AUDIO AND HAPTICS

ADD HAPTIC FEEDBACK:

You can add haptic on hover enter and select enter to provide physical feedback to the player's hands.

1. **Edit both controller objects at the same time:**

    - **In the Hierarchy, expand XR Rig > Camera Offset.**
    - **Ctrl/Cmd+select both the RightHand Controller and LeftHand Controller so they are both selected.**

2. **Locate the haptic events:**

    - **At the bottom of the Controller objects' XR Ray Interactor components, expand the Haptic Events fold-out.**

3. **Create subtle haptic feedback when the user hovers over an object:**

    - **Click the On Hover Entered check box to enable it.**
    - **Set the Intensity to a low value (e.g. 0.1-0.5).**
    - **Set the Duration to a very low value (e.g. 0.1 seconds).**

4. **Create more noticeable feedback when the user grabs an object:**

    - **Select the On Select Entered check box.**
    - **Set the Intensity and Duration values to slightly higher values (e.g. 0.25 seconds).**

ADD AUDIO FEEDBACK:

Now that you have haptic feedback, you can enhance the User Experience (UX) with audio feedback.

1. **Select the sound you want to use:**

   - **From the Course Library > Audio > FX, determine which subtle UI sound effect you want for the hover or select event.**
   - **To preview the sound, you may need to drag up the Preview panel from the bottom of the Inspector window.**

2. **Apply this sound effect to both controllers:**

   - **From the Hierarchy, select both the RightHand Controller and LeftHand Controller objects.**
   - **In the XR Ray Interactor component, expand the Audio Events fold-out.**
   - **Click to enable either the On Select Entered or the On Hover Entered setting.**
   - **and then assign your chosen sound effect.**

ADD 3D AUDIO FOR FIREPLACE:

In addition to audio feedback on events, you can add 3D spatial audio into the scene emanating from the fireplace to increase immersion.

1. **Give the fire a sound effect:**

   - **Add an Audio Source component to the particle object.**
   - **For the AudioClip property, assign the SFX_Loop_Fire sound effect from the Course Library > Audio > FX folder.**

2. **Make the sound play automatically and loop:**

    - **In the Audio Source component, make sure both the Play on Awake and Loop settings are enabled.**

3. **Configure this component as a 3D sound:**

    - **Adjust the Spatial Blend property by dragging the slider all the way to the right 3D setting (or by setting the slider to 1).**

4. **Edit the overall volume and volume roll-off of the fireplace:**

    - **Edit the Volume property.**
    - **Expand the 3D Sound Settings fold-out, then adjust the Min Distance and Max Distance values.**

The fireplace should now make a crackling sound, which should change in volume and left/right balance depending on where you are located and oriented in the scene.

ADD A REVERB ZONE:

To maintain a sense of presence in VR, it's especially important to make sure audio behaves the way it would in the real world. This includes considering how sounds might reverberate around different kinds of rooms.

1. **Add a new Audio Reverb Zone as a child of the Room object:**

- **In the Hierarchy, right-click the Room_[style] object.**
- **Click Audio > Audio Reverb Zone.**

2. **Make sure the reverb zone encompasses your whole room:**

    - **In the Audio Reverb Zone component, make sure the Min Distance property is set to at least the width of your room (10).**

3. **Make your reverb zone match your room:**

    - **Use the Reverb Presets drop-down to experiment with different styles of reverb.**
    - **Select a setting that matches your room (Room or Living Room).**

You should now have a reverb zone set up in your room to make the 3D sound even more realistic.