CMP407 Audio Programming Report

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# Using your project as an example of past work

Check this box if you’re happy for your project to be used as an example of past work on the module for future students of CMP407

# Video Evidence

# Foundational Requirements

## Sound File Playback

My project contains various looping sounds and audio queues throughout my dynamic soundscape alongside a single one-shot sound, acting as a door entry bell. The looping sounds consist of crickets when outside the house, and when inside the house, the player is exposed to:

* Television static
* Phone ringing
* Lights buzzing
* Dripping tap
* Oven sizzling

I have various sounds within range of one and other, allowing for concurrent playback. This was done deliberately as to help emphasise the audio/gameplay mechanic implemented as the main part of this project. Such sounds include the buzzing lights, the phone ringing and the television static alongside the dripping tap and another light, and the dripping rap alongside the oven audio.

## Spatial Localisation

Throughout the project, Occlusion was utilised to help localise audio to certain areas or rooms. Occlusion was a very important part of my project as the project consisted of a house with an interior and exterior which contained interior and exterior based audio. Continuing, the interior also consisted of two rooms, a ‘living room’ and a ‘kitchen’, again, both with their own audio. I originally opted to use the steam audio extension however, after much research and trial and error, I opted to use the built in Unreal Engine 5 systems as these were sufficient and also helped lower the project size. Additionally, Unreal’s Occlusion was sufficient in getting the task done effectively. The best example is when you enter one room from another and the audio queues shift – this also works when entering or exiting the house.

As mentioned, Unreal Engine 5’s built in Occlusion and sound localisation systems were utilised. I ensured that all audio sources were strategically placed throughout the scene to really make use of, enable, and disable the localisation features that Unreal has to offer. Additionally, audio pans correctly with the camera and makes use of both headphones/earphones that the user may be using, helping the player locate the source of a sound. Of a sound is to the player’s left, the sound will be observed from the left headphone/earphone.

## Attenuation

Attenuation was utilised thoroughly in the creation of the project and, again, Unreal Engine 5’s built-in attenuation features were utilised. Unreal’s attenuation is a very easy-to-use and effective feature as it allows for tweaking and fine-tuning where the used needs. One feature I made good use of was the inner and outer radius’ (or alternative depending on shape of attenuation used). This allowed me to really control where each of the sounds where at their loudest as well as allowed me to control the area of the audio drop off offered by the attenuation.