## Player Emotions

The primary emotion I want the player to feel while playing this game is **intensity**. The gameplay is designed to be fast-paced, requiring quick reflexes and precise movement, especially as the molten effect spreads inward from the edges of the platform. The constant risk of falling into the lava creates a strong sense of **tension**, keeping the player engaged and focused. Each moment feels like a battle for survival, as the safe space gradually diminishes. Additionally, the explosive collisions between the basketball and the gold cube add an element of **excitement**, making every successful impact feel powerful and rewarding. This combination of high stakes, escalating danger, and impactful interactions keeps the player on edge, reinforcing the thrill of the game.

## Themes

One of the central themes of the game is **Pressure & Risk**. The ever-present danger of falling into the lava, combined with the shrinking safe zone, forces the player to act quickly and think strategically. This creates a high-pressure environment where every movement matters. Another key theme is **Momentum & Impact**, as the physics-based mechanics make movement and collisions feel dynamic. The rolling motion of the basketball and the explosive effects upon impact emphasize the power behind each interaction.

The game also explores the theme of **Competition & Triumph**, as the player must outmaneuver the gold cube and push it off the platform while avoiding hazards. Successfully knocking the cube into the lava delivers a strong sense of victory, reinforcing the competitive nature of the gameplay. Additionally, the environment itself plays a crucial role, tying into the theme of **Heat & Destruction**. The glowing molten effect spreading across the platform represents escalating danger, making the battlefield feel increasingly hostile over time. Lastly, the game conveys a sense of **Isolation & Survival**, as the player is alone on a suspended platform with only the cube as their opponent. This enhances the tension, making the experience feel like a test of skill and endurance in a hazardous environment.

## Inspiration

The following are five music and sound effect references that align with the themes of Pressure & Risk, Momentum & Impact, Competition & Triumph, Heat & Destruction, and Isolation & Survival in my game. Each reference provides inspiration for the sound design by capturing elements of intensity, movement, and environmental danger.

One strong reference is *“BFG Division”* from *Doom (2016)* by Mick Gordon. This track is known for its aggressive industrial sound, featuring distorted guitars and intense electronic elements. The relentless energy and pounding rhythm align well with the high-pressure gameplay, reflecting the danger of the lava spreading across the platform. However, the track might be too aggressive for a game focused on rolling a basketball rather than combat. A toned-down version with deep percussion and rising tension could enhance the pressure-filled moments.

Another fitting reference is the *Final Destination Theme* from *Super Smash Bros. Ultimate.* This orchestral and electronic mix creates a sense of epic competition, reinforcing the idea of a high-stakes battle. The fast-paced tempo encourages aggressive and strategic movement, much like maneuvering to push the cube off the platform. While the sense of competition and climactic moments align well with the game, the orchestral elements may feel too grand for its smaller-scale physics-based nature. A high-energy track with a steady build-up could be effective, especially as the molten floor spreads.

The *Lava Reef Zone (Act 1)* track from *Sonic & Knuckles* is another strong reference, capturing the theme of heat and destruction. The combination of groovy basslines and synthetic melodies gives a sense of movement while reinforcing the fiery, dangerous environment. The dynamic feel of the track matches the momentum-based movement of the basketball and the glowing lava. However, the retro instrumentation may not fit the modern aesthetic of the game. Still, incorporating a rhythmic yet intense background track can help maintain energy and immersion while reinforcing the environmental theme.

For a more atmospheric approach, *"Time"* by Hans Zimmer from the *Inception* soundtrack provides inspiration for the feeling of isolation and survival. The deep, echoing percussion and drawn-out melodies create an atmosphere of being alone in a vast, dangerous space, much like the player's experience in the game. The slow build-up of tension mirrors the increasing danger as the platform's safe space shrinks. However, the sombre tone may not fully capture the competitive and action-driven nature of the gameplay. A minimal, atmospheric soundtrack in quiet moments could enhance the feeling of isolation before the action intensifies.

Finally, the *goal explosion sound effect* from *Rocket League* is an ideal reference for impact and competition. This powerful sound creates an instant feeling of success and could be used to emphasize the moment when the basketball collides with the cube. It adds a satisfying level of feedback, making each impact feel significant. However, if overused, it could become repetitive or overwhelming. A modified explosion effect could make collisions more rewarding without being too disruptive to the game flow.

Each of these references provides unique inspiration for shaping the soundscape of the game. The intense energy of *Doom* and *Smash Bros.*, the environmental themes of *Lava Reef Zone*, the atmospheric tension of *Inception*, and the satisfying feedback from *Rocket League* all contribute to creating an immersive audio experience. By blending these elements appropriately, the game's themes and emotions can be effectively reinforced, enhancing player engagement and excitement.

## Creation

I recorded three sounds for this project:

1. **Clap Sound** – This serves as the base for the bounce sound. I post-processed it by trimming the track, lowering the pitch, and applying a low-pass filter with a 1,200 Hz cutoff.
2. **Rolling Sound** – I recorded the tip of a USB-C cable sliding along a table to create a rolling effect. This was used as an additional layer to enhance the rolling sound.
3. **Lava Crackling** – I simulated the sound of lava crackling by crinkling a packet of cold medication pills. This sound was processed and mixed to give the impression of molten rock shifting and cooling.

## Details On Technical

The game I chose for this assignment was originally created for another class and initially had no sound. Its primary purpose was to experiment with various shading techniques in a simple game environment. The game takes place in a volcanic cave, where lava flows beneath the platform the player moves on. Over time, as the floor remains in contact with the lava, it begins to glow molten, with the effect gradually spreading inward from the edges.

In this game, the player controls a basketball with the goal of pushing a gold cube off the platform into the lava without falling off themselves. The player can roll and jump to maneuver around the platform. When the basketball collides with the cube, an explosion effect occurs, emphasizing the power of the impact.

For the **ball rolling sound**, I used the sound of a bowling ball, as it conveys more power and weight than a basketball. I obtained this sound using an AI sound effect generator at Optimizer AI with the prompt: *"Sounds of a bowling ball rolling accompanied by ambient noise."* I then post-processed it to create a seamless loop in FMOD by zero-indexing the section I wanted to cut.

For the **bounce sound**, I recorded myself clapping, then post-processed the audio by trimming the track and applying a low-pass filter with a 1,200 Hz cutoff.

For the **explosion sound effect**, I generated a grenade explosion sound using the prompt: *"Grenade explosion sounds accompanied by ambient noise."* The sound was already suitable, so I simply trimmed excess parts of the track.

For the **deep rumble**, I combined a harmonic blend of different tones (20, 40, 60, 80 Hz). In **rumble1** I blended the deep rumble with a post-processed vacuum sound that was slowed down and pitch-lowered and ran all of it through a low passed filter and pitch shifted the whole track in fmod. The vacuum sound was recorded using my phone.

All sounds in FMOD have **reverb effects**, with the **density, reverb time, diffusion, and wet intensity** parameters linked to a **global parameter**. Since the game takes place in a single environment, this setup ensures consistent acoustics for all indirect sounds. By adjusting the

global parameter, I can modify the acoustics of the entire room without needing to tweak each sound individually.

I also added a **Bounce Intensity** parameter, which is accessed by the code to dynamically adjust the bounce sound's volume based on the ball's speed when it collides with the ground after jumping. This parameter has a range of **0 to 1**, ensuring that harder impacts produce louder bounces while softer landings remain subtle.

I added a multi instrument tool to the bounce to randomize between the clip with the low pass filter and theclip without to randomize the bounce variation that plays from the daw.

The **lava sound** is implemented as a **2D sound** because the lava is flowing throughout the entire environment. Rather than placing multiple sound sources in the scene, which would use more resources and create inconsistencies in attenuation, I opted for a single, spatially neutral sound that ensures the lava's presence is consistently heard throughout the room.