

LAB #3

BUILDING A VR EXPERIENCE IN UNITY

By the end of this lab, you will be able to:

- Navigate the Unity editor to use common commands and tasks.
- View and move in Game View to see how your application is progressing.
- Add Game Objects to an existing Unity scene.
- Create a new Unity scene.
- Add a Google VR (Daydream) camera element to an existing camera in a Unity scene.

PART 1: GETTING FAMILIAR WITH UNITY

What is a game engine, and why choose one for building immersive content? The Unity 3D engine is just one of many tools for creating VR and AR content. The editor contains several components that make it a powerful choice in getting started with VR and AR development right away:

- A 3D editor for creating scenes and environments
- Component-based objects to create reusable assets in your application
- Built-in lighting, rendering, movement, and physics engines that provide underlying functionality for application elements
- Several scripting languages to choose from to write and control game
- An asset store for selling and purchasing pre-made components, including models, textures, materials, scripts, and more

Different VR manufacturers have their own ways of implementing the underlying functionality for their hardware with their software development kits (SDKs), but Unity (like several other major game engines) has also begun integrating support for VR development directly into their engine. We'll start with the Daydream Google VR SDK, which will let us use Unity to write an application for an iPhone or Android device.

PART 2: HANDS-ON EXERCISES

These exercises are designed to provide you with the following:

1. A guided tour of the features that are provided with Unity for developing 3D applications, particularly for mobile VR devices
2. An opportunity to explore and build your first scene in Unity using the Google VR SDK for mobile applications

EXERCISE 1: OBSERVE AND TAKE NOTES

The instructor will explain the core concepts of Unity and how to do different tasks using the editor. We will also cover the basics of adding objects to a scene and the different components that make up gameplay in an application. While the instructor demonstrates this in front of the group, use this time to observe and take notes about the process.

EXERCISE 2: BUILD YOUR OWN PLANET SCENE

Using the notes and steps outlined in *Lab 3 – Project Notes*, begin working on your own implementation of a scene that contains a skybox and a planet. This will eventually grow to be the main scene for your VR Space application.

PART 3: TAKE-HOME EXERCISES

These take-home exercises provide you with the opportunity to go more in-depth with building out a scene and environment in Unity using the built-in tools and the Asset Store.

TAKE-HOME EXERCISE #1: BUILDING OUT YOUR PLANETARY SCENE

Expand from today's lab by filling out the rest of your planetary system. You can do a system based off our own solar system, a fictional star system, or an entirely imaginary one that you create!

SUMMARY

In today's lab, we introduced the Unity editor and discussed how it can be used to build 3D application for VR. We started our first VR application using the Google VR SDK and learned about the different components that make up a scene within Unity. This lab also covered the basics of 3D graphics applications and the types of objects that you will use to create immersive environments for your applications.

FOR NEXT TIME

Bring your completed take-home exercises and be prepared to discuss the process you went through to complete them.