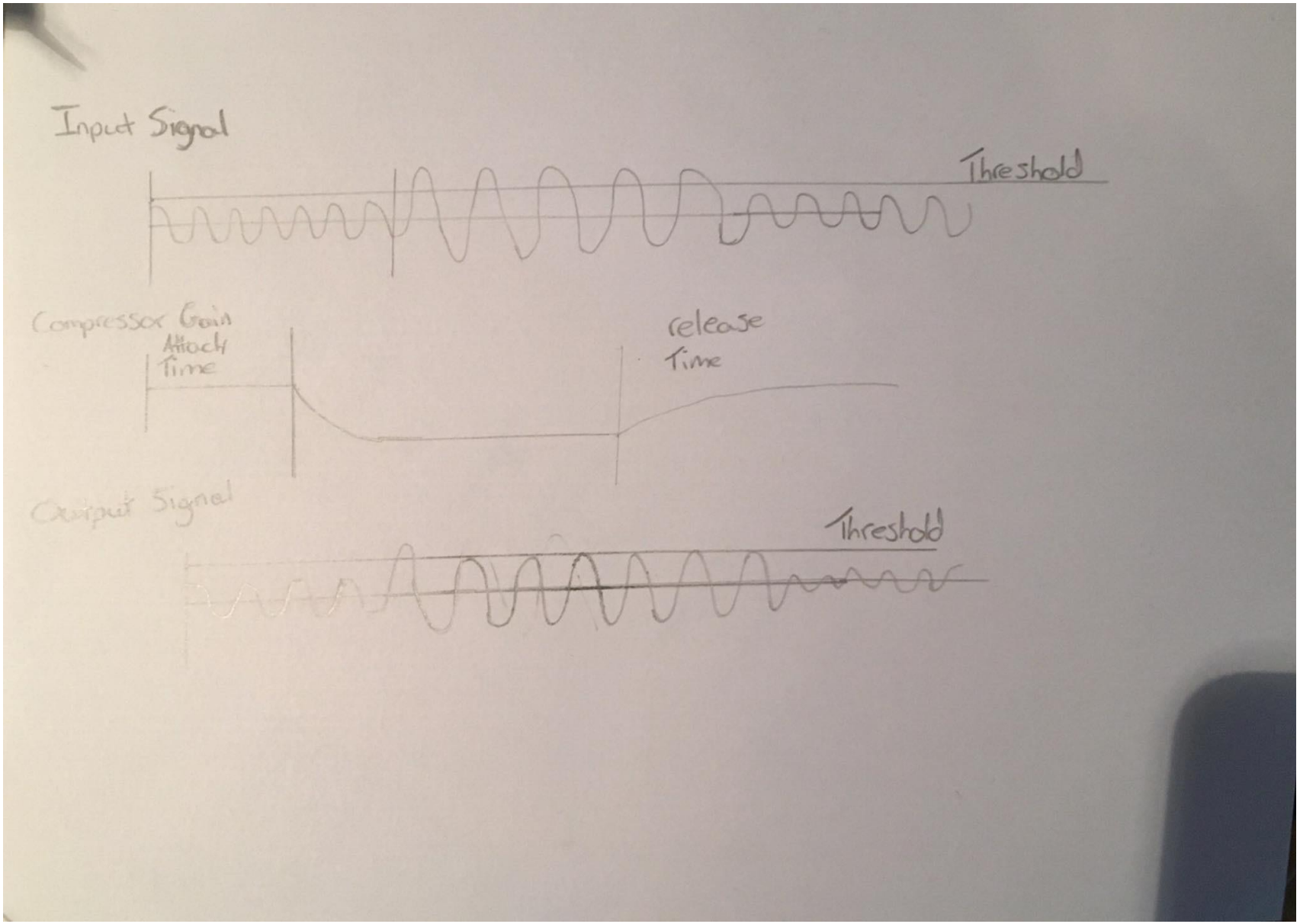
Task 3 a

Compressing the file size, allows more images to be stored in a certain amount of disk or memory space. It also reduces the time required for images to be sent over the internet or to be downloaded from different web pages. An image file can be compressed without any errors. This is called lossless compression. A small image compression is usually not noticeable so there is no critical point up to which compression works perfectly, but beyond where it

becomes possible. When there is some tolerance for loss compression, the compression factor can be greater than it can when there is no loss tolerance. For this reason, images can be compressed more than text files.

Task 3 b

Audio compression can be used to make an audio trach sound more natural without adding distortion, making the audio sound more comfortable to listen to. Over-compressing an audio file can sometimes make the audio file won't sound as good when uncompressing. The threshold is responsible for controlling the level compression effect when engaged. When an audio wave passes above the threshold, the audio will be compressed. If the threshold is set for example -10dB, only signal peaks that go beyond that level will be compressed. For the rest of the audio, no compression is taken place. Attack time refers to the time taken for a signal to become fully compressed after going beyond the threshold level. Release time means the opposite of attack time. Meaning the time for a signal to be compressed, back to its original state.


Input Signal
Threshold
Compressor Gain
Attack
Time
release
Time
Output Signal
Threshold