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IGME 671

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Final Project Documentation

**Intro and Analysis**

Kalisha and the Spirit Stones is a game that I made for a GDD II project about 2 years ago. You play as a young magician’s assistant named Kalisha and you must collect the scattered spirit shards in various levels. It is a 2D puzzle adventure game where players must overcome various challenges while collecting shards and avoiding enemies.

Initially we didn’t have time to implement a lot of sounds for this project and were only able to make some custom music and a few sounds. I figured that this was the perfect opportunity to go back and redo the audio for this project, an area I always felt was lacking. In order to accomplish this I needed to make sound effects for the various enemies, character interactions, menu interactions, and ambient tracks.

**Events and Sources (All sounds acquired from Freesound.org)**

* Push crate (Level SFX)
  + I created this sound to give some extra positive feedback when the player is pushing a crate. I used a parameterized scatterer to add some sand crunch when the player is in the desert levels.
  + Sliding\_Wooden\_Cabinet\_Door\_2 (of 2) by Rudmer\_Rotteveel <https://freesound.org/people/Rudmer_Rotteveel/sounds/364103/>
  + Sand\_step by pgi <https://freesound.org/people/pgi/sounds/211457/>
* Collect shard (Level SFX)
  + I wanted to provide positive reinforcement for the player making progress in the level. I added a parameter to increase the pitch with each shard collected to add extra emphasis for this action.
  + SFX Magic by renatalmar <https://freesound.org/people/renatalmar/sounds/264981/>
* Unlock portal (Level SFX)
  + I wanted to make a sound that would play when the player is able to move onto the next level. I made most of the adjustments in Reaper for this one and just used a single instrument in FMOD.
  + Another magic wand spell tinkle by Timbre <https://freesound.org/people/Timbre/sounds/221683/>
* Horrorhound bark (Enemy barks)
  + I wanted a dog bark to play when the player gets close to a horrorhound. I randomized the pitch slightly to give the hounds some variability.
  + Single dog bark 2 by crazymonke9 <https://freesound.org/people/crazymonke9/sounds/418106/>
* Brinehood projectile (Enemy barks)
  + I implemented a watery projectile sound that plays when the brinehoods shoot their projectiles. This should give the player an auditory indicator for the firing pattern. Similar to the horrorhound I added some pitch randomization for variability.
  + Water Click by Mafon2 <https://freesound.org/people/Mafon2/sounds/371274/>
* Dreadtalon cry (Enemy barks)
  + I wanted the cry of a hawk to play as the dreadtalon approached the player. I made most of the adjustments in Reaper for this one and just used a single instrument in FMOD.
  + Brd\_hawk by tec\_studio <https://freesound.org/people/tec_studio/sounds/362426/>
* Cinderfiend explosion (Enemy barks)
  + I used a sound that would provide a short fuse and explosion sound for when the cinderfiend’s explosion triggers. I wanted this to provide a warning to players and encourage them to get away. I made most of the adjustments in Reaper for this one and just used a single instrument in FMOD.
  + Explosion\_low\_fuse\_1 by eardeer <https://freesound.org/people/eardeer/sounds/402004/>
* Button (Level SFX)
  + Wanted an audible click to play whenever a switch is activated in order to provide feedback to the player. I made most of the adjustments in Reaper for this one and just used a single instrument in FMOD.
  + Click1 by annabloom <https://freesound.org/people/annabloom/sounds/219069/>
* Player death (Level SFX)
  + Wanted to try a reversing magical effect for when the player dies and the level resets. I made most of the adjustments in Reaper for this one and just used a single instrument in FMOD.
  + Magic sound 1 by JomelleJager <https://freesound.org/people/JomelleJager/sounds/252681/>
* Menu interaction (Hover) (UI)
  + Needed a positive feedback sound that would play when the player hovers over menu options. Most adjustments were done during creation in Reaper and used a single instrument in FMOD.
  + Menu selection click by NenadSimic <https://freesound.org/people/NenadSimic/sounds/171697/>
* Menu interaction (Click) (UI)
  + Needed a positive feedback sound that would play when the player clicks on a menu option. Most adjustments were done during creation in Reaper and used a single instrument in FMOD.
  + UI\_3-1 FHSandal sinus(Sytrus,arpegio,multiprocessing,rsmpl) by newlocknew [https://freesound.org/people/newlocknew/sounds/515827/](https://freesound.org/people/newlocknew/sounds/515827/#)
* Pause game (Level SFX)
  + Needed a positive feedback sound that would play when the player pauses the game. This was a quick one I made by lowering the pitch of the Menu interaction (Click) sound. Most adjustments were done during creation in Reaper and used a single instrument in FMOD.
  + UI\_3-1 FHSandal sinus(Sytrus,arpegio,multiprocessing,rsmpl) by newlocknew [https://freesound.org/people/newlocknew/sounds/515827/](https://freesound.org/people/newlocknew/sounds/515827/#)
* Ocean ambience (Ambience)
  + I created an ambient track for the docks/ocean levels featured in the first half of the game. I used a combination of single and scatterer instruments with parameters that would increase the volume of each instrument as the player progresses through the first world. I wanted to give the player the feeling of being on the docks/shore.
  + Waves up close by amholma <https://freesound.org/people/amholma/sounds/376802/>
  + Flock of seagulls by juskiddink <https://freesound.org/people/juskiddink/sounds/98479/>
  + ShipsBell by acclivity <https://freesound.org/people/acclivity/sounds/32304/>
* Desert ambience (Ambience)
  + I created an ambient track for the desert levels featured in the second half of the game. I used a combination of single and scatterer instruments with parameters that would increase the volume of each instrument as the player progresses through the first world. I wanted to give players the feeling of being in the desert.
  + Wind-noise by jorge0000 <https://freesound.org/people/jorge0000/sounds/361053/>
  + Coyote2 by rogerforeman <https://freesound.org/people/rogerforeman/sounds/68068/>
* Level music (Music)
  + The music was already created and implemented during the original project. I just added a volume parameter that allows me to lower the volume when the game is paused.
* Title music (Music)
  + The music was already created and implemented during the original project. I just added a volume parameter that allows me to lower the volume.

**Mixing and Mastering**

When it came to mixing my audio, I did some testing in unity and made individual volume and EQ adjustments based on my notes. After I got the individual sounds to a good level, I used the Master bus and LUFS measurements in FMOD to make balance everything together. I used a similar puzzle game called [*Box Kid Adventures*](https://www.youtube.com/watch?v=ZWcGg5bTNAM) to analyze the audio levels as reference and give myself a good baseline to aim for. The LUFS levels averaged around -34 and I was able to get the audio in my game to hover somewhere between -33 and -24. Most of these adjustments were made by fine tuning the volume levels of each event with special attention given to those that played simultaneously.