**Achievements**

This is the list of all achievements you may complete for your Capstone project. They are divided into 3 categories: Fundamentals, Completeness, and Challenges. You will be required to complete 500 points in each of these categories. Some combinations of achievements will multiply your score, so keep in mind ways to combine these achievements into a complete experience.

**Fundamentals**

Complete 500 points in this category

1. Scale achievement (100 points)

Correctly use scale to make the user feel small or large relative to another object. If the user is supposed to be a giant, then the user should feel tall. If the user is supposed to be an ant, they should feel small. Or if they should feel about human height, then use another object to communicate a sense of scale disparity.

2. Animation achievement (100 points)

Create an animation, either via scripting or a tool like Mecanim, to bring your scene to life.

3. Lighting achievement (100 points)

Use a mix of baked and real-time lighting to add realistic shading to each scene.

4. Locomotion achievement (100 points)

Create a locomotion system that is appropriate to your experience. For example, if you are building a museum, waypoints might be appropriate. If you are building a climbing experience, then a grabbing and pulling mechanic would be appropriate.

5. Physics achievement (100 points)

Simulate Physics forces in your experience. For example, depending on your experience, you may want to simulate gravity.

6. Video Player achievement (100 points)

(2x if Lighting achievement is also completed)

Create a video (does not have to be 360) and play it at some point during your experience.

7. Empathy achievement (100 points)

Design an experience that helps others empathize with a different point of view. Some examples are bullying, effects on nature, or living with disabilities, to name a few.

**Completeness - Complete 500 points in this category**

1. Gamification achievement (250 points)

Make your experience fun by adding in a reward system. You can choose to gamify your experience by rewarding achievement, exploration, or competition.

2. Diegetic UI achievement (250 points)

Instead of adding a lot of text to your scenes, represent interface elements naturally so users intuitively find things for themselves. They should not be told what to do, they should easily figure out how to do it.

3. Alternative Storyline achievement (250 points)

At some point in your story / experience, give your user an option to choose between different storylines.

4. AI achievement (250 points)

Create some simple AI using a navigation system or an algorithm like Boids Flocking.

5. 3D Modeling achievement (250 points)

Create your own custom 3D model. This could be in a tool like Blender, Maya, or in a VR app like Tilt Brush or Medium.

6. Photogrammetry achievement (250 points)

Create your own custom model using Photogrammetry. This will involve taking several pictures of an object and then using a software to transform those pictures into a 3D model. There are plenty of PC or mobile apps that you can use to accomplish this.

Challenges

**Complete 500 points in this category**

1. Speech Recognition achievement (500 points)

Use the microphone for input and use Speech to Text solutions as means to cause events in your world.

2. User Testing achievement (250 points)

(2x if you completed 750 points in Completeness)

Complete at least 2 User Tests and show the notes in your video about what you learned from each test.

3. Compute Shader achievement (500 points)

Write your own Compute Shader and explain what it does in your video.

4. Multiplayer achievement (500 points)

Use a networking solution to allow 2 or more players to play with each other.

5. Mixed Reality Video achievement (500 points)

In your submission video, record your VR experience in mixed reality. Here is an example video. You will need a green screen and then will need to follow instructions online (there are several videos and write-ups on how to do this) in order to record your experience correctly and then composite the output together.

6. App Store achievement (1000 points)

Put your app on a store (Play Store for Android, App Store for iOS, Steam or Oculus for PC) and get 100 downloads. Show this number from analytics during your video.