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Project Final Documentation  
  
**The Game:**

The 2D Platformer Microgame, available on the Unity Hub, appears to be a simple game designed for teaching the ins and outs of designing a 2D platformer as the name suggests, designing scripts, calling events, a basic UI, and easy . The game comes with a collection of sound effects and one music track, some already implemented and some unimplemented.  
  
  
The intent for asset production, selecting source sounds and recording was to maintain a very light atmosphere for the game, where the player character, made of some kind of blue goo, bounces all over a nondescript blue level, collides with dangerous acidic slimeballs or beats them by hopping on their head. An attempt was made to find source sounds involving bubbly sequences, damp sound effects against surfaces, and twangy springlike sounds for the bouncing.  
**Assets:**  
  
**Blegh1.wav**  
Asset made from voice recording **20-\_Noooo\_-210414\_1633.wav**. Pitch was raised and formant shifted down to make voice squeakier. This sound was partially made out of embarrassment while recording several “nooo” cries, hence its existence in that track take, and used for the player character’s lighthearted death.  
  
**Bubbling1.wav**Asset made from **zapsplat\_foley\_wet\_mud\_air\_blow\_into\_small\_bubbles\_001\_47626.mp3,** with reduced playback speed. This sound triggers upon an enemy’s death after the player stomps on them, producing viscous liquid sounds expected from a large acidic blob.  
  
**Bubbling 2-4.wav (3 files)**Assets made from **539820\_\_ristooooo1\_\_bubbles-003.wav**, all with increased playback speed. These bubbles play when the semisolid player jumps. Less viscous bubbles are to give the impression of lightness or swiftness as opposed to the thick, slow bubbling of the ooze enemies.  
  
**Bubbling5.wav**Asset made from **zapsplat\_foley\_wet\_mud\_air\_blow\_into\_small\_bubbles\_001\_47626.mp3,** with significantly increased playback speed. This sound is used when the player contacts the enemy and is damaged.  
  
**Coin Chime.wav**  
Asset made from **zapsplat\_vehicles\_aircraft\_call\_bell\_single\_tone\_44563.mp3**, significantly increasing the playback speed of the airline bell for a simple, unobtrusive chime when a coin is collected  
  
**Footstep1-6.wav (6 files)**Assets made from **339325\_\_inspectorj\_\_footsteps-muddy-e.wav,** with increased playback speed and manipulated with ReaEQ to reduce background noise of the footsteps. The original idea was despite the platforms being solid, the player character itself is semisolid, and would probably make a lot of squelching/jumping sounds. The wetter sounds stick out more, however, and so were used in the landing and jumping, where I imagine the squishy legs would be stretching and compressing, and the remaining sounds were kept in the walk cycle.  
  
**Jawharp1-6.wav (6 files)**Assets made from **188869\_\_plingativator\_\_jawharp-boing.wav**. The loud springy jawharp twangs all have a chance to play when an enemy is bounced on.

**Music1-2.wav (2 files)**  
Assets made from beepbox.co. A leisurely, low-tension music track was the intention, gaining additional tracks as the player character loses health. The second file introduces the cello instrument, keeping the same pace but placing just a bit of tension on the player with a low-pitch sound that takes over the melody.   
  
**MusicNew, MusicCello, MusicViolin.wav (3 files)**  
Assets made from beepbox.co, updating from the original as well as splitting the different instruments for an easier time easing in and out certain sounds. A large part of the 8-bit clashing with the more realistic sounds of the game was the percussion, which sounds better after switching it to a non chip noise.

**Mustard1.wav**Asset made from **https://freesound.org/people/redagent/sounds/346862/.** Playback speed increased for a simple, memorable and slightly comical sound of mustard and air emerging from a mustard bottle. Originally this was planned to be used for diagetic sound effects in some way, but sounded too out of place with the rest of the wet sounds. As a nondiagetic UI pause and unpause it works much better.  
  
**Mustard2.wav**Asset made from [**https://freesound.org/people/redagent/sounds/346862/**](https://freesound.org/people/redagent/sounds/346862/). Playback speed increased for a less obtrusive pop of mustard as user interface buttons are pressed, rather than the longer sound of the pause and unpause toggle. **Noo1-3.wav (3 files)**Assets recorded from **20-\_Noooo\_-210414\_1633.wav**, pitch was raised and formant shifted down to make voice squeakier. The player character would give a little exclamation of surprise as they lost stability and then popped out of existence.  
  
**Puff1.wav**Asset recorded from **22-Puff take 2-210414\_1806.wav**. Unable to find a good dry, comical puffing source sound for the player character whimsically disappearing in a puff of particles, this was recorded instead.

**PuffReverse.wav**Asset take made by reversing the above asset. Reversing the popping puff sound for the effect of respawning or appearing seems cheap, but was inspired by hearing the reversed sounds of destruction used when building rocks in the Binding of Isaac. **Raspberry1.wav**Asset recorded from **23-Rasberry-210414\_1809.wav.** After discovering the mustard bottle sound but not finding an adequate place to put it, I tried to develop a sound that was reminiscent of it without being as obnoxious, and layered it with the puff for a comical death noise. **Sizzle1.wav**Asset made from **382313\_\_bottles\_\_sizzle-acid-burn.wav.** A sizzling or burning sound seemed necessary, as contact with these slime enemies would be the main way to end the player character’s life aside from falling, and the danger commonly implied by a slime enemy is that it will dissolve or burn its surroundings.  **Springjump.wav**Asset made from **zapsplat\_cartoon\_plastic\_ruler\_twang\_008\_22703.mp3**. The twang of the plastic ruler was the first attempt at an appropriately springy jump for the player character.  
  
**FMOD Work**  
Events/timelines in FMOD were organized into several groups:  
Ambience: - initially anticipated to be used instead of music, this folder would have been for ambient environmental noise.  
Dialog: - included for organization’s sake, the game features no dialog and did not need dialog events.  
Music:

-The Music event runs on about a 24 second loop with a 60 BPM tune comprised of **MusicNew, MusicCello, MusicViolin.wav**. The cello and violin are separately parameterized, with the former emerging as the player loses health, and the latter as more tokens are collected to encourage a sense of completion.

Interface:

-ButtonHover: A misnomer with one Audio/Logic Track: mustard2.wav plays.

-MenuToggle: One Audio Track: Mustard1.wav plays.  
  
Sound Effect:

-Collectible: One Audio Track: The Coin Chime asset with no extra work required.

-Death: Four Audio tracks: a multi instrument randomly using one of three “nooo” assets. The “blegh” sound fades in partially through the multi instrument and partially through the “blegh” emerge both the dry puff asset and the raspberry.

-Hurt: Three Audio Tracks: Sizzle1 and Raspberry

-Jump: Three Audio Tracks: Springjump1 with a randomized pitch of one semitone, a multi instrument containing bubbling2, bubbling3 and bubbling, and a multi instrument of footstep1, footstep2 and footstep4. Springjump1 has manual automation in both pitch and volume, lowering its pitch as the twang subsides for a sort of audio blueshift, trying to give the impression of jumping and gaining distance from the ground, and volume for emphasizing certain points of the decreasing pitch.

-LandOnEnemy: Two Audio Tracks: Bubbling1 has a volume automation to fade it out as the defeated slime disappears. A multi instrument holding five jawharp twangs 2-6 with a slight pitch decrease automation as it plays.

-LandOnGround: One Audio Track: A multi instrument randomly selecting footstep3 or footstep5 for when the player character lands on a platform.

-Walk: One Logic Track: A loop region replays a multi instrument that randomly selects footstep1, 2 or 4, and features a randomization of .5 semitones to vary the repeating sound.

-Respawn: The PuffReverse.wav take hastily applied to the final build

**Mixing:**Sounds belong to group buses designated by their event folders. Pausing the game halts all sound effects and decreases the volume of the music. Balancing sound effects with music was difficult because making the music too quiet would take my own personal enjoyment away. I couldn’t tell if I was subconsciously masking the sound effects with the lull of the music to make the game seem a little less sonically empty, or if hours of listening to the track on repeat had hooked me on it to the point that I was hearing it outside of Unity. Other minor adjustments to event buses were made in the mixer, trying to bring out the sound effects, most notably the death and hurt effects, to not be overwhelmed by the music.  
  
**Mastering technical difficulties**:  
  
The recordings that were going to be compared to the game were personal play footage of **Hollow Knight,** personal play footage of an old browser platformer **Fancy Pants Adventure,** and personal play footage of a level designed in **Portal 2** for IGME420 to measure mastering levels. Recordings of all of these were made using the xBox Windows screen recording feature, but no amount of configuring could get the resulting mp4s to produce sound, except for the already-recorded Portal 2 video made a year prior. Moreover, Reaper refused to import all items such as this one due to not recognizing VLC and could not integrate with VLC or the Youlean Loudness Meter despite checking to make sure the plugins were properly installed and using the correct bit versions. This made metering incredibly frustrating and due to time constraints did not manage to delve as much into this requirement as I would have liked.

**Sources:  
Zapsplat:  
https://www.zapsplat.com/music/cartoon-plastic-ruler-twang-good-for-spring-or-jump-8/**zapsplat\_cartoon\_plastic\_ruler\_twang\_008\_22703.mp3  
Vibration of a plastic ruler with one side held stationary.  
Uploader: Zapsplat

**https://www.zapsplat.com/music/air-blown-from-straw-into-wet-sloppy-mud-bubbling-1/**  
zapsplat\_foley\_wet\_mud\_air\_blow\_into\_small\_bubbles\_001\_47626.mp3  
Mud bubbling from air blown through a straw.  
Uploader: Zapsplat  
  
**https://www.zapsplat.com/music/bubble-blown-into-water-in-plastic-container-through-plastic-tube-2/**  
zapsplat\_foley\_water\_bubble\_plastic\_container\_blow\_air\_through\_plastic\_pipe\_002\_48394.mp3  
Water bubbling from air blown through a plastic tube.  
Uploader: Zapsplat  
  
**https://www.zapsplat.com/music/airliner-internal-passenger-call-bell-ring-single-tone/**zapsplat\_vehicles\_aircraft\_call\_bell\_single\_tone\_44563.mp3  
Soft airliner bell ring.  
Uploader: Zapsplat

**Freesound.org:  
https://freesound.org/people/plingativator/sounds/188869/**188869\_\_plingativator\_\_jawharp-boing.wav  
*“A couple of 'boing' sounds made using a jawharp.”-* Uploader description.  
Uploader: plingativator  
  
**https://freesound.org/people/Meisben/sounds/488068/**  
488068\_\_meisben\_\_footsteps-mud-01.wav  
*“Mud Footsteps” –* Uploader description. Audio of several steps taking in mud.  
Uploader: Meisben  
  
**https://freesound.org/people/InspectorJ/sounds/339325/**339325\_\_inspectorj\_\_footsteps-muddy-e.wavAudio of several steps taken in mud.  
Uploader: InspectorJ  
  
**https://freesound.org/people/redagent/sounds/346862/**346862\_\_redagent\_\_mustard-squirting-squeezing-farts.wav  
*“Just a basic squeezing of a mustard bottle in order to hear the majestic squirting/farting noise that middle schoolers giggle over until the world ends.”* – Uploader description  
Uploader: redagent  
  
**https://freesound.org/people/ristooooo1/sounds/539820/**539820\_\_ristooooo1\_\_bubbles-003.wav*“Bubbles bubbling...”*– Uploader description  
Uploader: ristoooool  
  
**https://freesound.org/people/bottles/sounds/382313/**  
382313\_\_bottles\_\_sizzle-acid-burn.wav  
*“A compliation of mono recordings of a pipette of water being squirted onto a hot frying pan. Various intensities. Recorded for use as flesh-burning sound in short film.“* – Uploader description  
Uploader: bottles  
  
  
**Recordings:  
  
20-\_Noooo\_-210414\_1633.wav**  
Recorded voice using Logitech Pro x headset microphone for death exclamations. Pitched up, formants shifted down.  
  
**21-Puff-210414\_1805.wav  
22-Puff take 2-210414\_1806.wav**Two takes. Recorded blowing and puffing noises with Logitech Pro x headset microphone.  
  
**23-Rasberry-210414\_1809.wav**Recorded mouth raspberries with Logitech Pro x headset microphone.  
  
**Composings:**[**https://www.beepbox.co/**](https://www.beepbox.co/) **MurphyMusic1.mp3  
MurphyMusic2.mp3  
MusicNew.wav  
MusicCello.wav  
MusicViolin.wav**Chiptunes made from scratch on beepbox.co using the pizzicato, percussion, cello and violin instruments.

<https://github.com/acm7552/igme671-Project-Final>