

# LAB #5

## INTRODUCTION TO C# AND SCRIPTING

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

- Add a script to an element in a Unity scene.
- Understand the basic elements of a game loop.
- Click on objects in your scene to show and hide UI elements.
- Use an Event System to handle scene interactions.
- Use the trigger pull on a mobile VR headset to start actions.

## PART 1: UNDERSTANDING C# AND GAME LOOPS

Unity's visual editor is excellent for being able to see the visual elements of your application and manage the layout of your environment. In today's lab, we will examine how to use the scripts that underlie those elements to control the behaviors of everything in the scene.

## PART 2: HANDS-ON EXERCISES

These exercises are designed to provide you with the following:

1. An overview of C# scripting in Unity, and how game loops function within an application.
2. The opportunity to write some of your own scripts to navigate between scenes and show/hide elements within your scenes.

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### EXERCISE 1: OBSERVE AND TAKE NOTES

The instructor will discuss C# scripting and provide an overview of Unity game loops. The instructor will then walk through several scripts and show how to add them to objects to create button click behaviors, and to interact with the objects in your scene. Finally, we will cover a basic script that gives a rotation animation to your planets. Use this time to observe the instructor's demonstration by reading along in the Lab 5 – Project Notes and take notes yourself.

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### EXERCISE 2: BUILD YOUR OWN USER INTERFACE

Using the notes and steps outlined in *Lab 5 – Project Notes*, add the scripts provided to implement the functionality above in your own project. If you were unable to complete the Lab 4 take home exercises, implement the scripts in the provided Week 5 sample project.

## PART 3: TAKE-HOME EXERCISES

These take-home exercises will help you practice what we've learned in today's lab by continuing to add user interface elements to your project.

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### TAKE-HOME EXERCISE #1: FINISH IN-LAB EXERCISES

Finish what you've started in today's lab by adding the show/hide scripts to the rest of the planets within your scene.

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### EXERCISE #2: ADD ANOTHER SCENE (OPTIONAL)

How would you change the scripts provided to allow you to add additional scenes for each planet? Explore what you can do with additional scenes by playing around with the scripts and the object behaviors.

## SUMMARY

In today's lab, we learned the basics of C# scripting in Unity to give objects in our scene different behaviors. We also learned about how to navigate between different scenes within Unity and add button behaviors that trigger actions when we click on different UI elements. Finally, we covered how to show and hide UI elements based on where the user looks and interacts within their headsets.

## FOR NEXT TIME

Bring your completed take-home exercises and be prepared to discuss the process you went through to complete them. If you are unable to complete the exercises, come to the next lab with the Lab 6 Project saved on your computer.