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Homework 2

CSC 631.01

Professor Yoon

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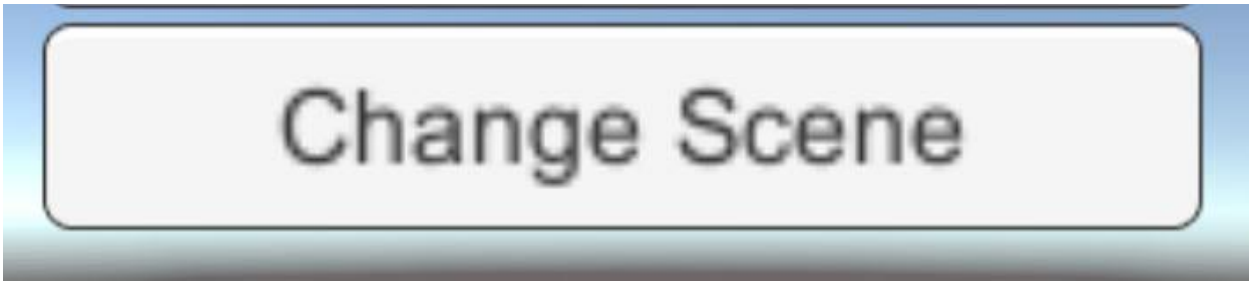
https://github.com/npng16/csc631-hw2

I was assigned parts b, d, e, and g. Before this homework was assigned, I have been watching and following a unity tutorial on Udemy, so I was a bit familiar with the unity editor already. The first part I worked on was e which was the scene transition with a button. I looked at a lot of youtube videos on ui elements. I created two new scenes called Scene1 and Scene2, respectively. I went to Scene1 and added a button under UI elements. I named the button ChangeSceneButton. Then I changed the text of the button to "Change Scene." I also created an empty game object called _Manager to manage scene transitions.



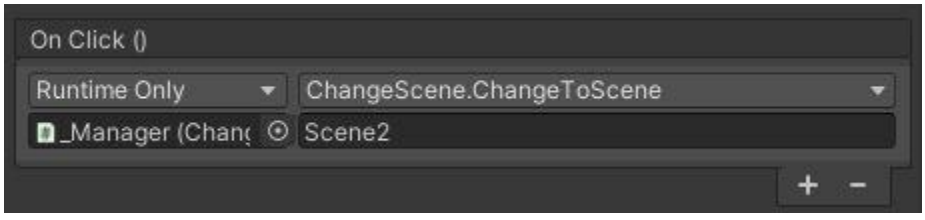
I went to inspector under the ChangeSceneButton and added a new script component called ChangeScene. In the script, I added this code:

ChangeScene.cs

Assets > ChangeScene.cs

```
1   using System.Collections;
2   using System.Collections.Generic;
3   using UnityEngine;
4   using UnityEngine.SceneManagement;
5
6   public class ChangeScene : MonoBehaviour
7   {
8       public void ChangeToScene(string sceneToChangeTo) {
9           SceneManager.LoadScene(sceneToChangeTo);
10      }
11  }
12
```

Under the inspector for ChangeSceneButton, I added an onClick event like this:

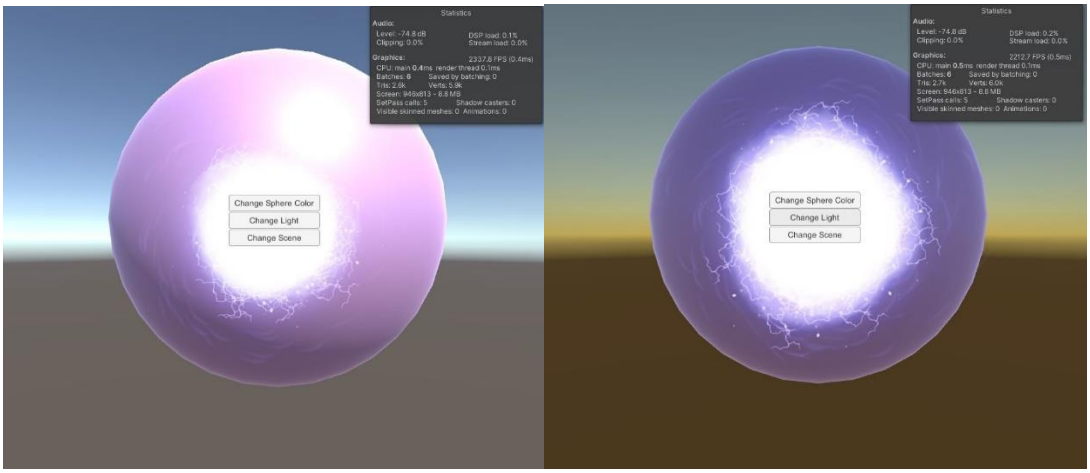


After doing that, I ran the scene and when I clicked the button, it went from Scene1 to Scene2.

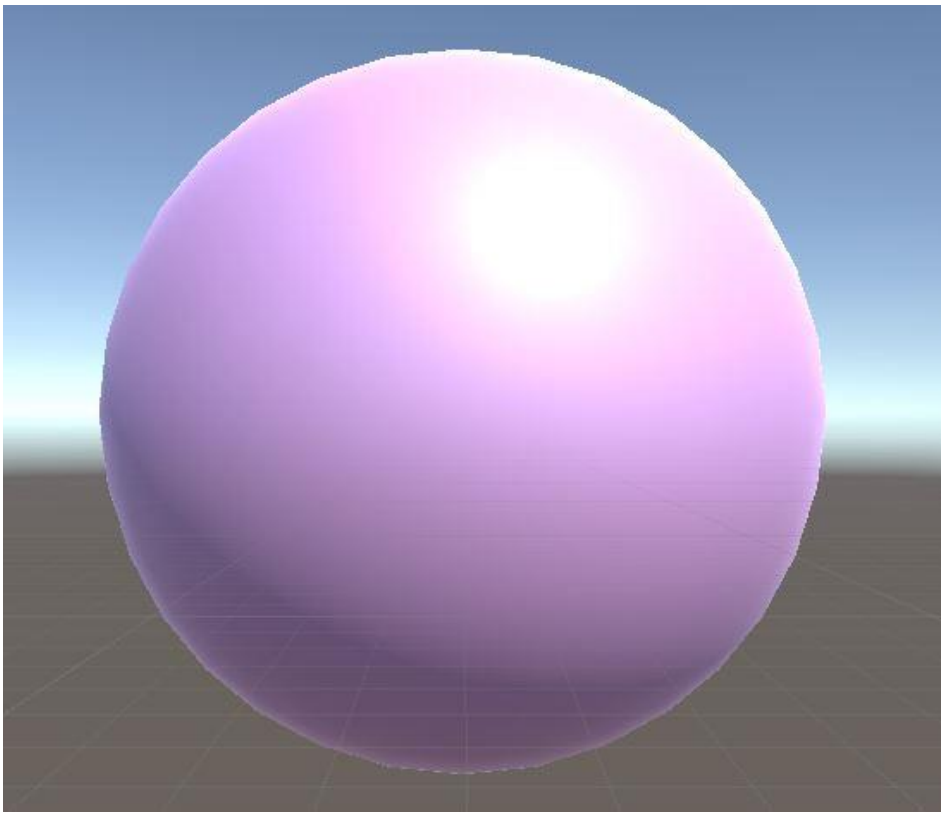
The second part I worked on was using a button to change the lighting so I started by creating a button called ChangeLightButton. I changed the text of the button to Change Light.

Instead of adding a script component like I did for the previous button, I just added an onClick event in button's inspector tab like this:

Now when I run the scene and click on the Change Light button, the directional light object is turned off.



The third part I did was using a button to change the color of a sphere. I created a sphere object named Sphere, a material named SphereMaterial, a button called ChangeColorButton, and a new script called ChangeColor.



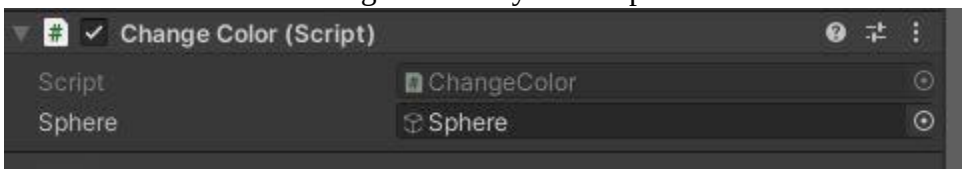
For the ChangeColor script, I wrote this code:

ChangeColor.cs

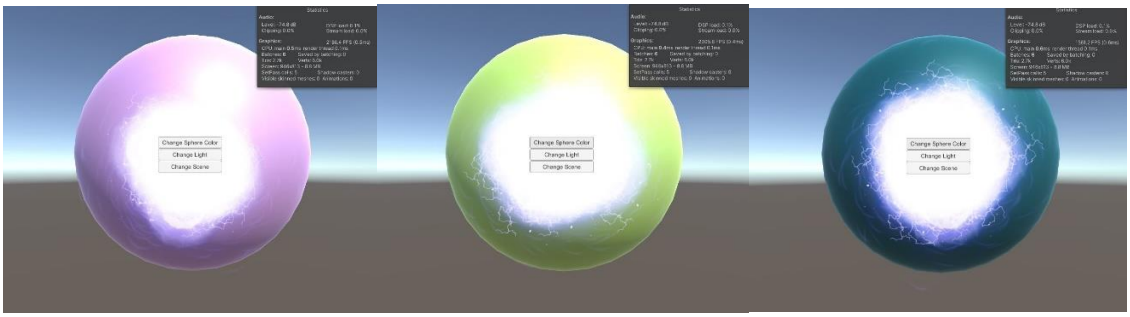
Assets > Scripts > ChangeColor.cs

```
using UnityEngine;
using UnityEngine.UI;

public class ChangeColor : MonoBehaviour
{
    [SerializeField]
    private GameObject sphere;
    private Renderer sphereRenderer;
    private Color newSphereColor;
    private float randomChannelOne, randomChannelTwo, randomChannelThree;
    // Start is called before the first frame update
    void Start()
    {
        sphereRenderer = sphere.GetComponent<Renderer>();
        gameObject.GetComponent<Button>().onClick.AddListener(ChangeSphereColor);
    }

    private void ChangeSphereColor() {
        randomChannelOne = Random.Range(0f, 1f);
        randomChannelTwo = Random.Range(0f, 1f);
        randomChannelThree = Random.Range(0f, 1f);

        newSphereColor = new Color(randomChannelOne, randomChannelTwo, randomChannelThree, 1f);
        sphereRenderer.material.SetColor("_Color", newSphereColor);
    }
}

```

I attached the ChangeColor script to the ChangeColorButton and add the Sphere as the object being affected by the script.

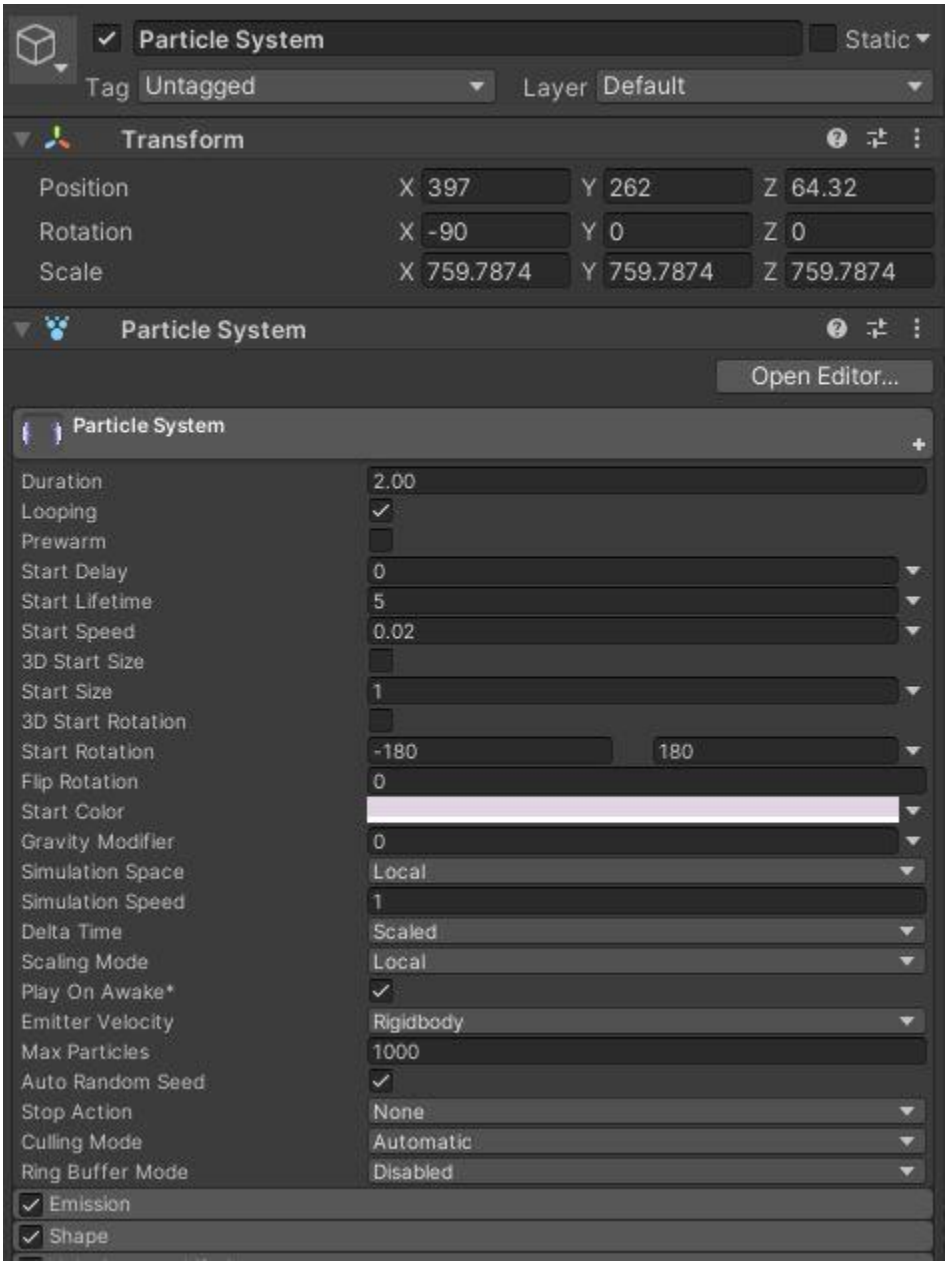


I pressed play and this is what happened when I pressed the Change Color button starting with the initial state on the left and final state on the right. The color changed each time after clicking the button twice.

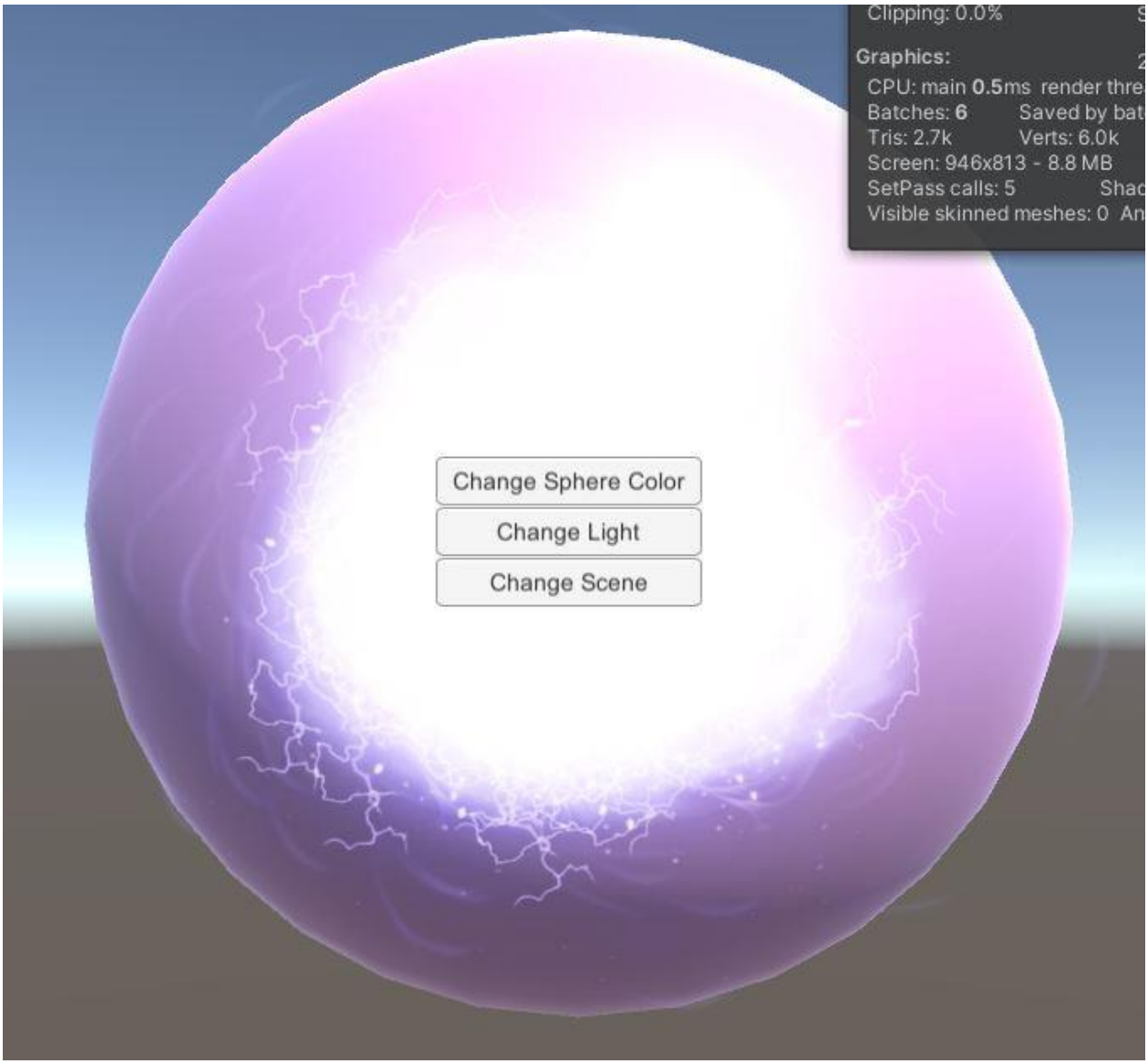


The last thing I worked on was particle effects. I think this was the most complicated of the four parts. I watched a youtube video that explained it well. I imported a material into scene one that the video used.

After that, I created a new particle system under effects. I added the ParticleMaterial to the Particle System under inspector and played around with some of the values.



I also positioned the particle system behind the sphere in the scene to make it look like there was an electric charged emitting from the inside of the sphere.



I really enjoyed working on this homework and I learned a lot more by doing rather than just reading from a textbook. I also got to work more with materials and applying them to game objects which will help with my role in the team.