Main Mechanics Systems Design Document

Shooting

Bullets fired from weapons shall be instated as game objects and sent along the **AIM LINE** called when the player calls the action. This will give the game the desired bullet hell of projectiles that can be dodged and navigated through.

Weapon prefabs:

Elements:

- Bullet Prefab
- Particle system
- Sound clip
- **AIM LINE**

Pseudo Code:

1. The player presses the fire button
2. The game checks ammo and calls aiming raycast of the gun bullet for trajectory.
3. Instances the bullet prefab, Sound clip, and sets of Particle System.

Aim LINE

A Visible Line from the player's gun that Contains a get function to retrieve the position of the ray cast emitted from where is aiming with the **RIGHT ANALOG STICK** the players. Updates the positions every fixed frame.

Elements:

Aim Line
Line Colour
1. Update get an input of right analog stick and update the position of AIM Line.
4.

Bullet Prefabs:

Elements:

- Speed
- Lifetime
- Timer
- Particle system
- Ricochets

Pseudo Code:

1. When instantiated sets its velocity to SPEED.
2. If it hits something checks if the object has a health component. **(Event)**
   a. Passes damage, checks if health has dropped to zero, and destroys itself.
   b. Else if it hit anything other than a Shield Object check Ricochets
      i. if greater than X Turn off Shield object.
      ii. Else increase velocity by X and return.
3. If Timer reaches the amount of Lifetime. It destroys itself. (**Polling**)
4. On Destroy sets of Particle system for desire VFX and sound clip. (**Event**)

Reflector

A **Shield Object** that hovers over the character's position as a turning of sphere until triggered. Once on it ricochets bullets off of its surface however it only turns off for x amount of seconds.

Reflector Prefab

Elements:

- Active time
- Timer
- Sound Clip

Pseudo Code:

1. On enabled Wait until Timer equal to Active Time.
2. Play Clip.
3. Wait for a clip to end then Disable object.

Grappling Hook

A quick-fire Weapon that Shoots a small trigger box along a trajectory called by the **Radical**

Grappling Prefab

Elements:

- Rope Length
- Sound Clip(Launch, Retract, Hit)
- Speed
- Target Position
- Current Position

Pseudo Code:

4. On enabled adds force to the grappling hook and plays launch Sound Clip.
5. If it hits something it checks if it is a player or a wall
   a. Play Clip.
   b. If the **other** character
      i. Set target position to the hit object and the current position to your parent object's position.
      ii. Then move to bother object to their new positions.
         1. Parent object to Target Location.
         2. Hit Object to Current Location.
      iii. Then retract at adding force in the direction of X with SPeed, play Retract clip and disable self.
   c. If a **wall**
      i. Set target position to where it hit the wall and the current position to your parent object's position.
      ii. Then move to bother object to their new positions.
         1. Parent object to Target Location.
      iii. Then retract at adding force in the direction of X with SPeed, play Retract clip and disable self.
6. Wait for a clip to end then Disable object.

Ghost Mode

Ghost Mode Script

Elements:
- Sound Clip(Ghost mist noises)

Pseudo Code:
7.