# Milestone 1 - Test Plan

Team 10 - Soulless

**Instructions to Start the Game:**

1. In the project folder, run the following commands:
   * cmake .
   * make
2. After building, run ./soulless
3. Make sure your machine is not muted and you can hear the audio.

### **Game Mechanics and Controls:**

**Player Movement:**

* **Movement Keys:** The player can move in 8 directions (N, S, E, W, NW, NE, SW, SE) using the W, A, S, D keys.
  + **Note:** Movement is independent of the mouse position.
  + Holding two keys such as WA means North West

**Shooting Mechanics:**

* **Mouse Direction:** The player’s shooting direction is determined by the position of the mouse. Shooting also occurs in 8 directions (same as player movement).
* **Shooting Action:** The player can shoot by clicking the left mouse button (or the equivalent on a trackpad). There is a short cooldown, so the player cannot rapidly press left click to shoot.
* **Projectile:** The player shoots fireballs that expand as they travel. The fireball grows in size (linear interpolation) until reaching a maximum distance or colliding with an enemy.
* **Enemy Interaction:** When the fireball collides with an enemy, the enemy as well as any of its projectiles should disappear after taking a number of hits.
  + **Audio Cue:** Ensure that both a fireball sound effect and an enemy hit sound effect are triggered appropriately.

**Enemy Behaviour:**

* **Random Spawning:** Enemies spawn at random locations on the map at a fixed time interval
* **Pathfinding:** Enemies should follow the player but only up to a certain distance (test pathfinding functionality).
  + This is because the current enemy type is only ranged.

**Damage and Cooldowns:**

* **Player Damage:** The player takes damage upon being hit by an enemy, indicated by an impact noise.
* **Damage Cooldown:** Ensure there is a cooldown timer preventing the player from taking damage continuously. This applies to enemies as well. Meaning projectiles directly after a hit on the player will be ignored. A common feature in games.

### **Map Boundaries:**

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* **No Out of Bounds:** Ensure that the player cannot move out of the map's bounds.

### **Death and Loss Condition:**

**Player Death:**

* **Background Music Change:** Upon the player’s death, the background music should change.
* **Rotation:** The player will rotate 180 degrees to appear upside down.
* **Input disabled:** Upon player death, the player should not be able to move, cast spells, or take damage.
* **Mage Defeat Dialogue:** The mage should announce the player’s defeat with a unique audio cue, signalling that the game is lost.
* **Game reset:** Upon death, around 6 seconds later, the game should reset with the player in the middle of the map with all enemies and projectiles removed. It should appear as if the user just started the game from scratch.

### **Audio Testing:**

**Background Music:**

* Ensure background music plays at the start and changes appropriately when the player dies. It should revert back upon game restart after death.

**Sound Effects:**

* Verify the following sound effects play at the correct moments:
  + Fireball shot.
  + Enemy hit.
  + Player taking damage (clanking noise).
  + Defeat announcement when the player dies.