

CS 485 Midterm Project Writeup 1

- Harshit Lamba

Game Objective: Killing multiple zombie waves in a fun and interactive game map.

Team-mates:

- Matthis Pierre Jean Le Texier
- Aymeric Geoffery Figuié
- Cedric Cevag Karaoglanian
- Harshit Lamba

1. Topics Learned in Unity So Far

- Being a beginner in game programming, the objective of implementing a game by myself from scratch was a challenge itself.
- Initially I started with learning how the unity layout works and how all the tools are supposed to be used while developing any project. Here I also understood the basics such as prefabs, assets, moving scaling and rotating different objects in the Scene window.
- Since I had some far too creative ideas initially to work with, me and my group mutually decided that it would be best for me to start working on a map for the game right away.
- Initially wanted the zombie wave to be played on a map which was like our school. After seeing several tutorials online, I realized it would be really time consuming to implement a CSUSM map for our game. Then we decided to create a map in the forest which would also give more appeal to our game.
- I also learned several functions in the inspector window for different prefabs which are bring clubbed for our map.
- Lastly in the end I worked on some unity scripting for animations and effects which would be placed all around in our map.
- Using the online tutorials I also learned how important it is to work with the lighting and the physics of the game at any point.
- Links where I learned the basics and so far all that I have implemented:
 - : <https://www.udemy.com/course/introduction-to-game-dynamics/learn/lecture/1263616#overview>
 - : <https://www.udemy.com/course/draft/54139/learn/lecture/306948#overview>
 - : <https://www.udemy.com/course/unity-game-developer/learn/lecture/6985966#overview>
 - : <https://www.udemy.com/course/how-to-make-a-shooting-game-make-a-complete-game-in-unity/learn/lecture/13161626#overview>

2. Contribution for the game proposal

- Since we all are big time game enthusiasts, we easily outlined out game objectives with a few brainstorming sessions.
- Initially, we had several ideas for our game, and it was difficult to eventually decide what we would all love to work on.

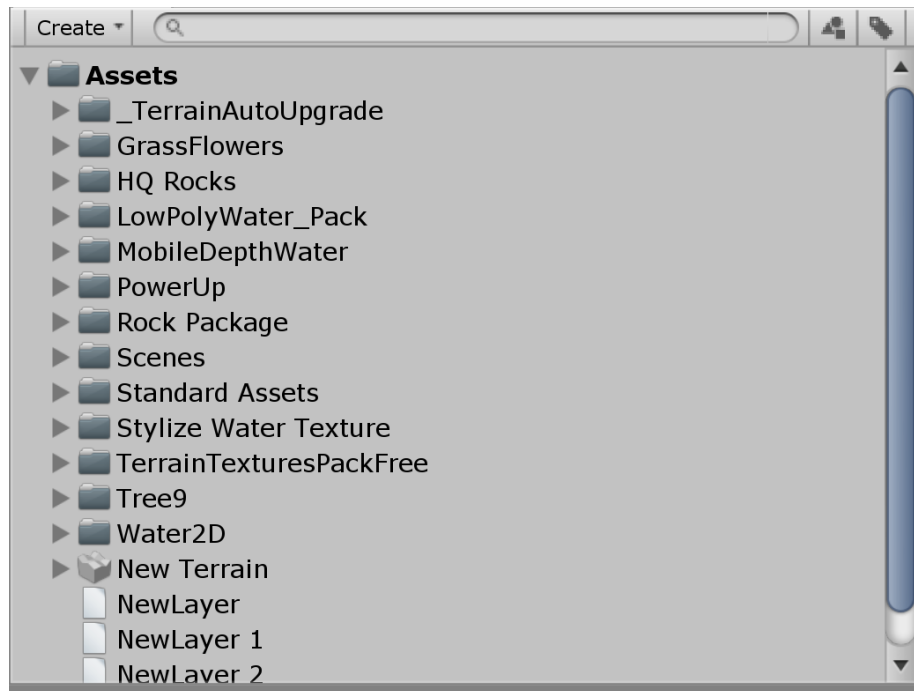
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- My teammates considered have taken into consideration all my ideas related to the game map development and creation for our project proposal.
- I also contributed for the proposal by suggesting further concrete ideas for our game play and user interactivity.

3. Assets found/created (including images audio/ 3D models)

- So far, I have imported several game assets for the map from the unity asset store.
- I have imported several assets for landscape textures, water, trees, rocks, grass, particles, skyboxes etc.

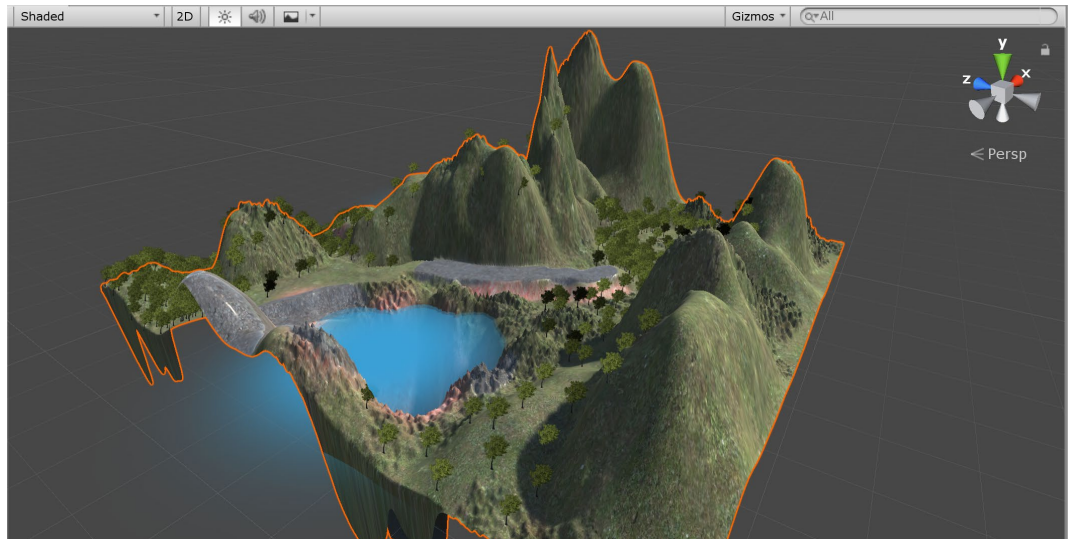
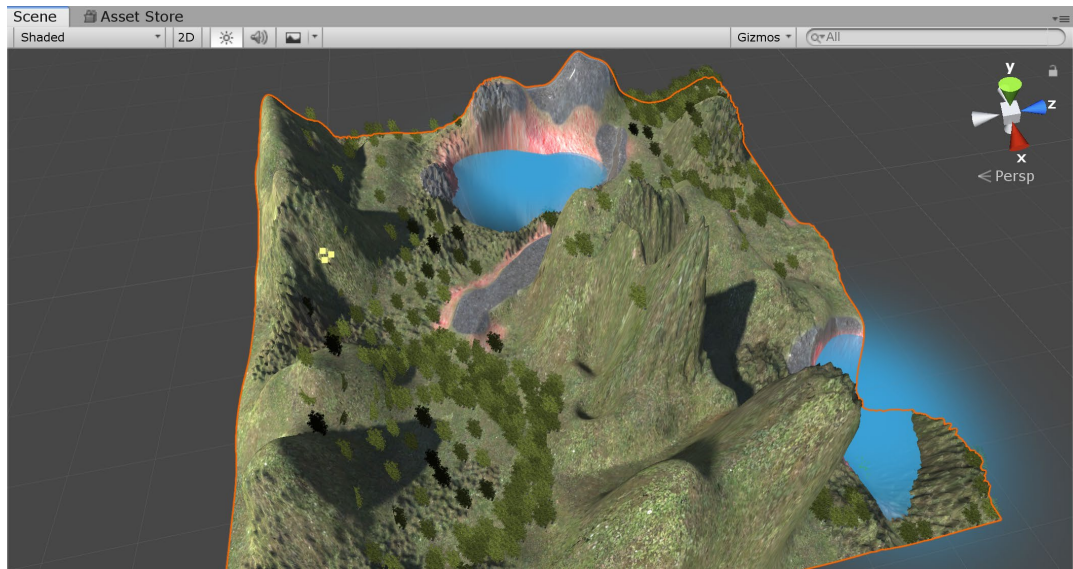


4. My Implementation

- I created a terrain initially, then using the paint tool I created the map and pond spaces on the entire terrain.
- Next, I set the different textures on the map based on different regions to make the map look as realistic as possible for the user.
- Further I added Trees, Rocks, grass, skybox and water body to the game map in a organized and logical manner.
- I also added few particle system GameObjects of different colors to the game in order for the player to figure out where they can find different resources (such as the health, ammunition, etc...) in the game to help the character to beat the zombies.
- I also am in the process of creating wind zones on the map. Also leaning more on the Constant Force Physics, Hinge and Spring joints as I write this report.

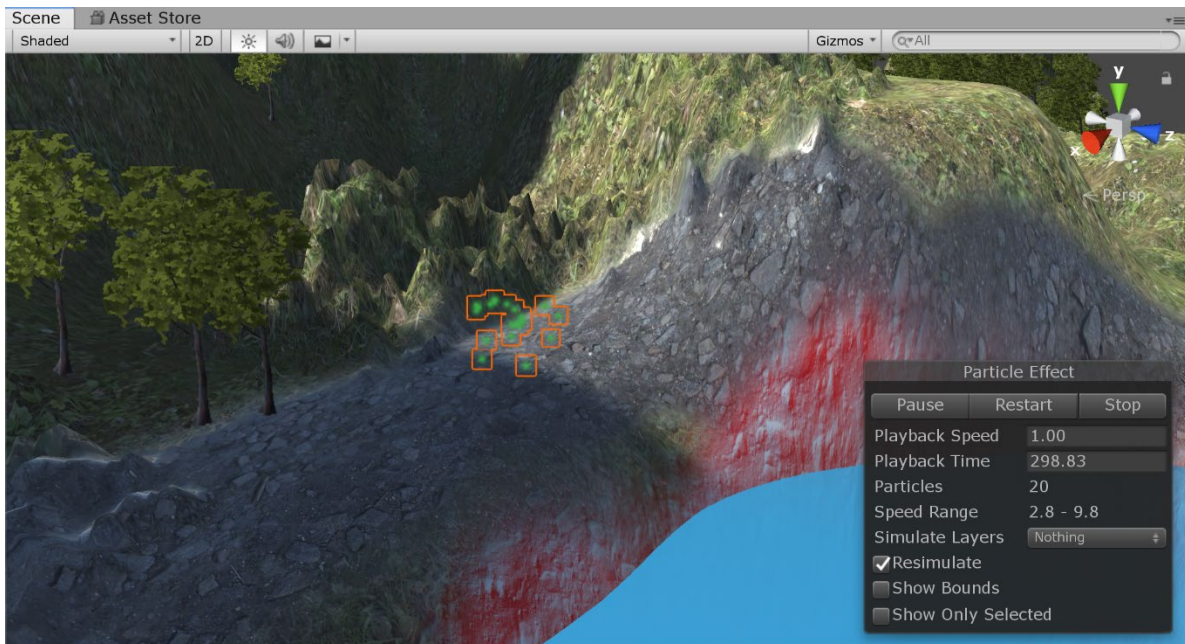
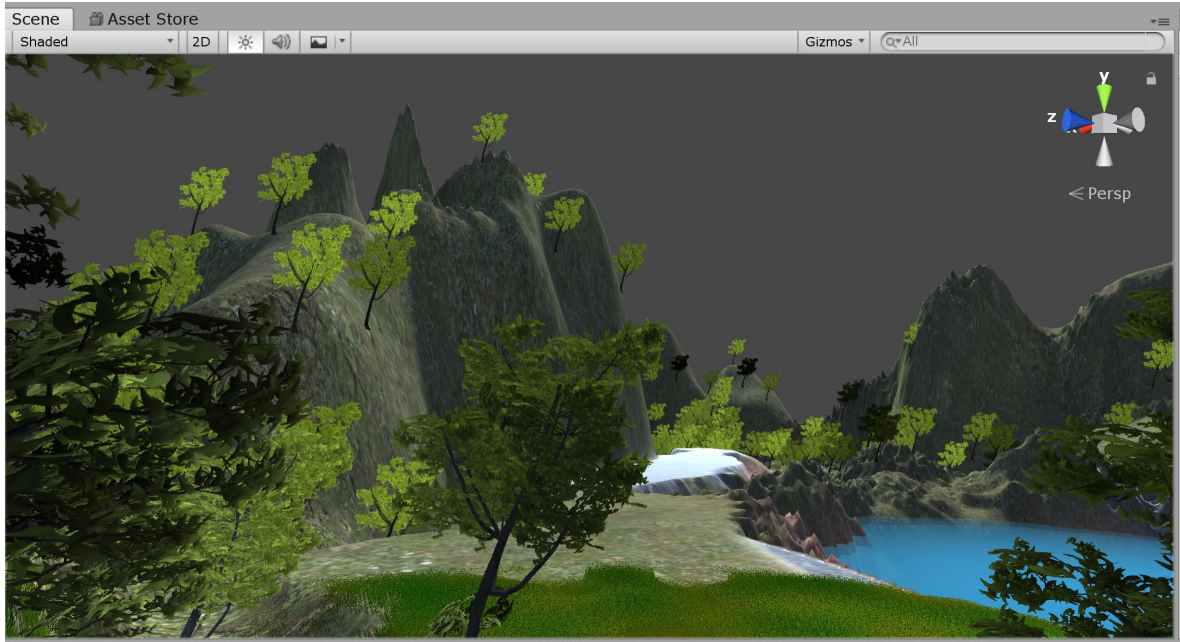
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```
1 using UnityEngine;
2
3 namespace LowPolyWater
4 {
5     1reference
6     public class LowPolyWater : MonoBehaviour
7     {
8         public float waveHeight = 0.5f;
9         public float waveFrequency = 0.5f;
10        public float waveLength = 0.75f;
11
12        //Position where the waves originate from
13        public Vector3 waveOriginPosition = new Vector3(0.0f, 0.0f, 0.0f);
14
15        MeshFilter meshFilter;
16        Mesh mesh;
17        Vector3[] vertices;
18
19        0references
20        private void Awake()
21        {
22            //Get the Mesh Filter of the gameobject
23            meshFilter = GetComponent<MeshFilter>();
24        }
25
26        0references
27        void Start()
28        {
29            CreateMeshLowPoly(meshFilter);
30        }
31
32        /// <summary>
33        /// Rearranges the mesh vertices to create a 'low poly' effect
34        /// </summary>
35        /// <param name="mf">Mesh filter of gamobject</param>
36        /// <returns></returns>
37
38        1reference
39        MeshFilter CreateMeshLowPoly(MeshFilter mf)
40        {
41            mesh = mf.sharedMesh;
42            vertices = mesh.vertices;
43            meshFilter.mesh = mesh;
44        }
45    }
46 }
```

5. Whats next?

- Next, we are looking at clubbing our different tasks together into a single game file.
- We are also updating our objective list as we keep learning and finding new tricks in unity to implement on our project.
- I am also interested in adding several more objects and assets in order to make the game as interactive and fun as possible.
- I also plan to work with the player controls and different weapons which we plan to provide for our character in the game.