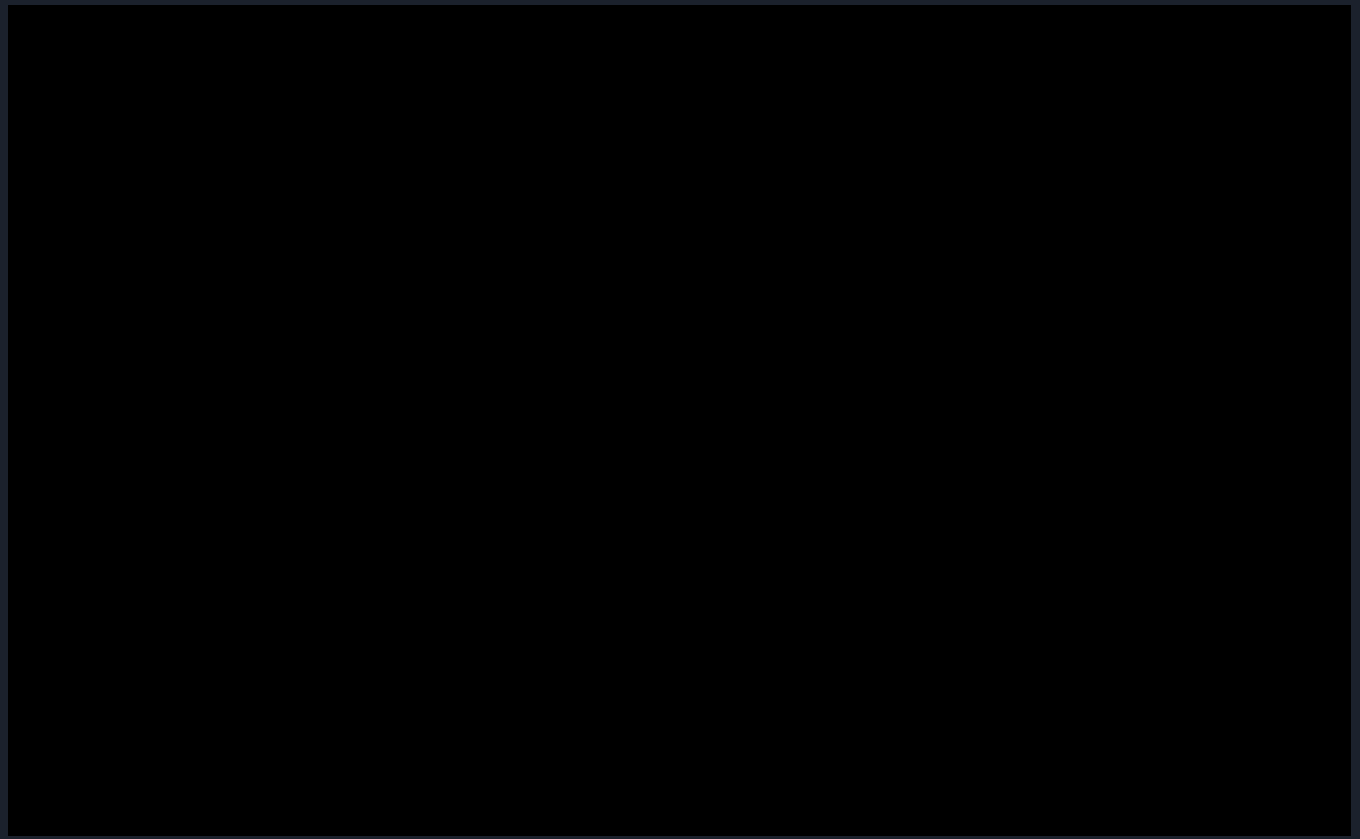
Capsule-Man 2

By: Alex Fratepietro

Introduction

- Why I decided to make a game
- Playthrough
- The creation process
- Reflection

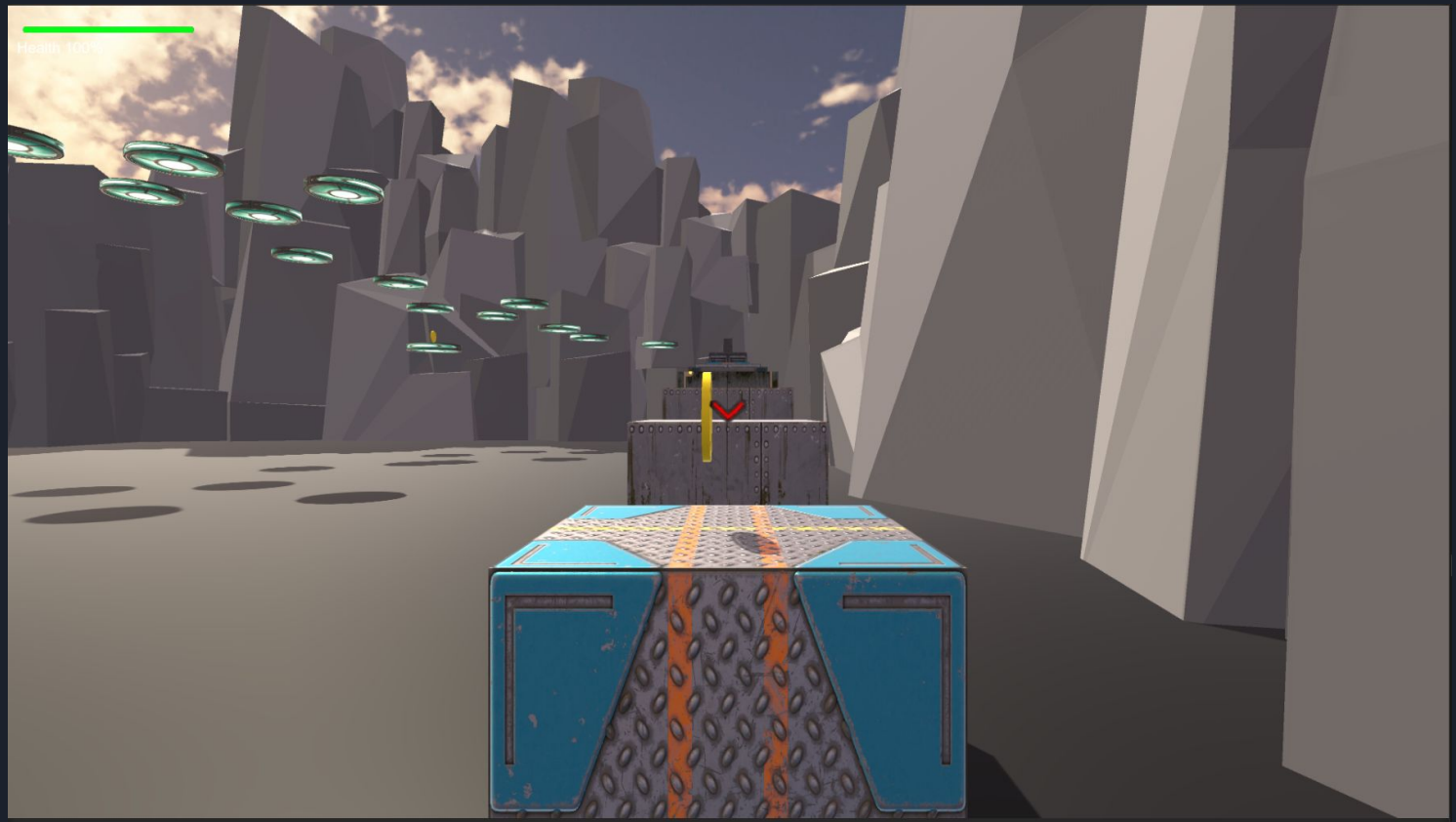
Playthrough



Learning Unity and C#

- The internet
- Youtube
- Unity API documentation
- Stack overflow
- Expert from expert night

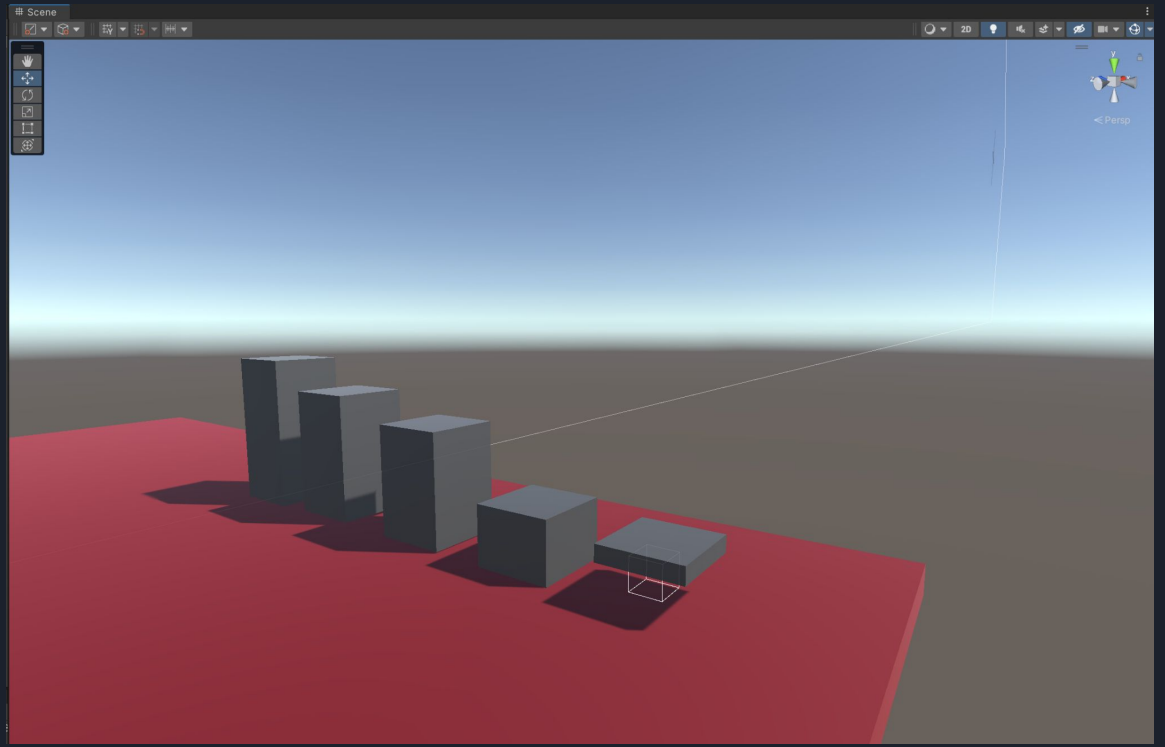
Level 1 Design Process



Start Simple

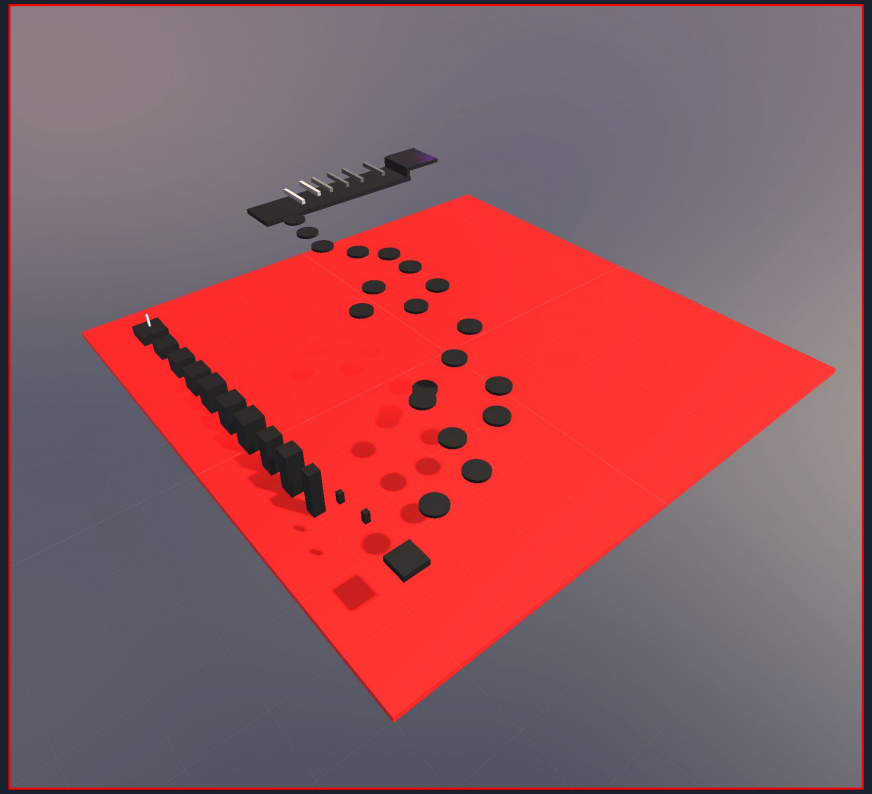
- No textures or models
- Just necessities
- Make sure everything is working

```
private void HandlePlayerMove() {
    // Move direction directly from axes
    float deltaX = Input.GetAxis("Horizontal") * moveSpeed;
    float deltaZ = Input.GetAxis("Vertical") * moveSpeed;
    _moveDirection = new Vector3(deltaX, _moveDirection.y, deltaZ);
    // Accept jump input if grounded
    if (_charCont.isGrounded) {
        if (Input.GetButton("Jump")) {
            _moveDirection.y = jumpSpeed;
        } else {
            _moveDirection.y = 0f;
        }

    }
    ApplyMovement();

}
```



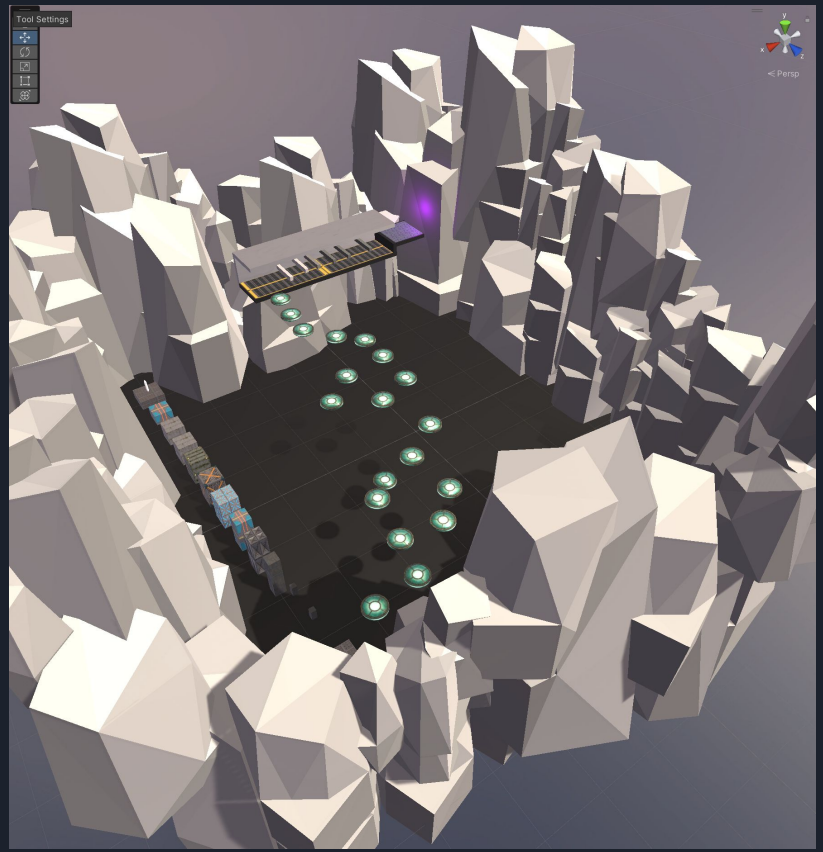
Finish Map

- Layout of full level map
- Still no textures or models
- Completion of parkour



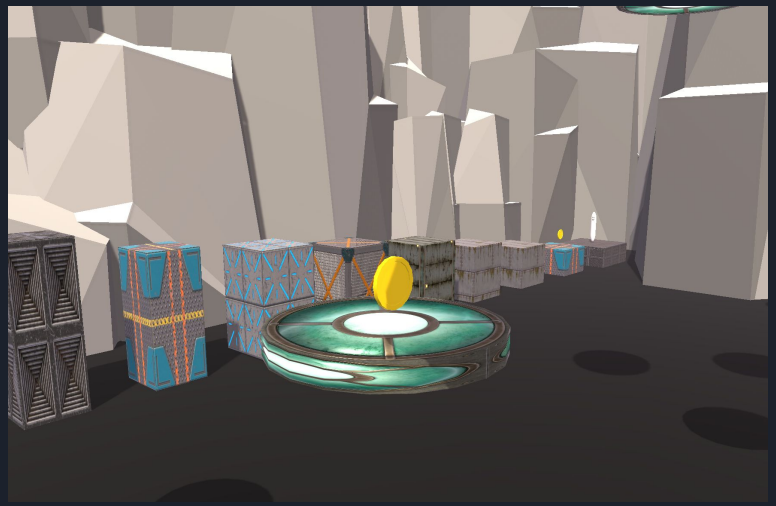
Add Textures and Map Design

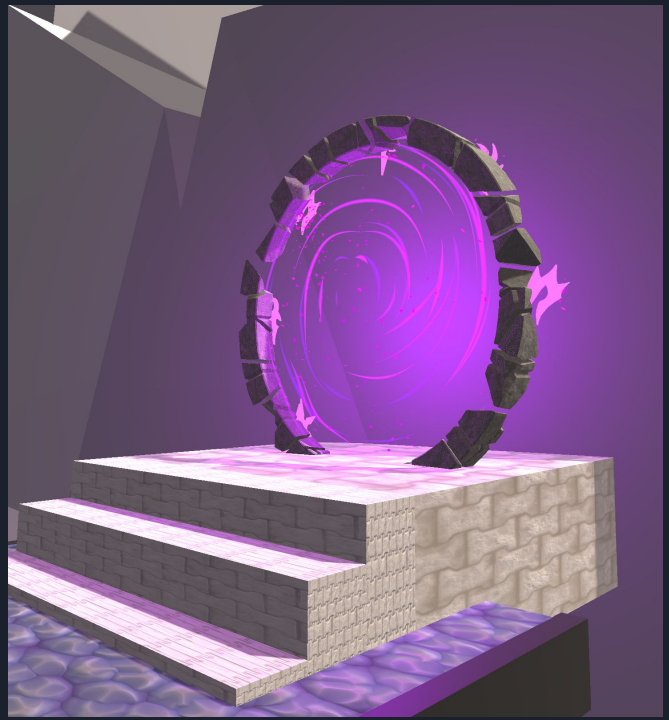
- Add textures and models
- Rocks and jump textures



Add Details, Extras and UI

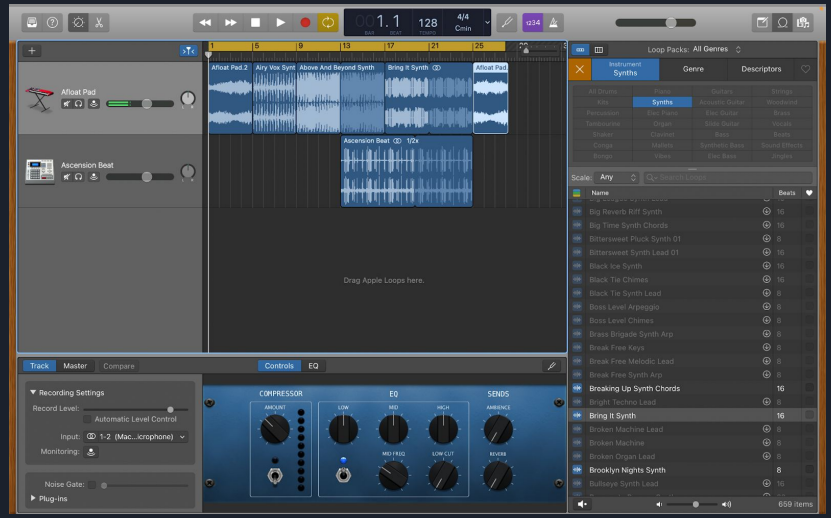
- Link to other levels
- Crosshair User Interface (UI)
- Coins

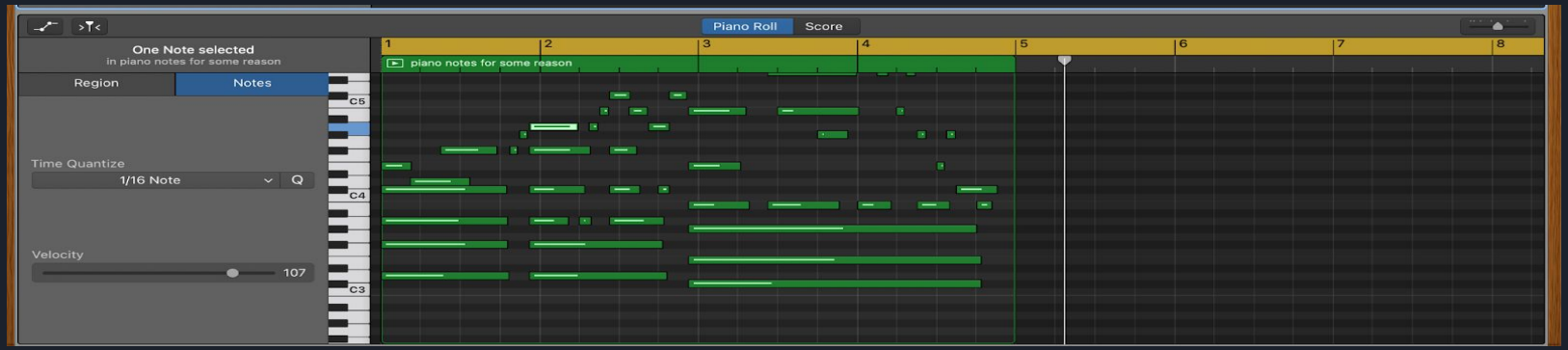




Music

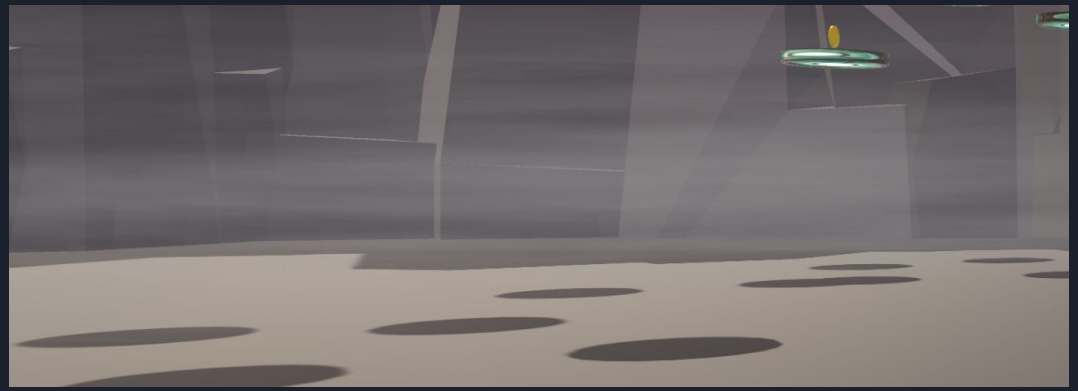
- Music done by Joe Jackson
- Different genres for each level
- Menu theme





Particle Packages

- Add interest to visual effects
  - Fog
  - Snow

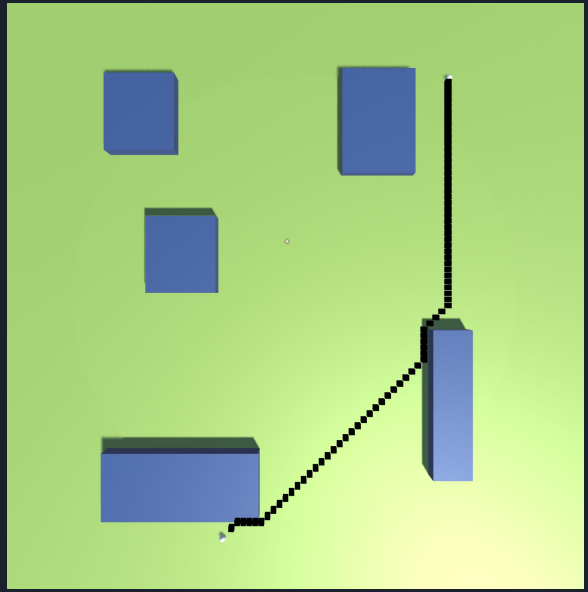


Enemy Pathfinding Process

-Three numbers:

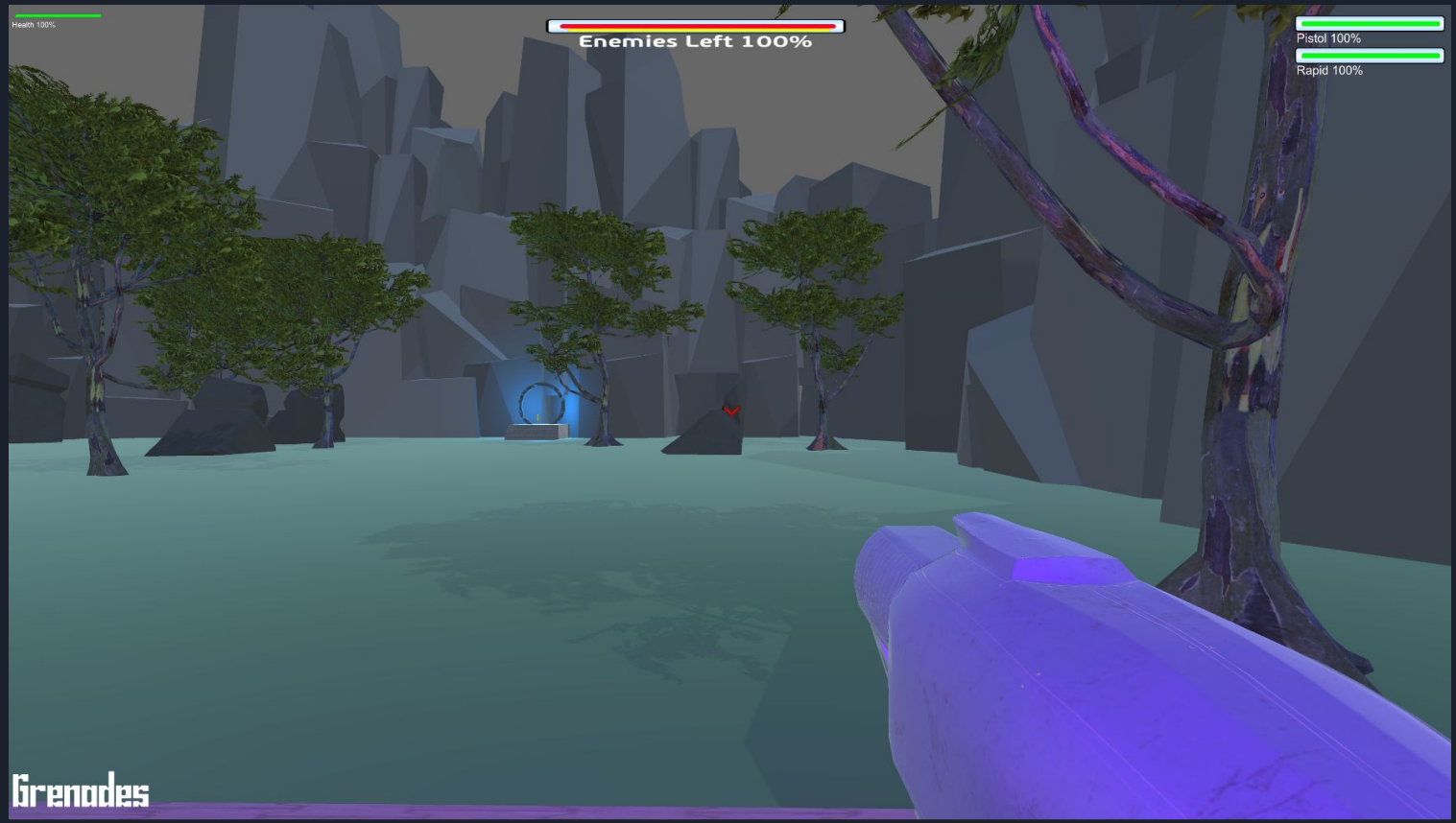
- G cost
- H cost
- F cost

-Nav-Mesh



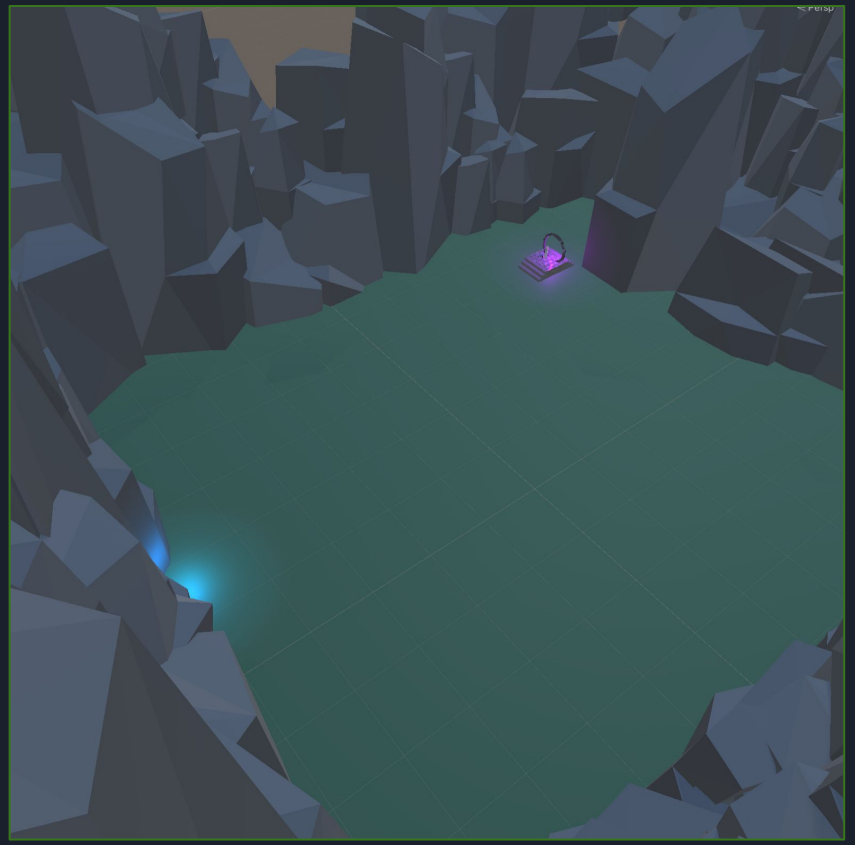
```
            foreach (Node neighbour in grid.GetNeighbours(currentNode)){

                if (!neighbour.walkable || closedSet.Contains(neighbour)){
                    continue;
                }
                int newMovementCostToNeighbour = currentNode.gCost + GetDistance(currentNode, neighbour)
                if (newMovementCostToNeighbour < neighbour.gCost || !openSet.Contains(neighbour)){
                    neighbour.gCost = newMovementCostToNeighbour;
                    neighbour.hCost = GetDistance(neighbour, targetNode);
                    neighbour.Parent = currentNode;

                    if (!openSet.Contains(neighbour))
                        openSet.Add(neighbour);
                }
            }
        }
```

Level 2 Design Process



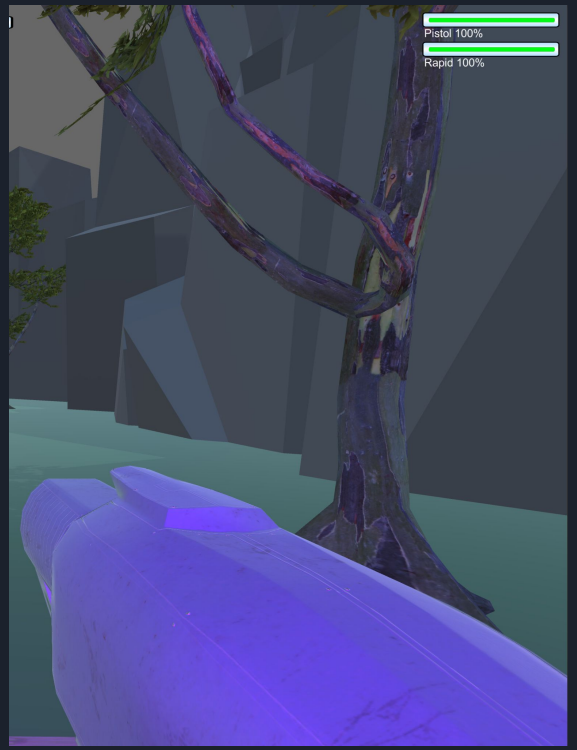
Use Same Starting Steps

- Same movement
- Similar map designs
- Change in lighting and scenery



Add Weapon and Firing Capabilities

- Required learning about instantiation
- Display ammo in quicktime
- Check for collision with enemies

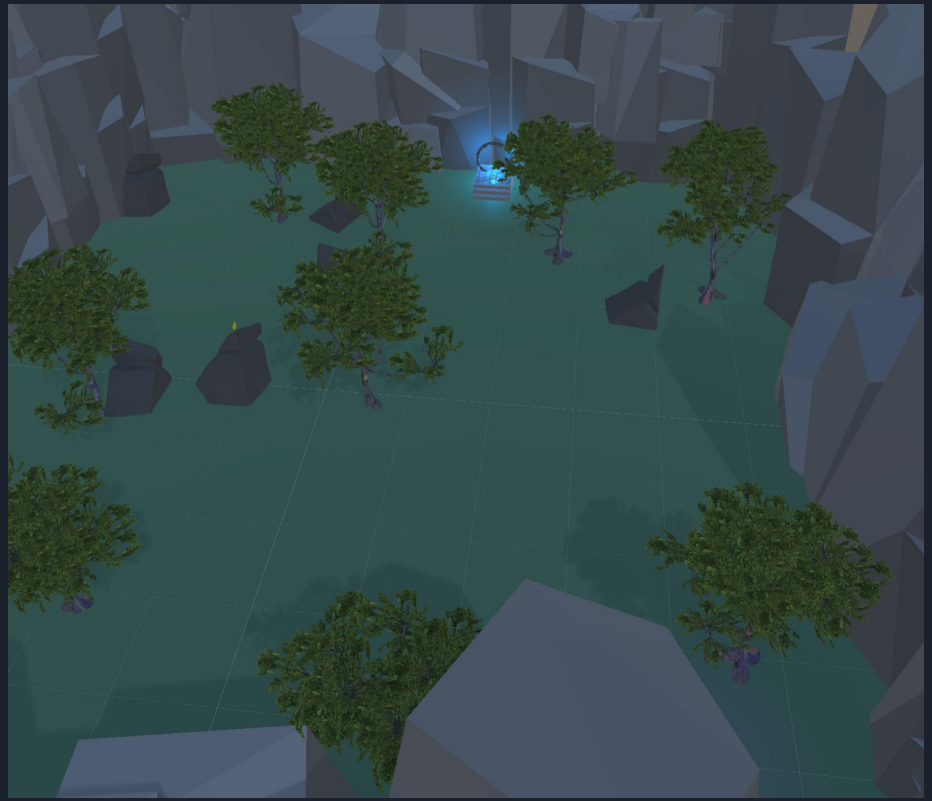


Enemies

- Designed in Blender
- Tracking stats for each enemy
- Pathfinding
- Attack / damage to player

Add Additional Details

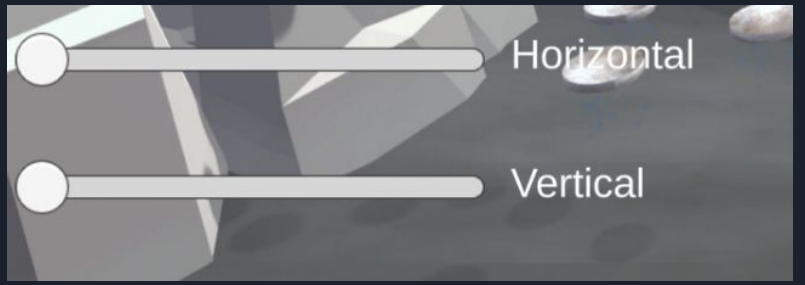
- Grenade option
- Extra obstacles (trees and rocks)
- Sky
- Coins
- Music



Menu Design Process

Receive Inputs

- Sensitivity inputs
- Button returns




```
public void ChangeH (float val) {
    PlayerStat.sensH = val;

}
public void ChangeV (float val) {
    PlayerStat.sensV = val;

}
```

Tips and Stats

- Counters for different stats
- Tips on how to survive


```
private void Update() {
    txt.text = "DEATHS: " + PlayerStat.deaths.ToString();
    stat.text = "KILLS: " + PlayerStat.kills.ToString();
    coins.text = "COINS: " + PlayerStat.coinCollect.ToString();
}
```

Putting the Game Online

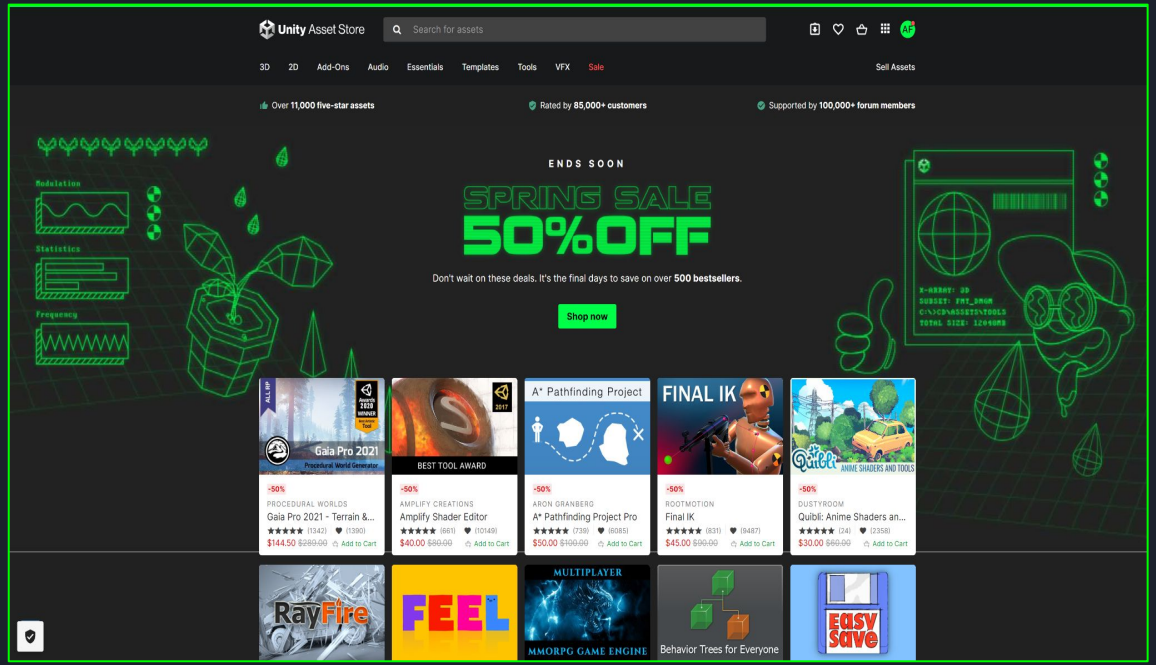
- Using Simmer.io
- Game address:

  https://simmer.io/@_Frate_/capsule

Software Used

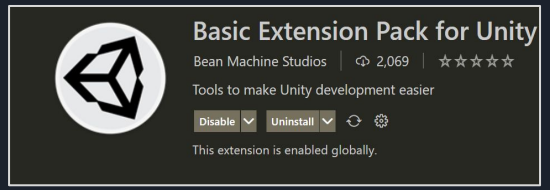
Unity Asset Store

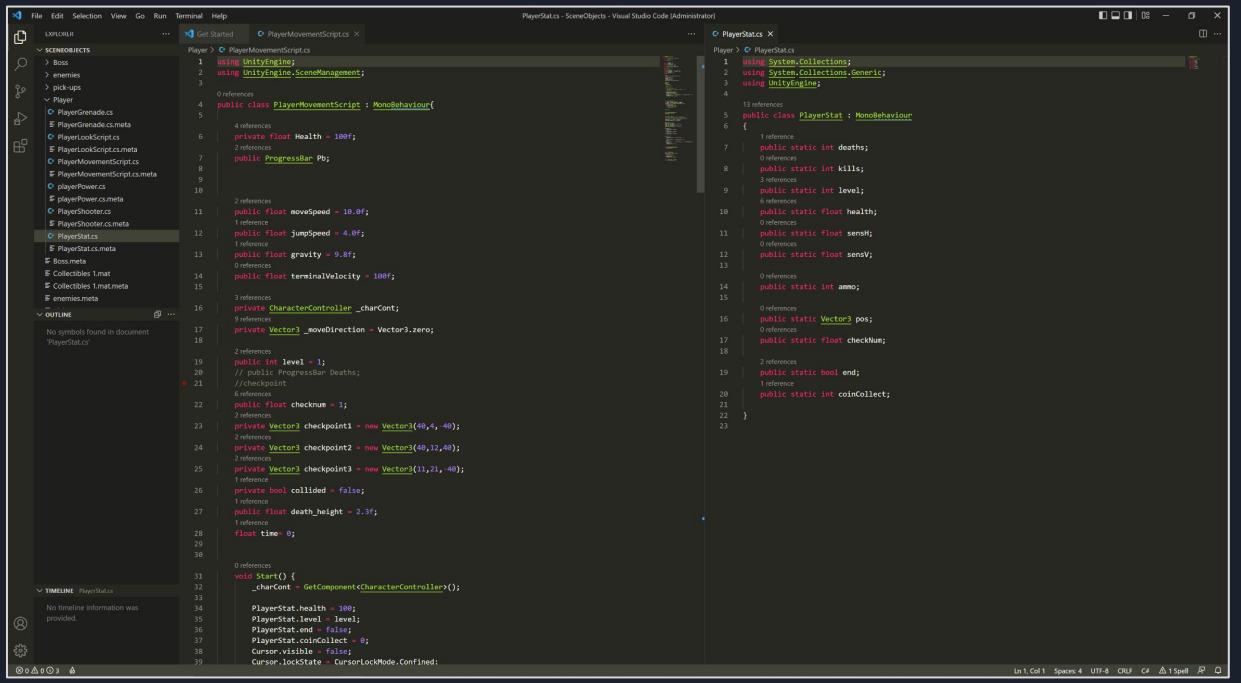
Place to download useful textures and models



Visual Studio Code

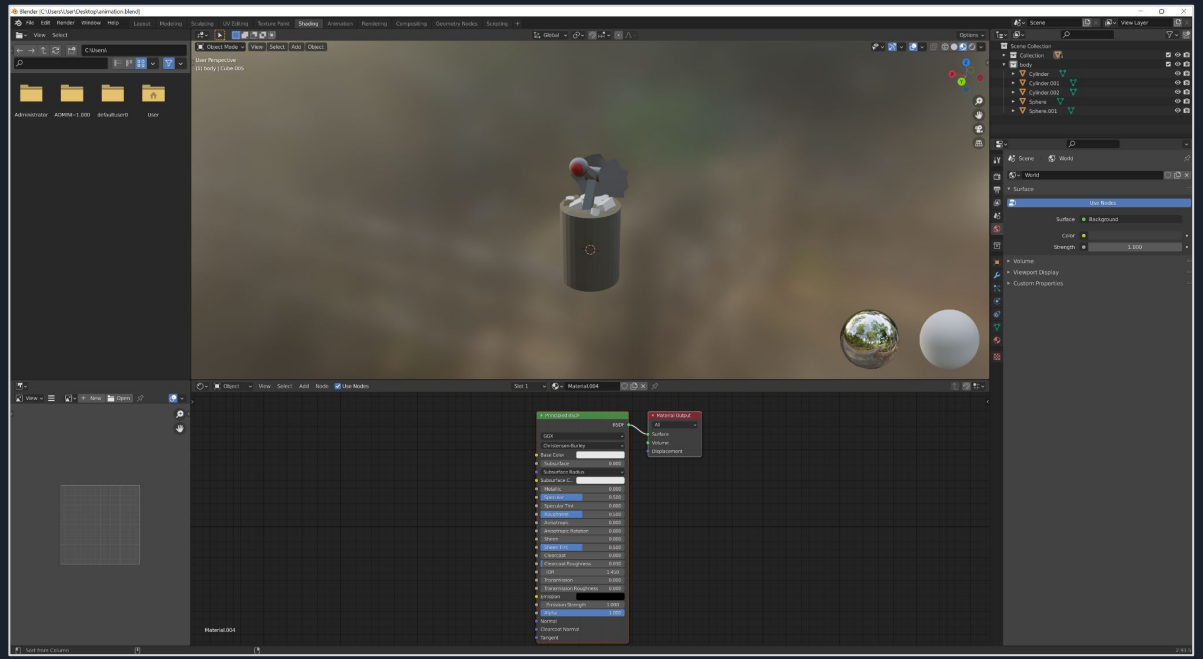
How the game was coded





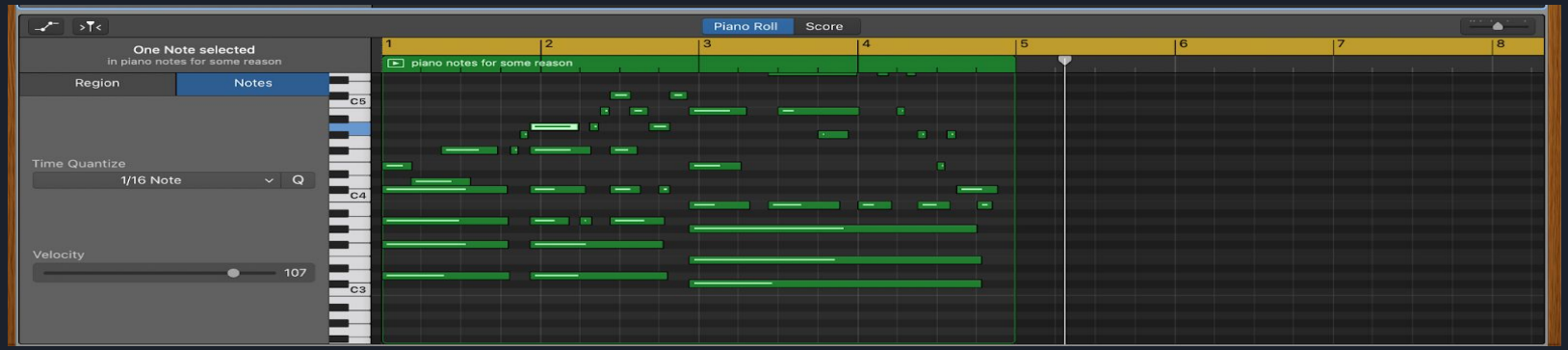
Blender

How models were created, edited and textured



Garage Band

- Easy to use
- Knew the basics



With More Time...

- Final Boss Level
- Rendering settings / graphics
- Database stats such as High Score