

In Class:

- **January 18, 2022 9:12 - 9:54 (Ryan and Wesley):** For the first day of the learning module Ryan and Wesley worked on finishing their initial proposal and making sure that it was submitted. After that, Ryan loaded up Unity on his laptop and made sure that everything was loaded and saved properly. Ryan spent some time setting up the settings for the game. Wesley decided to expand on his knowledge of Unity and worked on finding some more links and resources to get a guide for creating a simple starter game.
- **January 19, 2022 9:12 - 9:54 (Ryan and Wesley):** On the second day of the learning module, Wesley & Ryan continued to work on the starter game that they had found a tutorial on. They ran into an issue with the code, which they found a “fix” for, but it left them confused and not sure if it really fixed or not. Either way, they learned the basics which is what is important. They continued onto another tutorial, which had them download a couple of assets as well as plugins, such as Vuforia, which is Unity’s leading software for AR development.
- **January 21, 2022 9:12 - 9:54 (Ryan and Wesley):** For the third day of the learning module, Ryan & Wesley worked on trying to get a starter app to run on the android phone, but ran into some issues with connectivity and upload. They played with some settings, found some videos but eventually they found a tutorial on youtube that showed them some settings they needed on the phone. When they began their upload, the bell rang and they had to stop the lengthy upload process midway through.
- **January 24, 2022 9:12 - 9:54 (Ryan and Wesley):** On this day, Wesley and Ryan got their first app to run! They got the phone to link with the computer and Unity at the same time using a tether. They managed to grid the floor to make a surface and then place down a capsule everytime that they tapped the screen. This started their process to make a Unity game. After this worked, they decided to try and make an app that would scan and recognize the face of a playing card being shown, and then change the face to a different card. Had to take a picture of their card and upload it, and it worked!
- **January 25, 2022 9:12 - 9:54 (Ryan and Wesley):** After the initial and quick success of the first couple of days, Wesley and Ryan hit a bit of a stand still where they were a little lost as to where to go with what they had learned. They spent some time talking with each other and Mr. Detrick and decided to try and pursue making a game similar to Pokemon Go called Streaks Go. They decided to take the same program they created with the card but instead create a system so whenever a room plaque is identified it would cover the plaque and display info such as the teacher’s name and the classes offered. They started by taking a picture of the plaque and uploading it to Unity, and sure enough, they had the 3D object in their scene fairly quickly.
- **January 26, 2022 9:12 - 9:54 (Ryan and Wesley):** Wesley and Ryan continued their program where they would detect the room plaque and create an object over it by creating a text box that would appear over the sign. They simply made a blue text with a white background that said “Mr. Detrick” and then listed the classes that were offered in this room. After that worked well,

they decided to focus on what their next step was. They went with the idea of creating random floating Streaks that you could tap on and collect to increase a score. To do this, Ryan and Wesley decided to make a HUD that was always displayed in the upper left corner of the screen, showing a simple scoreboard. After this was anchored, they decided they wanted to try and find a way to spawn these Streaks around the person holding the camera, rather than spawn them always in front of them, which was far easier to do.

- **January 27, 2022 9:12 - 9:54 (Ryan and Wesley):** Ryan brought in a 3D camera to try to use for the purpose of scanning the hallway and creating a simple map in Unity where we could select spawn locations for the Streaks and spawn them there. They set up the camera in the hallway, and took a few pictures and videos, and then tried to upload them to Unity. Unfortunately, they could not figure out how to actually get them uploaded properly, so they had to scrap the idea. They went back to what they had with the image detection and overlay, and decided to try and simply create objects that would spawn in relation to the player rather than in relation to the location. They had to watch some tutorials on how to do so.
- **January 28, 2022 9:12 - 9:54 (Ryan and Wesley):** For the first half of class, we discussed the Metaverse essay that was due, but once that concluded Ryan and Wesley moved on to following a new tutorial to try and get a closer emulation of Pokemon GO. They found some project files that was a pokemon in front of a camera, this way they could have something tangible in front of them that would stay with the camera, so when they create the streak it would float in front of the camera and be locked into place when selected, allowing the user to “collect” it. This strayed from the mechanical side of things that Ryan and Wesley were focusing on, and instead got closer to the actual game portion of the project.
- **January 31, 2022 9:12 - 9:54 (Ryan):** Ryan intended to carry on where he and Wesley left off, trying to get detection of the streak that pops up to work. First, he downloaded a 3D model of a streak, and added it to the image target. Then, he searched the internet to find a way to make the streak detectable by the camera. He was unsuccessful this class period.
- **February 1, 2022 9:12 - 9:54 (Ryan):** Ryan left off where he was last period, and attempted to create a script that would allow the camera to detect the streak object being looked at. Following a tutorial that had a similar concept, he wrote a script that would detect if the object was in view. The code did not work.
- **February 2, 2022 9:12 - 9:54 (Ryan):** Continuing on his frustration, Ryan decided to go back to the previous project they worked on, the capsule placing game, and tried to see how he could reverse that process and make it so the taps on the screen could be detected on the streak. This did not work, likely due to the difference in using the Vuforia engine whereas for the previous project it was not used.
- **February 3, 2022 9:12 - 9:54 (Ryan):** Ryan decided that since he was unable to make any progress, he would create a user interface with the score in the top left. He created a canvas object and wrote “Score : 0”. At first, this was not showing up, but after some adjusting he was able to see the text on the screen.
- **February 7, 2022 9:12 - 9:54 (Ryan and Wesley):** On the first day Wesley was back, the two decided to pick up where they left off and try to write a script for the scoreboard at least, since it was one of the last aspects they needed. They wrote a script to turn the static “0” in “Score: 0” into an int variable that they could then increase, which worked. They made a simple If `score<=10, score++` command to see if the scoreboard would update and display what they

needed. This required casting their new Int variable into a text variable calling it score.scoreText= "Score: " + int.score;. This last step left Ryan and Wesley VERY confused since it was not something either of them would have thought of, but seemed to work as a quick solution.

- **February 8, 2022 9:12 - 9:54 (Ryan and Wesley):** For their last day, they decided that they would fully send a final effort towards their project and create a way for the scoreboard to increase whenever an object collides with a long crosshair placed in the middle. Wesley discovered this method on vacation, where you create a long cube that looks like a simple square for the AR camera, but in reality is a very long solid object. They then took the 3D streak that would appear over the room sign and wanted to make a script that would take the collision between the two objects and increase the score. However, they both ran into the issue of figuring out how to call a variable from one script to another since there was no sharing of public variables between scripts. Instead, they had to call a script variable and then call the integer variable from their script variable, which was very confusing.

At Home:

- **February 6, 2022 7:20 - 9:20 (Wesley):** Once Wesley returned home from his vacation, he decided to get to work and try to recreate what they had been working on in class. He made as much return as he could using the links they had gathered, and then decided to try out some new methods for things such as collision. He tried some ray casting but could not figure out how it worked.
- **February 5, 2022 8:30 - 10:30 (Ryan):** Ryan spent his evening watching unity tutorials and reading vuforia forums for a way to implement a scoring system into the ar target system. He hoped to find information that was exactly what he was looking for, but unfortunately he had little success.

Makeup Work:

- **February 2nd, 2022 10:20 - 12:30 (Wesley):** While Wesley was away for vacation, he texted Ryan to see where the project was and what aspects needed to be done. Wesley scoured the internet for videos and websites that he could send to Ryan to aid where he was stuck. They got into tap detection / visual detection. Wesley found some videos on the topics, which included trying to raycast a collider to collide with an object being detected, but that required 4 new plugins that did not mesh well with our version of Unity.
- **February 4th, 2022 9:40 - 11:00 (Wesley):** Wesley decided to spend some more time watching some tutorials on AR altogether, mostly about functions and algorithms. Wesley watched an hour long video about how AR pipelines function, as well as some simple universal functions, like 3D object colliders.

Resources:

- [▶ Get Started with AR in Unity in 6 minutes!](#)
- [▶ How to create an Augmented Reality App](#)
- [▶ START MENU in Unity](#)
- [▶ Connect your Android to Unity - Unity Remote \[Tutorial\]\[C#\] - Unity tutorial 2019](#)
- [▶ How To MARKERLESS Augmented Reality App Tutorial for Beginners with Unity 3...](#)
- [▶ Unity tutorial: AR Indoor Navigation with Vuforia Engine - Workflow, data model & ...](#)
- [▶ Unity Mobile Game Tutorial: How to Make Pokemon Go / AR Video Game](#)
- [▶ Let's Make Pokemon Go Augmented Reality](#)
- [▶ Unity3D Recreating Pokemon Go : Part 2 / The Catch](#)
- [▶ Unity3D Recreating Pokemon Go : Part 3 / Storing The Pokemon](#)
- [▶ Unity3D Recreating Pokemon Go : Part 4 / The GPS System and Spawning Poke...](#)
- [▶ How to display score in AR \(Setup\) using Unity AR Foundation \(ARKit & ARCore\) ...](#)
- [▶ Points counter, HIGH SCORE and display UI in your game - Score points Unity tut...](#)
- [▶ { How to call a FUNCTION defined in ANOTHER SCRIPT in Unity } - Communicati...](#)
- [▶ How To Access Variables From Another Script In Unity](#)
- [▶ How to make a Video Game in Unity - COLLISION \(E05\)](#)