**Unity Scene**

The scene we have set up is an executive’s office, a breakroom and a bathroom. It has multiple objects such as a table, chair, book shelves, a television, eyeglasses etc.

The name of the scene file is homework1.unity

To run the scene, simply open the project folder 3D Virtual Environment as a Unity Project. Allow all imports and click on play.

**TRAVEL**

We have five states of travel in the application.

1. **Not Steering**

This is the idle state, when not in any other of the defined states, the user is in this state.

1. **Forward**

The user moves forward, y value on the tracker is positive and the touchpad on the right hand is pressed. The user moves in the direction that the controller is pointing.

1. **Backward**

The user moves forward, y value on the tracker is negative and the touchpad on the right hand is pressed. The user moves in the direction that the controller is pointing.

1. **Hop**

The user presses the trigger on the right controller in an NOT STEERING state. Hops in place.

1. **Teleport**

When the user presses the trigger on the left controller in the NOT STEERING state, the application detects the user’s location and moves the user from OFFICE -> BREAKROOM -> BATHROOM. For example, if the application detects the user in the breakroom, it would take him to the bathroom.

***SOUNDS***

We have six sounds in our 3D Virtual Environment. They come from the following objects. Their distances have been adjusted so there is least interference. Following is a small overview of the various objects that produce sounds and when and how they appear in the environment:

1. **Office objects** 
   1. ***Object 1 - Laptop***

Laptop has a sound of a skype call which starts with a delay of 5 seconds**.** Its maximum volume can be heard up to 2 meters and gradually decreases until 3 meters where it can no longer be heard.

* 1. ***Object 2 - Clock***

Clock has a ticking sound which runs continuously in a loop. It runs in a loop and its maximum volume can be heard up to 1 meter and gradually decreases until 2 meters where it can no longer be heard.

* 1. ***Object 3 - Mobile***

The mobile phone has a typical ringing sound which runs once for about half a minute. It starts with a delay of 20 seconds. Its maximum volume can be heard up to 2 meters and gradually decreases until 3 meters where it can no longer be heard.

1. **Break Room** 
   1. ***Object 4 - Refrigerator***

The refrigerator noise is the one that is made by the compressor’s fan. It runs in a loop and its maximum volume can be heard up to 1 meters and gradually

decreases until 3 meters where it can no longer be heard.

1. **Bathroom** 
   1. ***Object 5 - Toilet***

The toilet sound is the sound for a flush. It starts with a delay of 10 seconds. It runs in a loop and its maximum volume can be heard up to 1 meter and gradually decreases until 2.5 meter where it can no longer be heard.

* 1. ***Object 6 - Sink***

The sound coming from the sink of water dripping from the faucet. It starts with a delay of 5 seconds. It runs in a loop and its maximum volume can be heard up to 0.75 meters and gradually decreases until 2 meters where it can no longer be heard.