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Title of Experiment: Installation of Unity, setting up Unity for VR development, understanding documentation of the same.

Objective of Experiment: The Objective is to install Unity, configure it for VR development, and master Unity's VR documentation.

Outcome of Experiment: Thus, we installed Unity, did setup for VR Development, and understood the documentation of the same.

Problem Statement: Many aspiring VR developers struggle with setting up Unity for VR and comprehending its documentation. This experiment aims to simplify these initial challenges, making VR development more accessible.

Description / Theory:

What is Unity?

Unity is a powerful and widely-used game development platform that allows developers to create interactive 2D, 3D, augmented reality (AR), and virtual reality (VR) experiences across various platforms.

- Unity is a game engine and development environment that provides a wide range of tools and features for building games, simulations, interactive experiences, and more.
- It supports multiple platforms, including Windows, macOS, Android, iOS, console platforms like PlayStation and Xbox, and VR / AR platforms like Oculus, HTC Vive, and Microsoft HoloLens.
- Unity uses a component-based system for building scenes and objects, making it accessible to both programmers and artists.

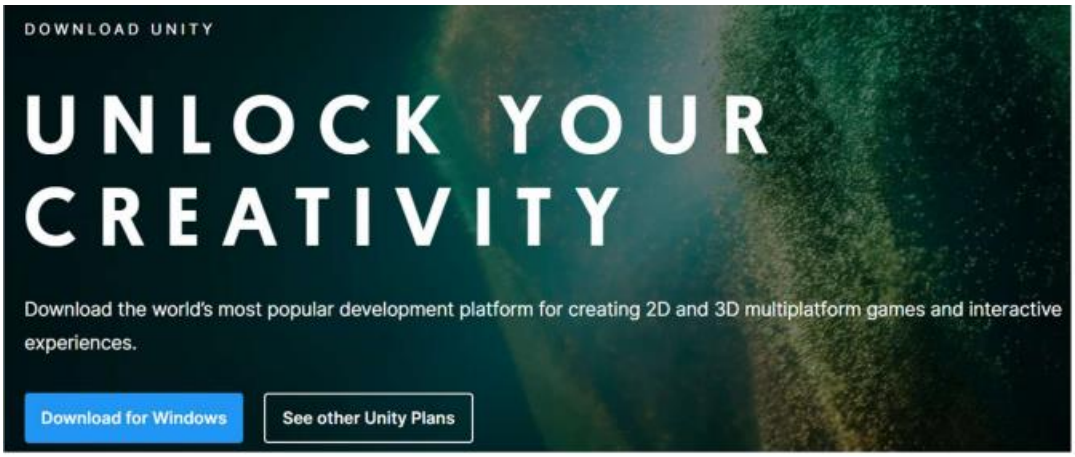
- It offers a visual editor that allows you to design and manipulate game elements, scenes, and assets, reducing the need for extensive coding.

Unity For VR:

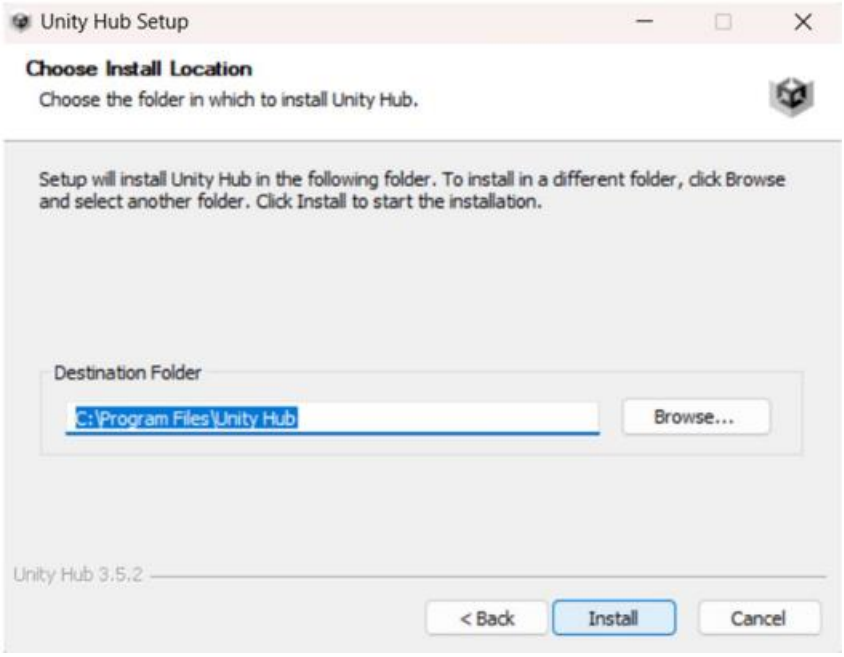
- Unity has become a popular choice for creating virtual reality experiences due to its versatility and compatibility with various VR hardware.
- Key components for VR development in Unity include the integration of VR SDKs (Software Development Kits) such as Oculus, SteamVR, and Windows Mixed Reality.
- Unity provides a dedicated VR development toolkit called the Unity XR Interaction Toolkit, which simplifies the creation of VR interactions and controllers.
- VR development in Unity involves creating immersive 3D environments and experiences that respond to head and hand movements, allowing users to feel like they are inside the virtual world.
- Unity supports both room – scale and seated VR experiences, making it suitable for a wide range of VR applications, from games to training simulations, architectural visualization, and more.

Output:

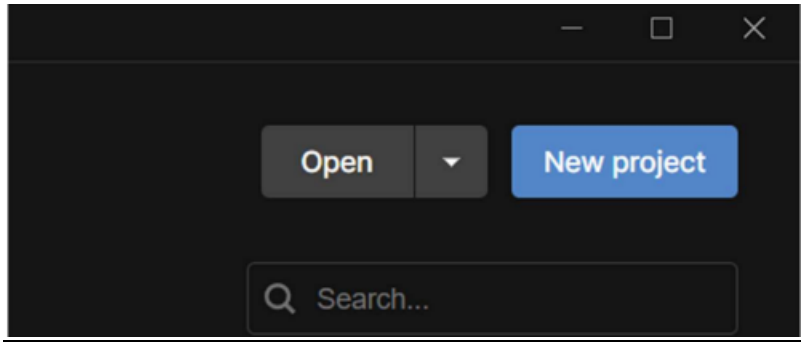
1. Download Unity:



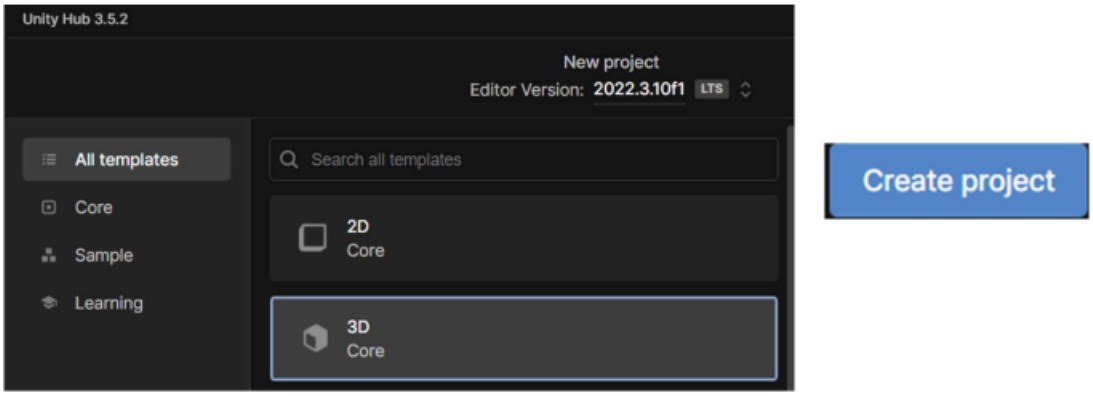
2. Click on Downloaded .exe file and follow all default options:



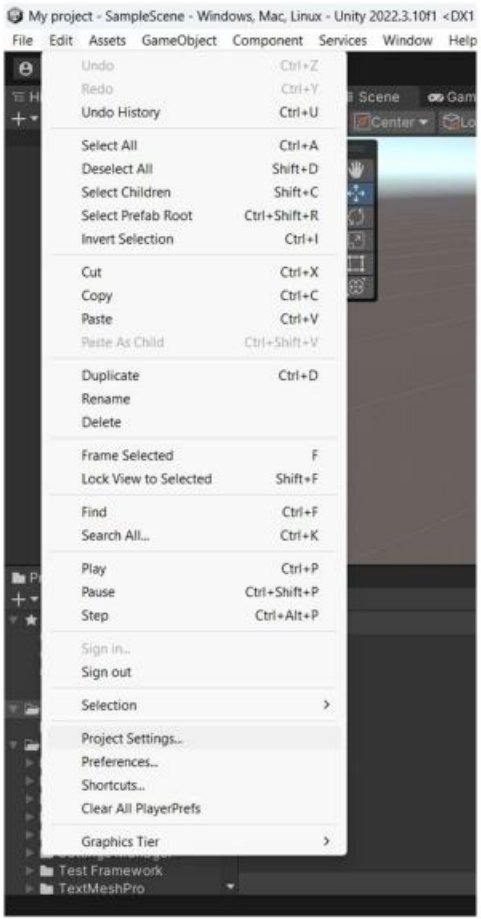
3. Open Unity Hub. Click on **"New Project"**



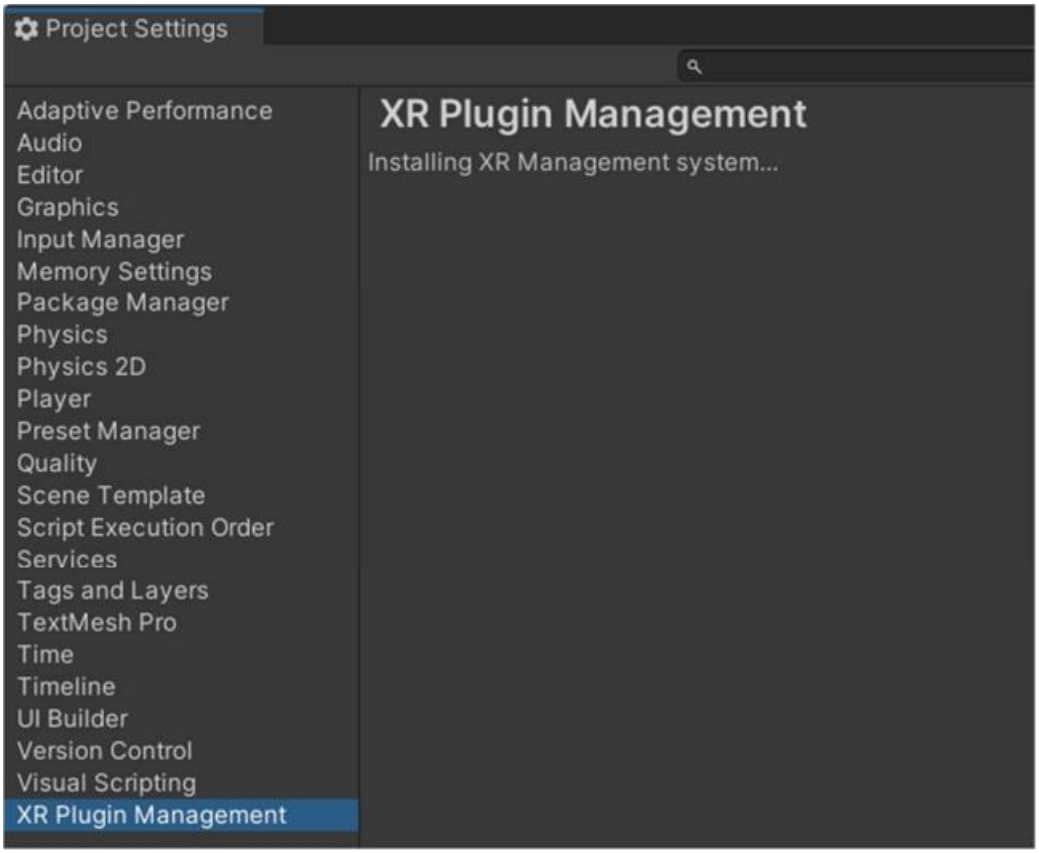
4. Select & Click on Create Project



5. Go to Edit then to Project Settings

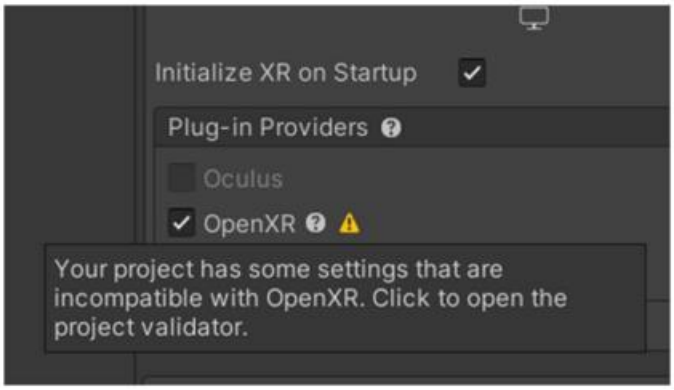


6. Go To XR Plugin Management and Click On **"Install XR Plugin Management"**

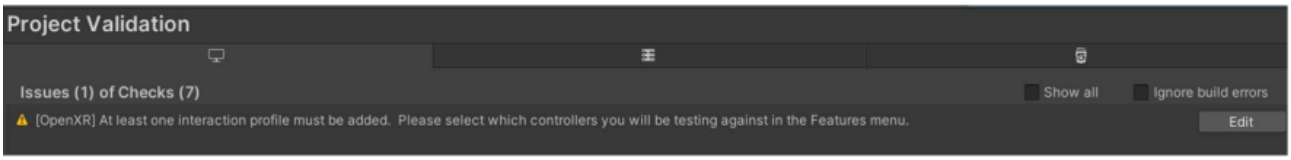


7. After That Select Open XR

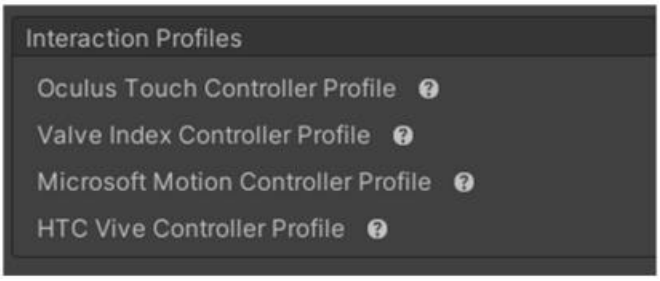
8. It will give a warning so click on Restart. Now, it will display the following:



9. Click on the Yellow Hazard Sign. Click On **"Edit"**

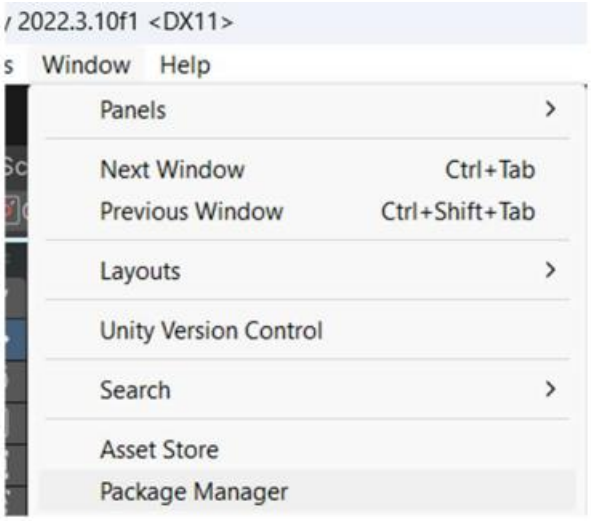


10. Add the Following Profiles

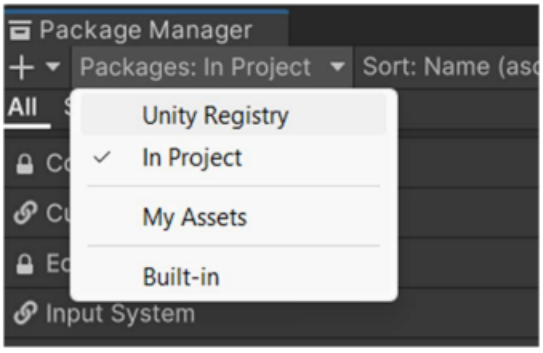


Note: Mac users Might Get Some Problems While doing these steps.

11. Now, Go to Windows → Package Manager

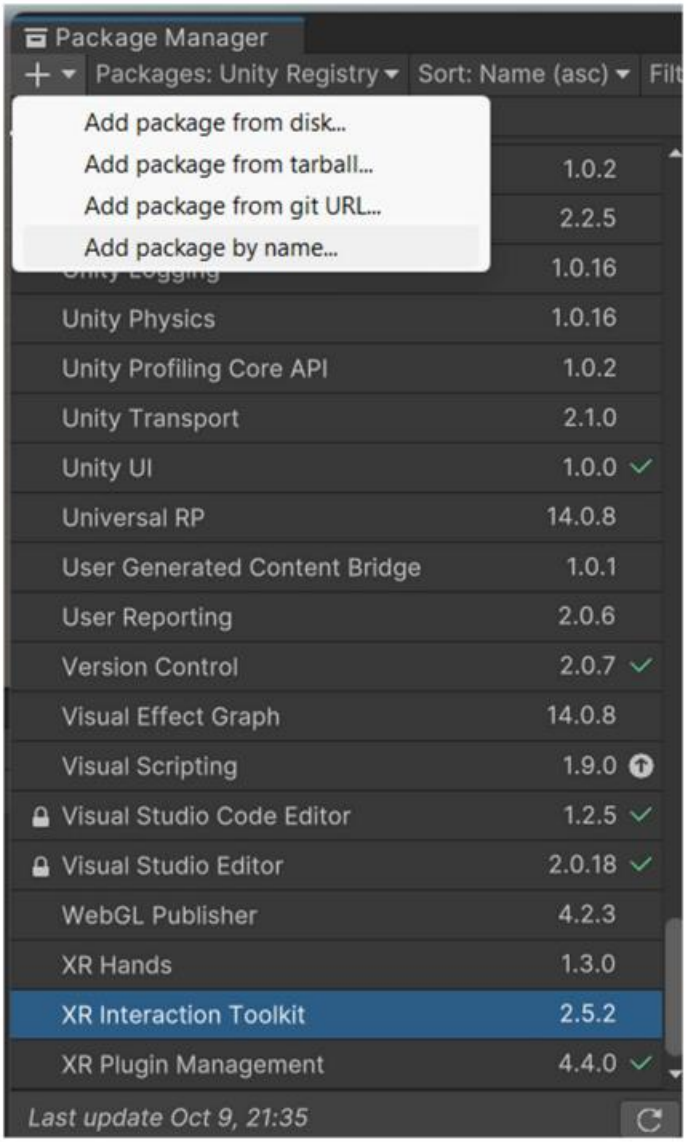


12. In Package Manager do this:

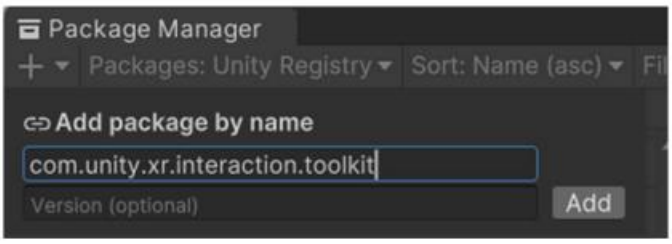


13. Look for this in Unity Registry:

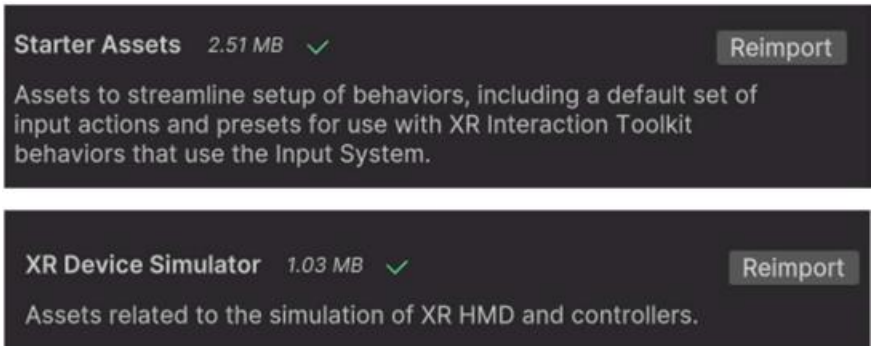
14.Go here:



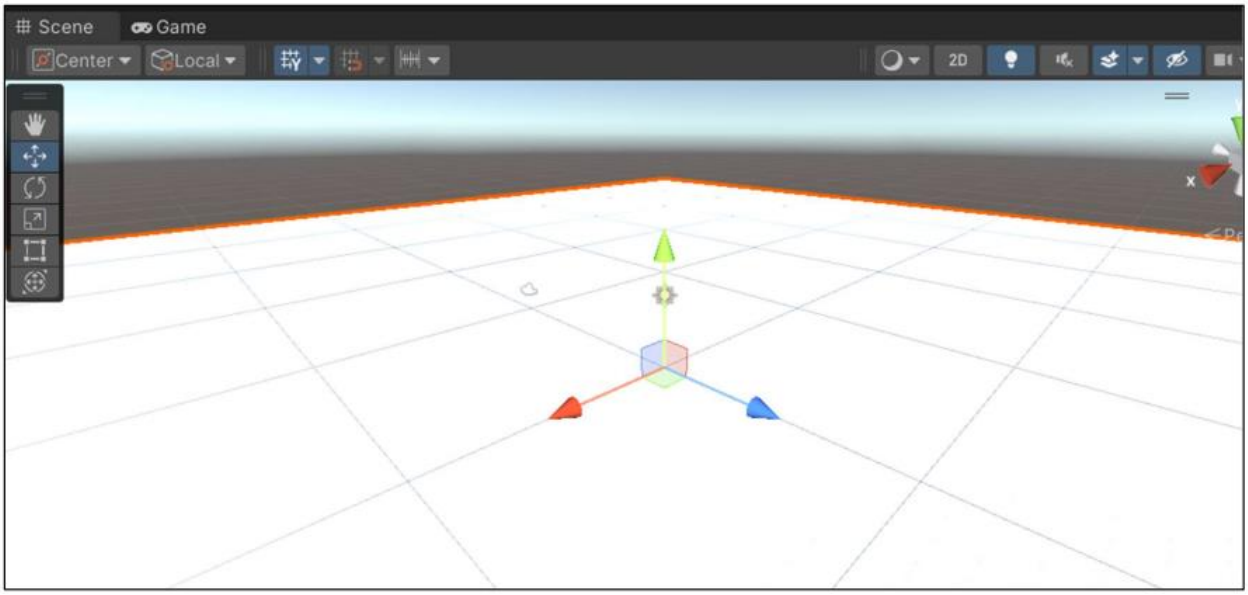
15.Type this and hit add.



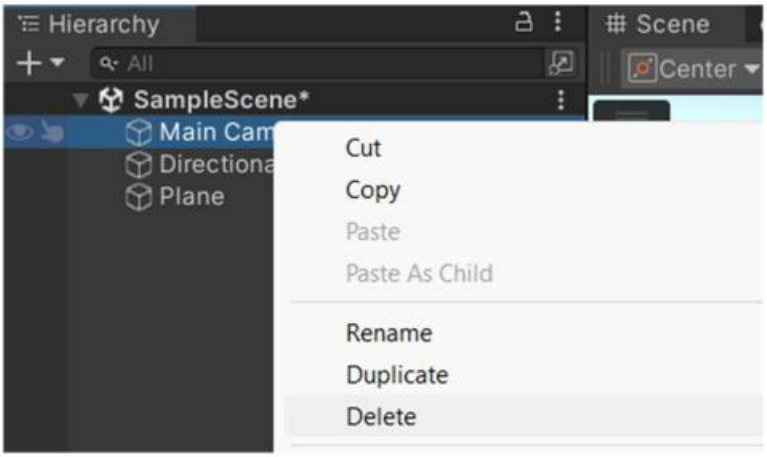
16. In XR Interaction Toolkit. Go to Samples and Import the following:



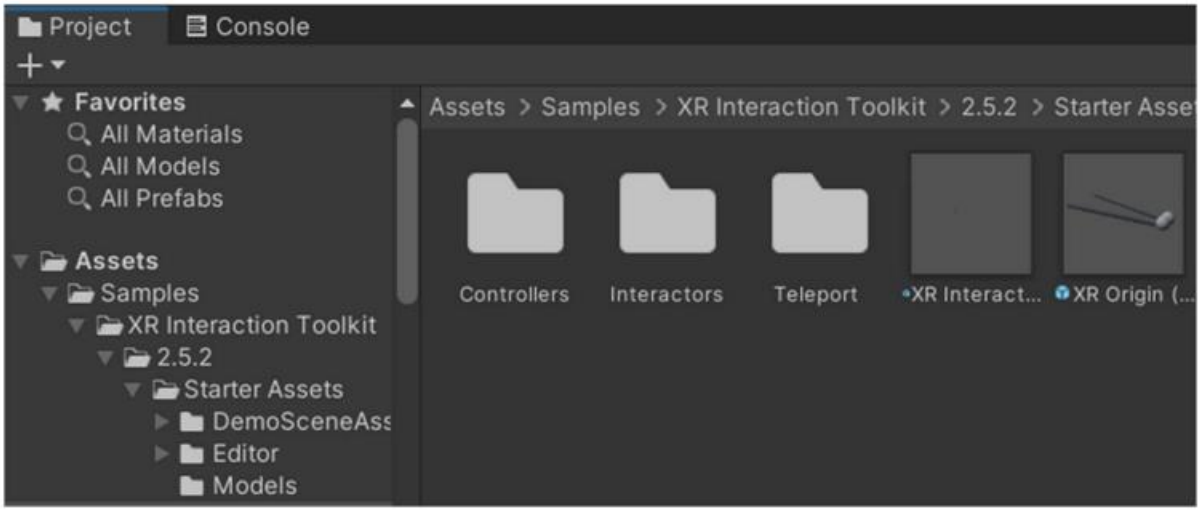
17. Ok Now the Setup Is Done.
    Right Click on Hierarchy → Click On 3D Object → Plane
    Scale it by setting X and Z to 10.



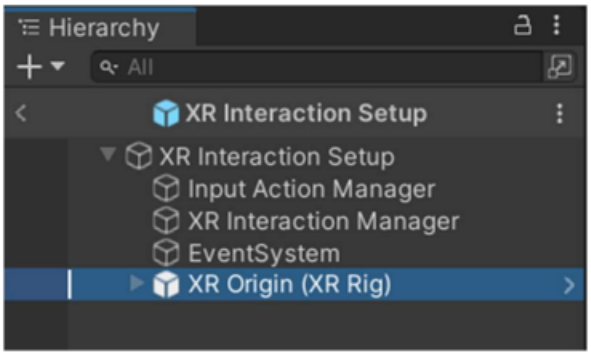
18. Delete Main Camera

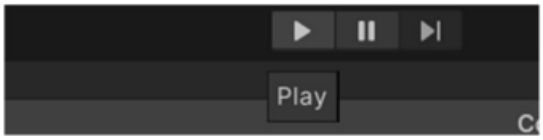


19. Then Goto Project → Assets → XR interaction Toolkit → your version → Starter assets
Then Goto Prefabs → Select any one file



20.Drag the Selected File to Hierarchy and click on Play Button





Results and Discussions:

- Development Setup: We successfully set up Unity for VR development, integrating Oculus, etc.
- XR Interaction Toolkit: Unity's XR Interaction Toolkit streamlined VR interaction development with pre-built components.
- Platform Compatibility: Our VR applications were compatible with Oculus Rift, HTC Vive, and Windows Mixed Reality.
- Unity's Versatility: Unity's flexibility and compatibility with various VR hardware make it a versatile choice for VR development.
- XR Interaction Toolkit: This toolkit simplified VR interaction development, ensuring a consistent user experience across platforms.
- Beyond Gaming: Unity – powered VR extends to training, architecture, education, and more. In summary, Unity's robust features, compatibility, and tools make it an excellent platform for diverse VR applications, and its adaptability is key as the VR landscape continues to advance.