Jack Carrig IGME 670

Final Project Documentation

**Description**

I used the *Asteroids* game project from IMGE 236 as my starter for this project. It has all the standard controls from the original game (move, rotate, shoot), plus 2 new weapons, a large super laser, and a missile volley.

**Requirements**

The most obvious sound requirements were the direct movement and shooting actions the player can take. I also added a pause menu over the course of this project, which required its own sounds. I also needed sounds for both asteroid breaking stages, player damage and death, and some ambient background/environmental noise.

**Assets**

Most of my assets were acquired from freesound.org, as I have no means of recording good quality sound at home. Some sounds I used on their own, with only slight modifications such as pitch. In FMOD my sounds are sorted into 4 categories: Player, Asteroid, UI, and ambience. When routed through the Mixer, the Player and Asteroid Categories are combined into one output bus. These busses are used to allow the player to control volume in game and stop playback when scenes switch.

Player

* **damage**: (shield deflect, asteroid break) plays to signify the player has taken damage. Composed of the shield deflect sound and the asteroid break sound
* **die**: (player explosion and player death metal sounds 1 & 2) plays after the player is hit 3 times, triggers game over. I used an explosion sound and samples from two other metal screeching sounds to create this. In FMOD it becomes quieter as it plays because it was much louder towards the end in the original.
* **shoot**: (laser 1 and 2) plays when the player hits the spacebar to shoot their laser. Made from two laser sounds one high pitched and most noticeable, and the other lower to add a heavier feeling to the sound overall.
* **missleslaunch**: plays when the player presses c to launch a missile volley. I used a clip with 3 different missile launch sounds and separated each into a scatterer instrument, which also varies the pitch. It plays 6 sounds when called.
* **move**: (engine high and low) plays when the player presses w to move forward. This sound starts out with a high-pitched humming noise and a low rumbling engine noise). This sound uses a speed parameter, which increases the pitch and decreases the volume of the hum and increases the volume of the rumble as speed increases.
* **rotate**: plays when the player presses left or right to turn. Uses a simple pitched down hissing sound to represent the reaction control thrusters on the ship.
* **laser**: (big laser sound) plays when the player holds X to fire the super laser. This sound is similar to the movement hum, but higher pitched. I used ReaFir to subtract noise from the low end of this sound.

Asteroid

* **break**: (laser 2 and rocks sound) plays when a small asteroid is destroyed. It consists of an impact sound and a rock crumbling sound, which was processed with ReaEQ to remove some lighter sounding rock particles.
* **explode**: (asteroid explosion and rocks sound) plays when a large asteroid breaks up. It uses an explosion sound, and a lower pitched rock crumbling sound.

UI

* **onpause**: (UI 127) plays when the player presses P to open the pause menu. Uses the UI 127 sound
* **offpause**: (UI 127) plays when player presses P to close the pause menu. Uses the same sound as onpause but reversed.
* **scroll**: (SciFi 139) plays when player presses up or down keys in the pause menu. Uses a clicking/switch sound
* **select**: (start beep) Plays when the player presses space to begin a new game. Uses a lower pitched beep sound.
* **switch**: (UI 137) plays when player adjusts audio in pause menu. A high pitched metallic clicking sound.
* **switchlimit**: (UI 137) plays when player has reached limit of volume control (100 or 0%). Uses a pitched-up version of the normal switch sound.

Ambience

* **ambience**: (Space ambience, various others) plays in the background of the game. The base sound is a quieter wind blowing. The base is augmented with a scatterer instrument which plays some ambient computer/technical sounds, and wooshes to represent the asteroids passing by.
* **healthalarm**: (health alarm 2 and 3) plays when the player takes damage. It tracks the player’s health and changes as they take more damage. The first damage is a low, drawn out alarm that plays twice every 3 seconds. After an additional point of damage is taken, a higher pitched more urgent alarm plays on top of the original alarm. This alarm plays 13 times every 3 seconds

**Mastering**

For mastering, I kept most sounds below -23 LUFS. I recorded a few games for comparison, but the one I felt was most similar in theme was *FTL: Faster Than Light* I noticed it kept mostly below -23, except for some more intense sounds (explosions, and some parts of the music were peaking above -23)

**Asset** **List**:

* https://freesound.org/people/Sonicfreak/sounds/174450/ - Space ambience
* https://freesound.org/people/survivalbag/sounds/156088/ - engine high
* https://freesound.org/people/PlymouthJCliffords/sounds/164842/ - engine low
* https://freesound.org/people/kwahmah\_02/sounds/274752/ - rotate
* https://freesound.org/people/qubodup/sounds/182794/ - rocket launch
* https://freesound.org/people/MATTIX/sounds/404151/ - select
* https://freesound.org/people/SeanSecret/sounds/440668/ - laser2
* https://freesound.org/people/kafokafo/sounds/128229/ - laser1
* https://freesound.org/people/debsound/sounds/251229/ - shield deflect
* https://freesound.org/people/adamgryu/sounds/336023/ - rocks sound
* https://freesound.org/people/SoundFX.studio/sounds/456272/ - asteroid explosion
* https://freesound.org/people/ivolipa/sounds/344949/ - big laser sound
* https://freesound.org/people/KieranKeegan/sounds/436051/ - player die metal sounds 1
* https://freesound.org/people/soularitysound/sounds/366109/ - player die metal sounds 1
* https://freesound.org/people/Iwiploppenisse/sounds/156031/ - player explosion
* https://freesound.org/people/JavierZumer/sounds/257226/ - start beep
* https://freesound.org/people/sophiehall3535/sounds/245933/ - ambience
* https://freesound.org/people/bbrocer/sounds/389511/ - health alarm 2
* https://freesound.org/people/Joao\_Janz/sounds/478275/ - health alarm 3
* https://www.tonedock.com/samplepacks/6?page=2
  + UI 137 - switch
  + UI 133 - ambience
  + UI 125 - ambience
  + UI 116 - ambience
  + UI 127 - pause
* https://www.tonedock.com/samplepacks/7?page=2
  + SciFi 139-scroll