LAB #2

DESIGN CONSIDERATIONS AND STRATEGIES FOR AR AND VR

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

- Evaluate input options while planning a VR or AR application.
- Describe the different types of design in relation to VR and AR development.
- Create a rough sketch of an environment for a VR experience.
- Decide on an appropriate platform for an application idea based on the requirements of the experience and how the target audience will engage with it.
- Decide on a strategy for user input and interactions within your application.

PART 1: DESIGN CONSIDERATIONS FOR VR

At this stage of the VR game, just saying the words "Virtual reality headset" can conjure up a variety of different options for different people. Designing across mobile VR carries a unique set of challenges in and of itself, and different functionalities that are provided for different phones can leave users stranded in content that doesn't adapt to multiple types of devices or input. When you consider the different options for desktop devices, that pool grows even more!

In today's lab, we're going to walk through the different design considerations that come into play with different VR devices, and cover a general overview of what does and doesn't work well in immersive environments.

We'll start by covering design considerations for desktop and mobile VR headsets, and then move into a series of hands-on exercises that let us take a large problem statement, scope it to several features, design a sample scene using our physical environment, and analyze how the functionality and feature set of our idea would change based on the virtual reality platform that we chose.

PART 2: HANDS-ON EXERCISES

These exercises are designed to provide you with the following:

1. Feeling comfortable with your ability to analyze the pros and cons of different VR platforms, and begin understanding the different types of devices and how they affect design decisions based on whether you are building a mobile or desktop experience.
2. Being able to come up with multiple design options around controller, gaze, and gesture input, and which designs work better for different device options.
3. Becoming familiar with thinking about what scope works well in VR and what might not translate well across different platforms.

EXERCISE 1: ENVISIONING FROM IDEATION

Consider the following scenario:

> You have just been tasked to drive a new virtual reality project, but your manager isn't very familiar with the options out there and asks for an initial set of ideas around the following prompt:
>
> *Build a virtual reality application that teaches middle school students about outer space.*

With a partner or in a small group, consider how you would design this application—it's intended to be open-ended. Think about the platform that you think is most appropriate for creating the experience, and why. Brainstorm several potential approaches to the type of application that you could build, and choose your favorite. Decide on 2–3 features that your app would include.

Choose a scribe to capture your ideas and a presenter to present for your group.

EXERCISE 2: DESIGNING YOUR VR EXPERIENCE USING PHYSICAL WIREFRAMES

From the prompt above, choose a potential "scene" that you can create. Get into a group of 3-5 people—you'll be designing an interface for it, all without touching a computer!

Decide on the following roles:

- Designer: One person. The designer will be blindfolded and is responsible for coming up with the layout for their scene.
- Sketch artist: One person. The sketch artist will sketch the idea on a sheet of paper as the designer describes it.
- Labelers: One-two people. Labelers should place sticky notes with the descriptions of what the designer says in the physical environment.
- Additional roles: These include someone to document the process with photos and additional people sketching the scene

The Twist: Only the designer can speak during this exercise! After 5 minutes is up, we'll get back into a group and discuss the process and how the designs turned out

EXERCISE 3: PULLING IT ALL TOGETHER

Think about the scene that you designed around you, and discuss the following questions with a partner:

- How well would it translate into an actual virtual reality device?

- Which platform did you envision yourself using while you were designing the experience?
- Was it the same as the one that you had originally thought about in your first experience?
- How would you need to change your experience to adapt it to another platform?
- If you chose something like Cardboard, how could you change your feature set if you were to design it for an Oculus or HTC Headset?
- If you chose a desktop system, how would you redesign the functionality to work for Gear VR or Cardboard?

PART 3: TAKE-HOME EXERCISES

In the next lab, we will start looking at more detailed design considerations by learning about user interfaces in Unity with Google Cardboard. We will also discuss several other options for prototyping and designing in VR, and will work with a sample project.

However, if you are interested in building out your own virtual reality application based on an idea that you have, I encourage you to spend the next week repeating some of the exercises that we went through today to iterate on a particular idea and scope it to something that you could complete yourself. This will help you start to establish a feature list of things that you can begin to build as practice exercises as you are learning!

TAKE-HOME EXERCISE #1: CAPTURING YOUR DESIGNS

Consider how a design and development team might capture a physical wireframe activity such as the one that we did today. How would you share your learnings with someone else?

Using Exercise 2 from today as a starting point, iterate on your scene's designs and create two additional mockups in the format of your choosing. What are the pros and cons of the methods you choose?

SUMMARY

In this lab, we learned how to start scoping an idea from a vague problem statement, and brainstormed different options for approaching a problem. We went through the process of creating a physical wireframe of a scene to begin understanding how to design for a 3D environment, and learned how to critically consider features and functionality based on the platform you want to design or build for.

FOR NEXT TIME

Bring your completed take-home exercises and be prepared to discuss the process you went through to complete them. **Additionally, make sure that Unity is installed on your computer and you download a copy of the Week 3 Sample Project.**