Escape the Camera Cafe VR

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Corso di Laurea Magistrale in Intelligenza Artificiale

July 2022

The Project

What's the goal?

- Make a Camera Cafe themed VR Escape Room

What do we need?

- A game Engine
- Office Assets

Figure: Unity 2021.3.4f1 LTS

Figure: Synty Assets repository

Choice of Artificial VR Locomotion

Common Types of AVR locomotion:

- Teleportation
- Scripted Movement
- **Avatar Movement**
  - Snap Turn Provider: that rotates the rig by fixed angles
  - **Continuous Turn Provider**: that smoothly rotates the rig over time

Choice of Artificial VR Locomotion

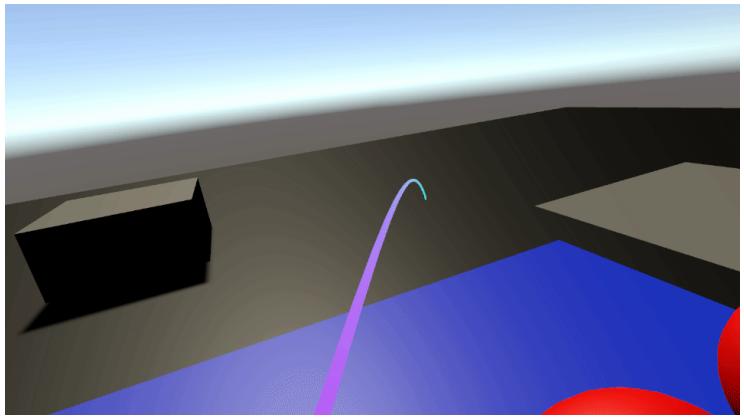


Figure: Teleportation

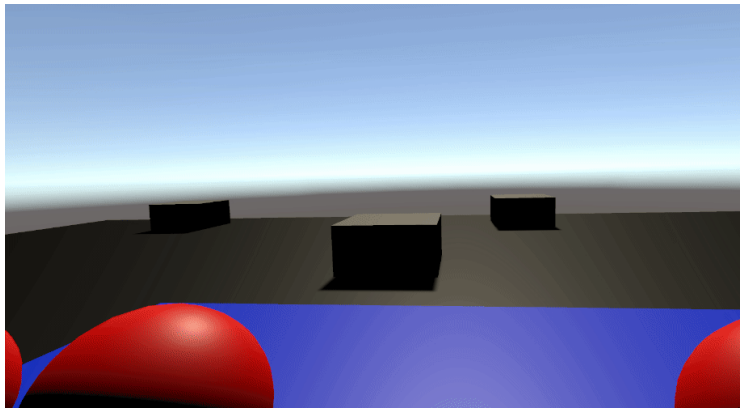
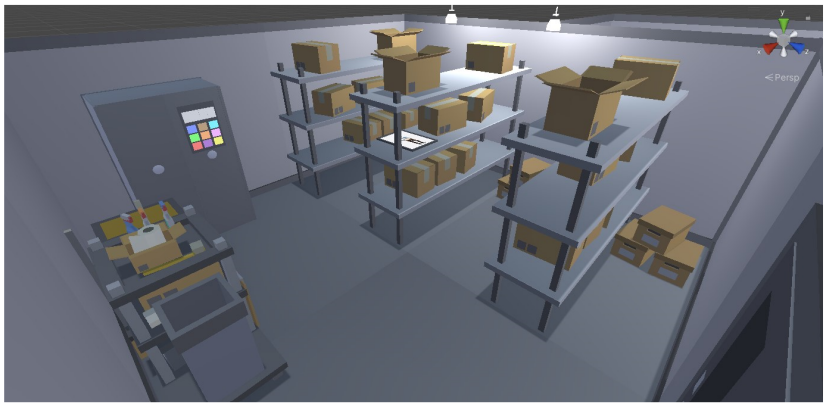
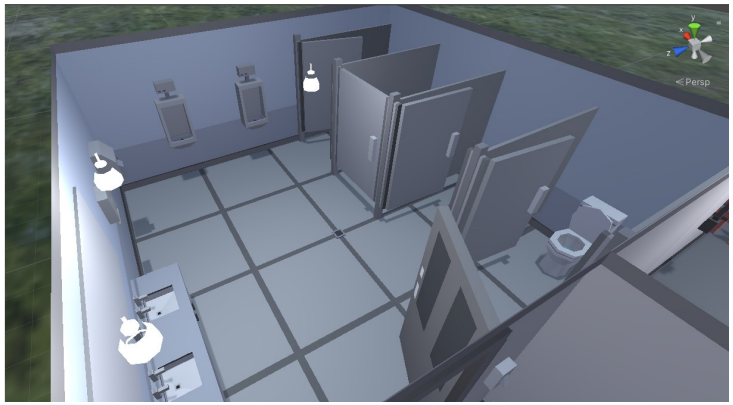


Figure: Continuous Turn Provider

Office Scene

Office Scene





Tutorial Scene

Tutorial Scene

Layer

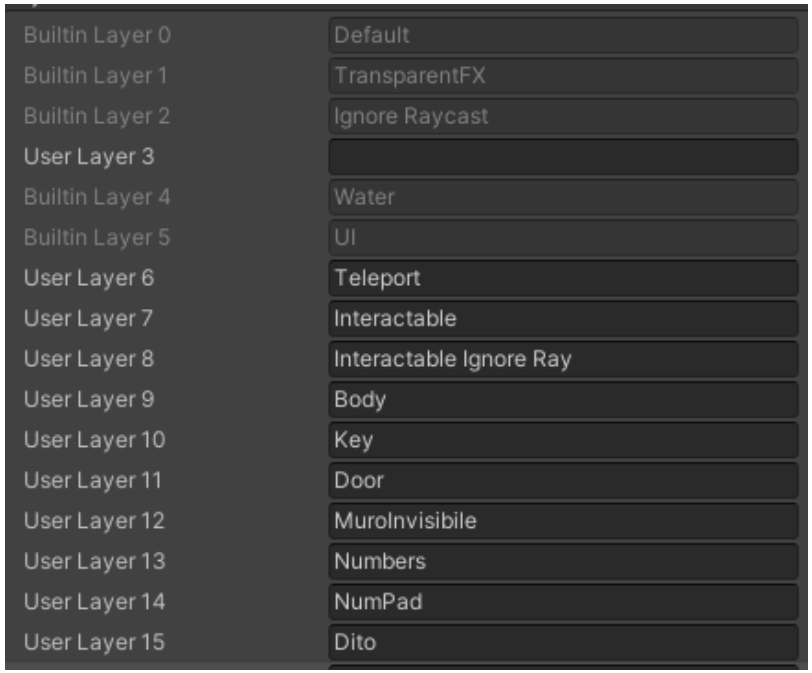


Figure: Project Layers

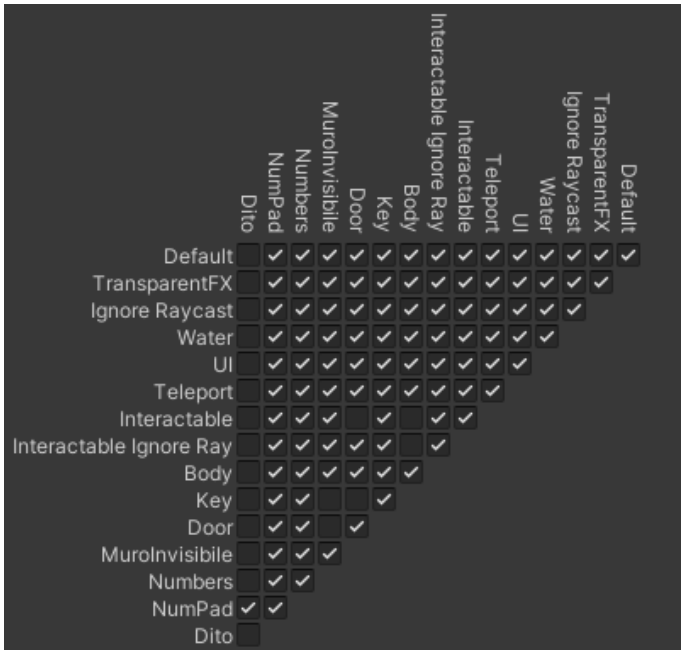
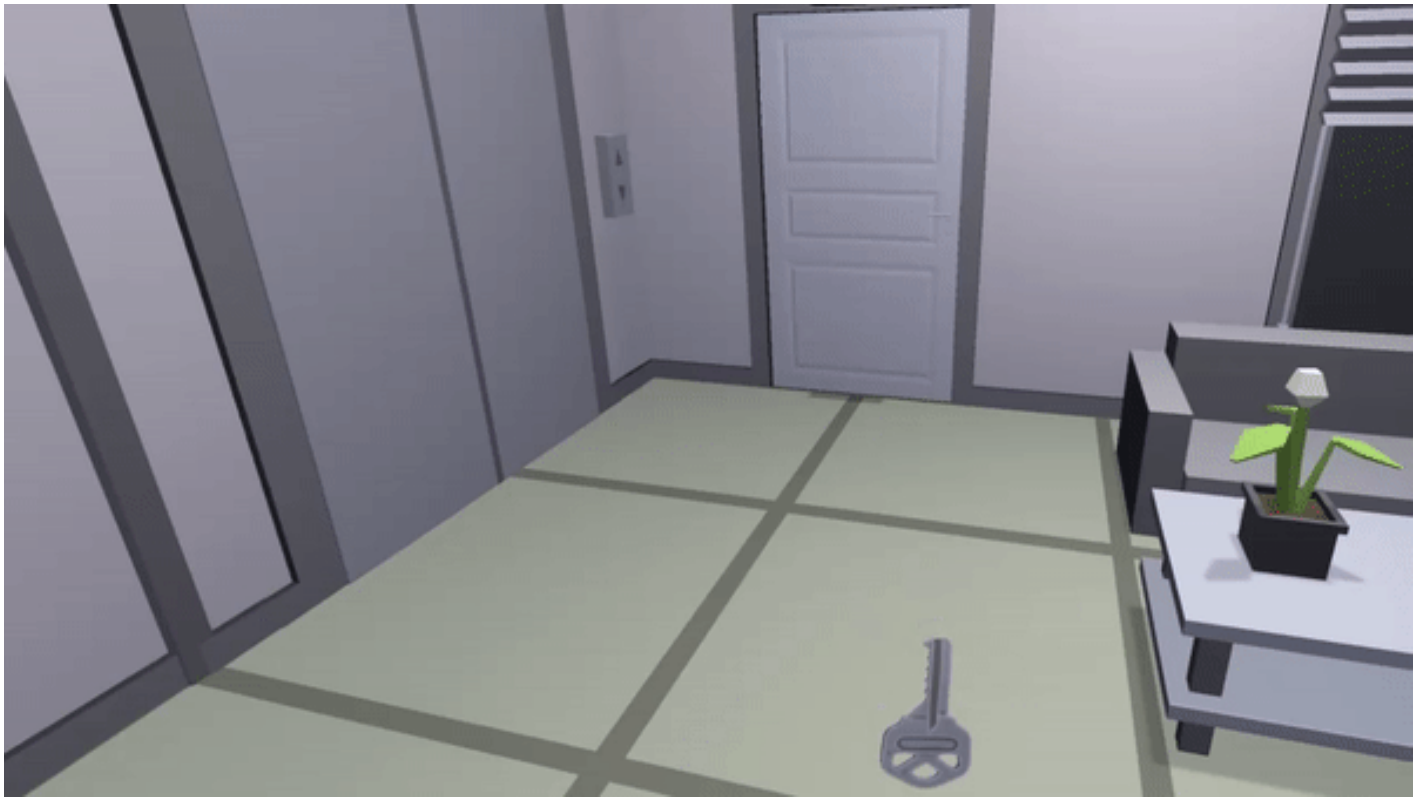
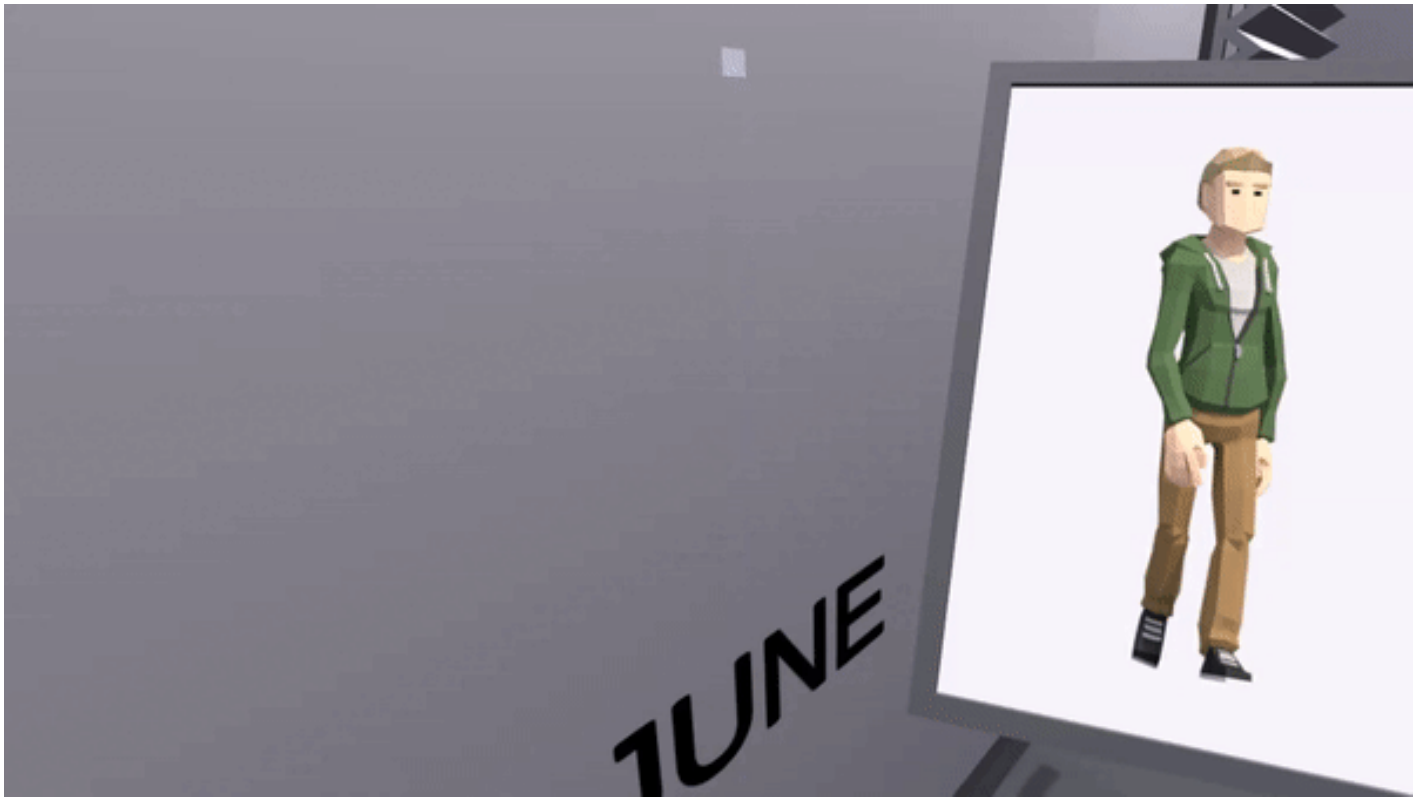


Figure: Physic Interaction Matrix

Discrete VS Continous Dynamic Collision



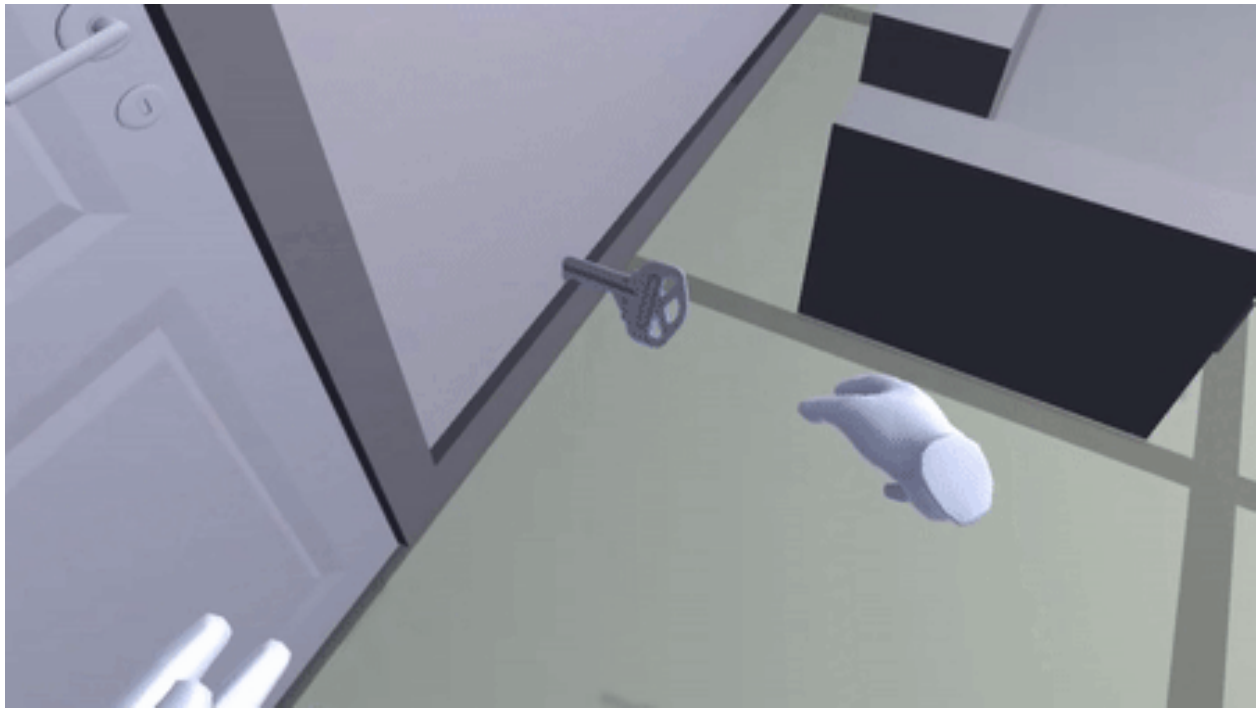
Socket Interactors



Interpolation

Spherical Linear Interpolation

```
while (timeElapsed < duration)
{
    transform.eulerAngles = Vector3.Slerp(transform.rotation.eulerAngles, to, Time.deltaTime);
    timeElapsed += Time.deltaTime;
    yield return null;
}
```



Animate objects

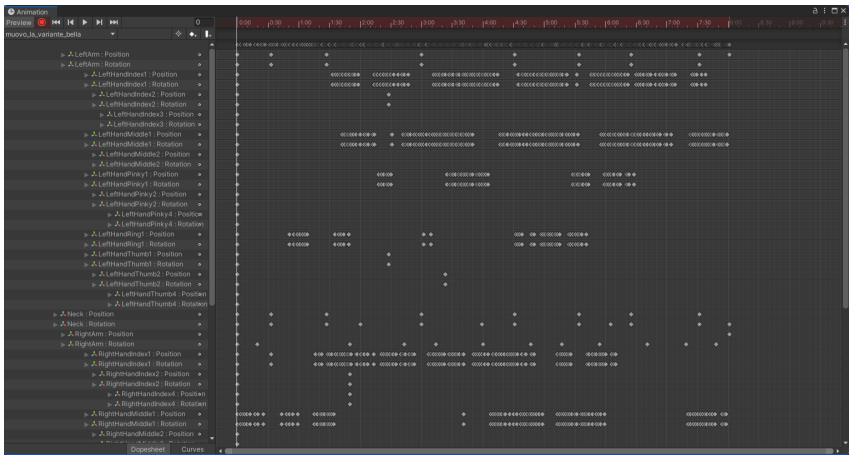


Figure: Matthew's animation

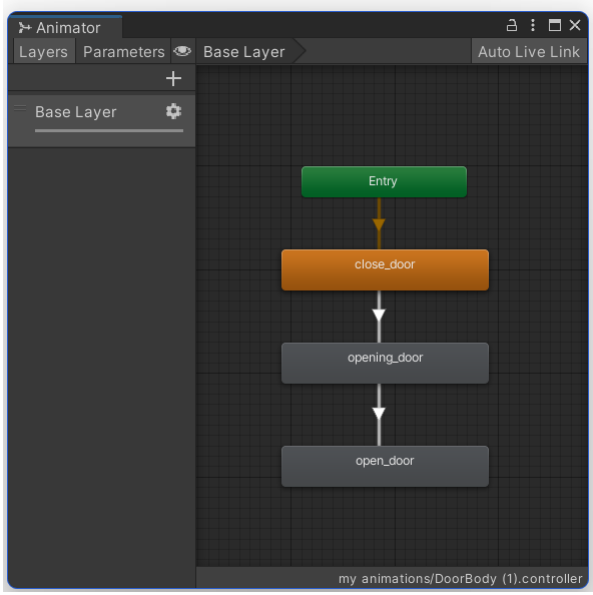


Figure: Exit Door Animator

Animate objects

Animation VS Interaction

Figure: Interactable Door

Figure: Animated Door

Triggering Events

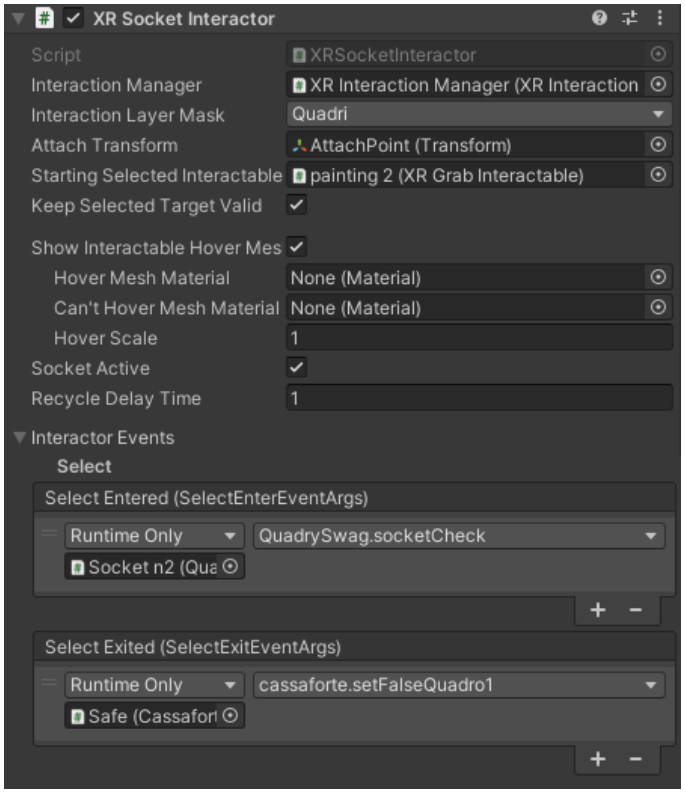


Figure: Using Default Interactor Events

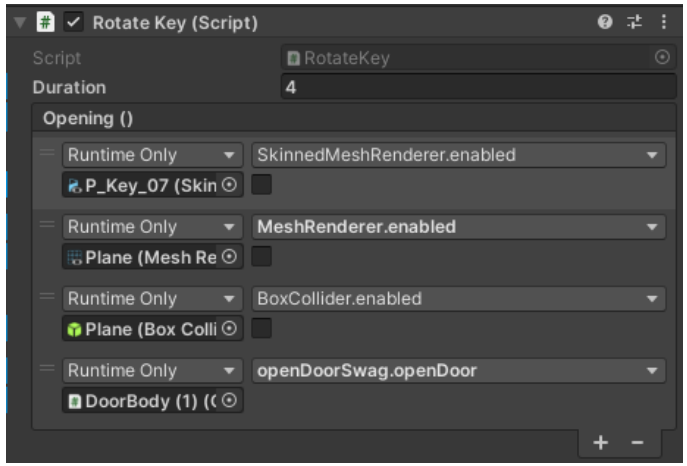


Figure: Creating New Events

Example: Numpad Script

```
public UnityEvent OpenDoor;

private void OnTriggerEnter(Collider other)
{
    if (!pressed && !opened)
    {
        pressed = true;
        currentEntry += thisKey;
        if (currentEntry.Length > 2)
        {
            if (currentEntry == correctCode)
            {
                audioSource.PlayOneShot(successSound);
                updateVisual("OPEN");
                disableKeypad();
                opened = true;
                OpenDoor.Invoke();
            }
            else
            {
                currentEntry = "";
                audioSource.PlayOneShot(errorSound);
                updateVisual("ERROR");
                Invoke("resetVisual", 0.5f);
            }
        }
        else
        {
            updateVisual(currentEntry == "" ? "***" : currentEntry);
            audioSource.PlayOneShot(ketHit);
        }
    }
}
```

Sound Effects

```
void OnTriggerEnter(Collider other)
{
    if (other.tag == "Player")
    {
        pressed = true;
        audioSource.PlayOneShot(cafeSound);
    }
}
```

Figure: C# script audio trigger

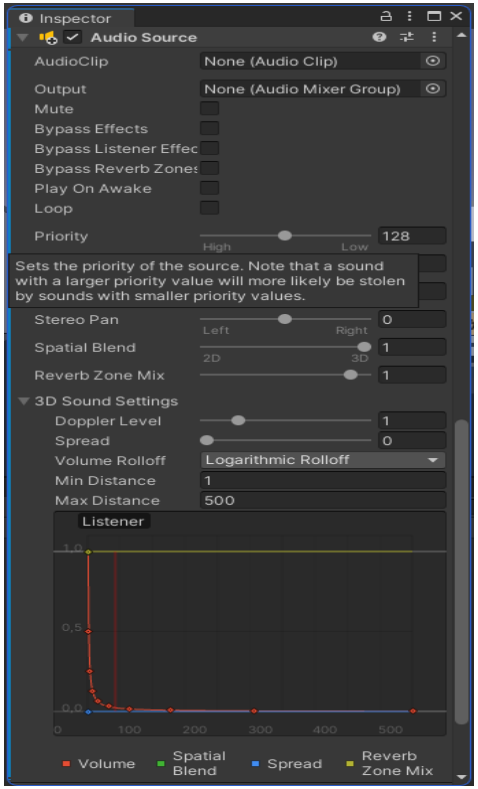
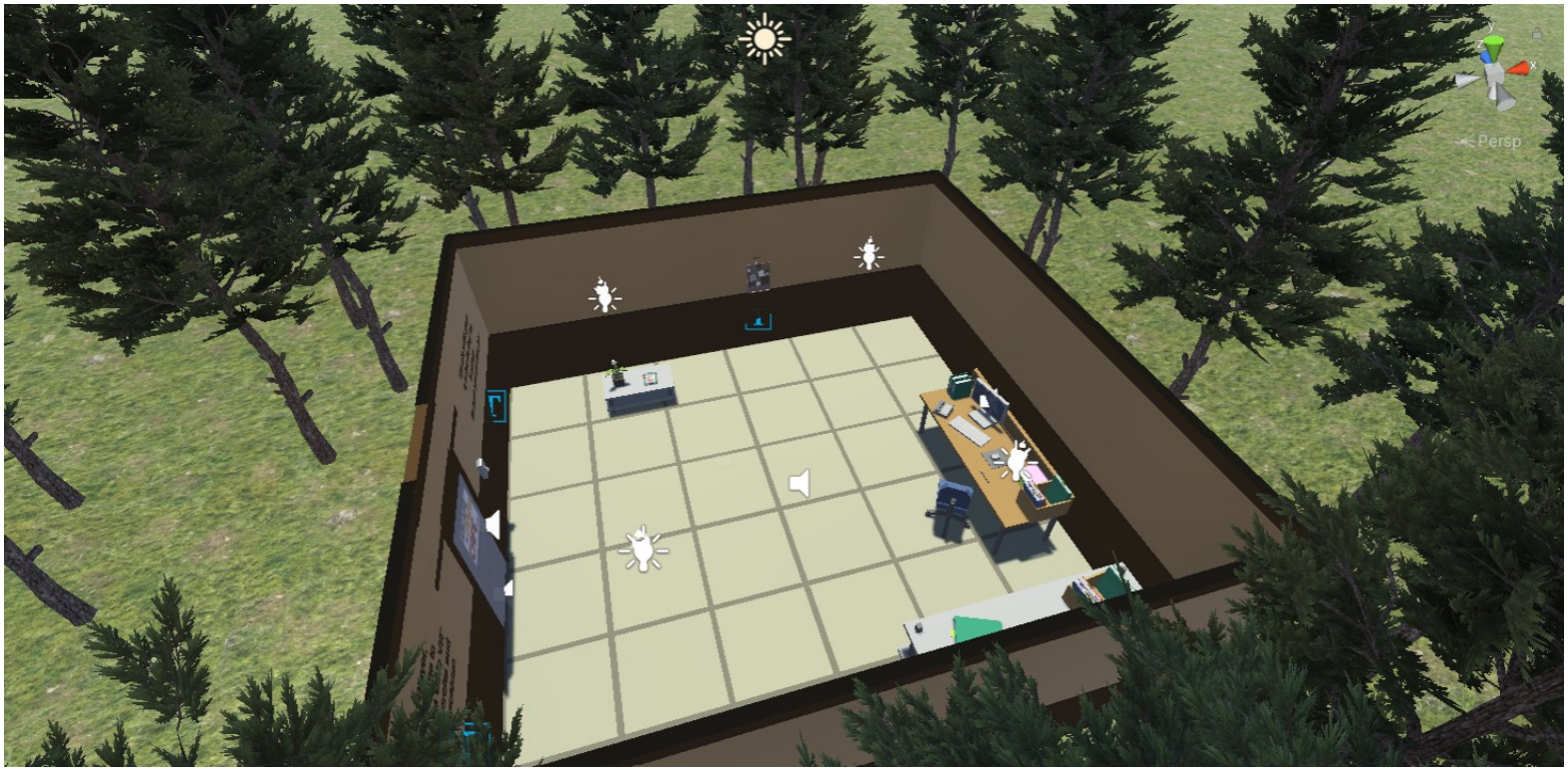


Figure: Audio Source Inspector

Office Lightning

Tutorial Lightning



UV Flashlight

Youtube Channel

Conclusive Observations

Developing a video game was harder than we believed. Simple tasks such as triggering events and interact with objects can be cumbersome but Unity Documentation and online tutorials helps so much. However this project taught us some 3D and VR game developing skills.

Future Work

- Create new levels with some trickier puzzles
- Add Game Menu with an option to change the locomotion type
- Add achievements for speed runners

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ESCAPE
THE CAMERA
CAFE
VR