Concept:

Overview: The game is a side-scrolling platformer inspired by classic Mario and Sonic the Hedgehog games, featuring coin collection, interactive maps, obtaining guns, killing enemies, and progressing through levels.   The core gameplay involves guiding a character through various levels, collecting coins, and overcoming obstacles while avoiding or defeating enemies. The game will have a playful, adventurous theme with a focus on exploration and navigation, as well as ghost accumulation.

Genre: Side-scrolling Platformer

Story: In this game, the protagonist embarks on a quest to reach the end of the level, pick up guns, and kill as many enemies as possible to accrue swirling/hovering ghosts. Each level represents a different environment, such as a forest, island, an underwater world, and ice.

Existing Games: Inspired by Super Mario Bros. and Sonic the Hedgehog, but with unique level design mechanics and interactive elements tailored to the player's actions.

Target Audience:

- **Age**: All ages

- **Experience Level**: Suitable for both beginners and experienced players who enjoy classic platformer mechanics.

- **Gaming Preferences**: Fans of retro platformers, casual gamers looking for light-hearted gameplay, and players who enjoy exploration and puzzle-solving.

Visual Design:

Style:

- **Art Style**: Colorful, cartoonish, and vibrant. The visual style will evoke a nostalgic feeling reminiscent of early 90s platformers.

- **Character Design**: The main character will have a friendly design, while enemies will be varied and thematic for each level.

Core Game Mechanics

1. **Controls:**

   o **Mouse Aim:** Players use the mouse to aim the avatar's weapon.

   o **Right Mouse Button:** Fire bullets at oncoming enemies.

   o **W, S:** Control character motion (forward, backward).

   o **Spacebar:** Jump.

2. **Avatar Selection:**

   o Before starting the game, players toggle through a few character options. Each avatar has unique abilities or aesthetics.

   o Once chosen, the selected avatar enters the ghost-infested world.

3. **Bullets and Guns:**

   o Bullets follow realistic projectile physics, with an initial angle dependence.

   o All bullets have consistent speed and size.

   o Guns automatically pick up when the avatar approaches them on the ground.

   o Maximum of 3 guns available, each with distinct sounds, bullet appearances, and visual design.

4. **Enemy Types:**

   o **Smaller Enemies:**

     • Require three shots to defeat.

     • Fast and agile, they swarm the player.

   o **Bigger Enemies:**

     • Tougher opponents.

     • Need five shots to take down.

     • Slower but more resilient.

5. **Bullet-Enemy Interaction:**

   o Bullets collide with enemies, preventing them from passing through.

   o Upon impact, enemies transform from their original sprite to an explosion sprite.

   o Accompanying sound effects enhance the satisfaction of successful hits.

6. **Ghost Transformation:**

   o After defeating an enemy, it transforms into a ghost sprite.

   o Ghost physics:

     • Adjusted momentum and friction for a floaty, ethereal feel.

     • Ghosts collect around the avatar, remaining on the same layer.

- They "float" alongside the avatar's motion, creating a haunting visual effect.
- Sound effects add to the eerie atmosphere.

7. **Physics of Diverse Environments:**
   o Terrain creates different physics:
   - **Underwater Level:**
     - Slight drag on avatar motion, simulating swimming.
     - Godot physics engine assists in achieving this effect.
     - Bubble sprites periodically pop up, emphasizing the underwater theme.
   - **Ice Level:**
     - Friction reduced on ice tiles, making avatar slip and slide, and affects player speed
     - Snowflake sprites added to make the game more visually appealing, also simulating wind
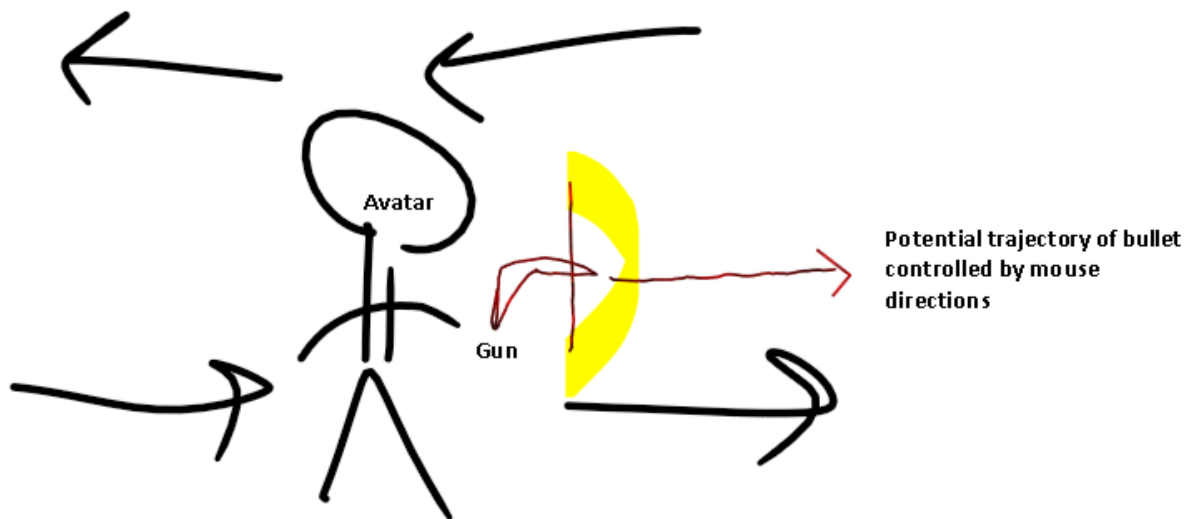
8. **Scoring and Progression:**
   o Points accumulate as ghosts are acquired.
   o Levels flow seamlessly, one after the other.
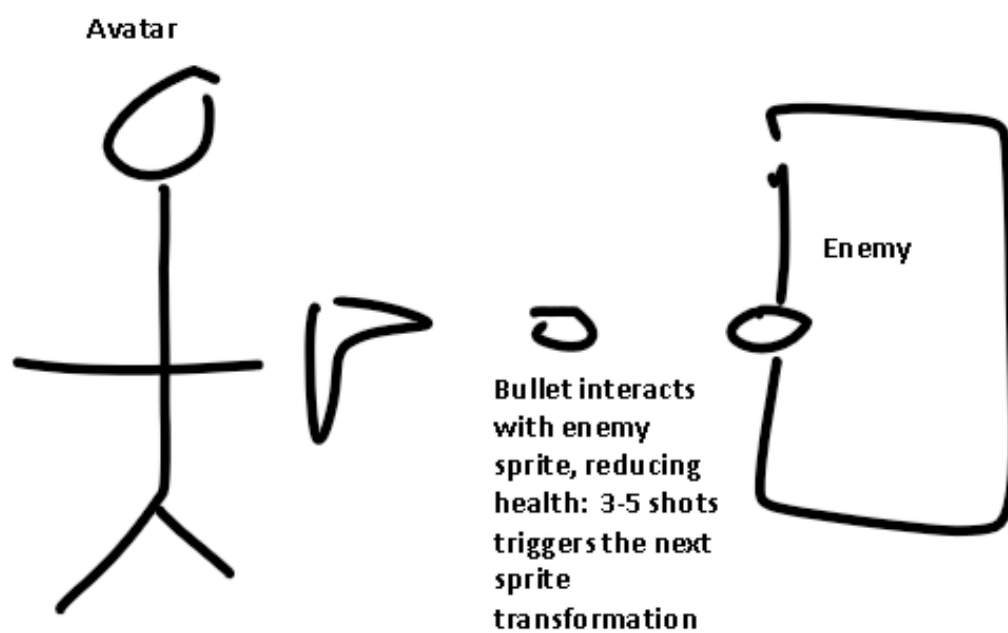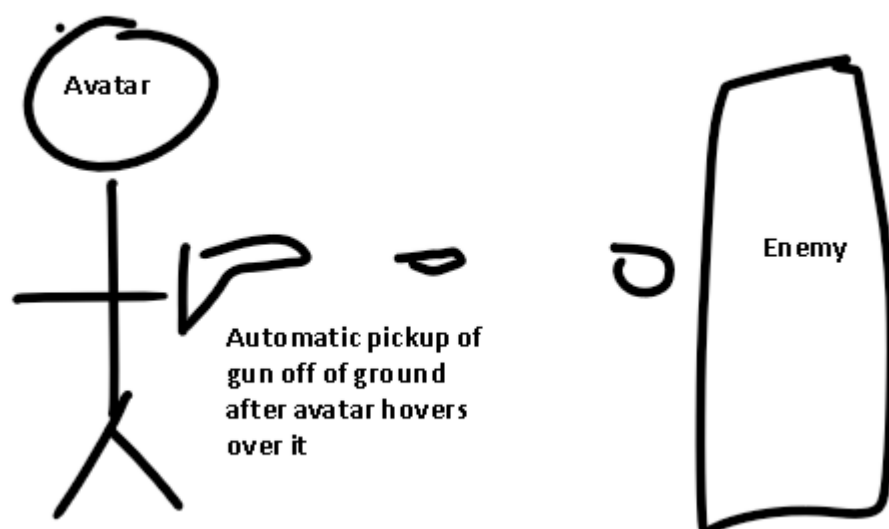   o Enemies and ghosts reset at the start of each level, but the score stays the same.
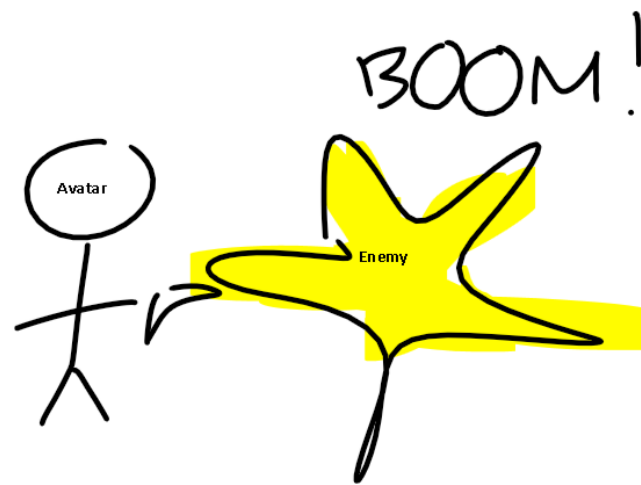
9. **Player Survival:**
   o Players lose hearts if touched by an enemy more than once.

- The first touch results in a point deduction; the second will result in a loss of a heart. Five hearts initially provided- This amount will be adjusted based on gameplay difficulty.

W and S will control the direction of the avatar's motion, with the right mouse controlling aim of gun

Avatar

Gun

Potential trajectory of bullet controlled by mouse directions

Avatar

Automatic pickup of
gun off of ground
after avatar hovers
over it

Enemy

Avatar

Bullet interacts
with enemy
sprite, reducing
health: 3-5 shots
triggers the next
sprite
transformation

Enemy

After 3-5 shots, enemy is transformed into explosion

Avatar has ghost trailing user's motion

Before	During the shot	After

enemy transformed into a ghost