

Socket Golf

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Inspiration

- Rocket League - a multi-platform game where users play soccer with cars.
- Virtual Reality - a future wave of development.
- Wanted to develop a cheap, fun app, that is easy to use on multiple platforms.



Initial Goals

- ▶ 1. A fully working game running in google cardboard using some type of controller as our input device.
- ▶ 2. Multiplayer support so that two people with android phones could play against each other in real time or maybe turn based.
- ▶ 3. Leaderboards, achievements, etc. to make the app feel even more polished.

Dreams are not always realized



- ▶ Okay not quite that bad...
- ▶ We are working towards leaderboards and score saving, but currently it is not a feature of our game

Future Goals

- ▶ Add the ability to invite people to a match
- ▶ Adding power ups to the game
- ▶ Network lobby in VR
- ▶ Customization of characters

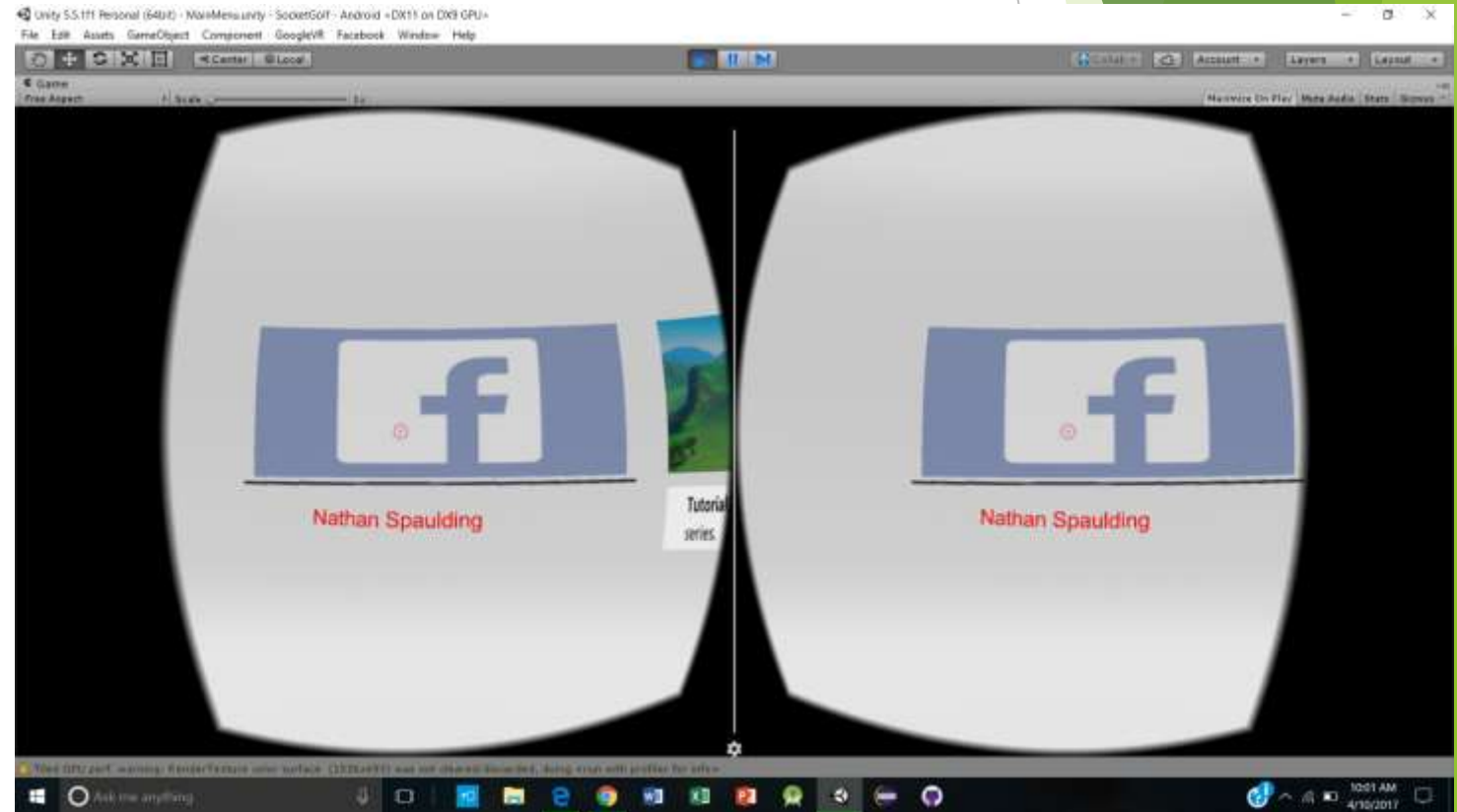
Products Used

- ▶ Unity
 - ▶ Encompasses multiplatform use. (Android, iOS)
 - ▶ Free development and networking.
- ▶ Blender
 - ▶ Trees
 - ▶ Golf Ball Hole
 - ▶ Fence
 - ▶ Bullseye
- ▶ FacebookAPI
 - ▶ Free to use



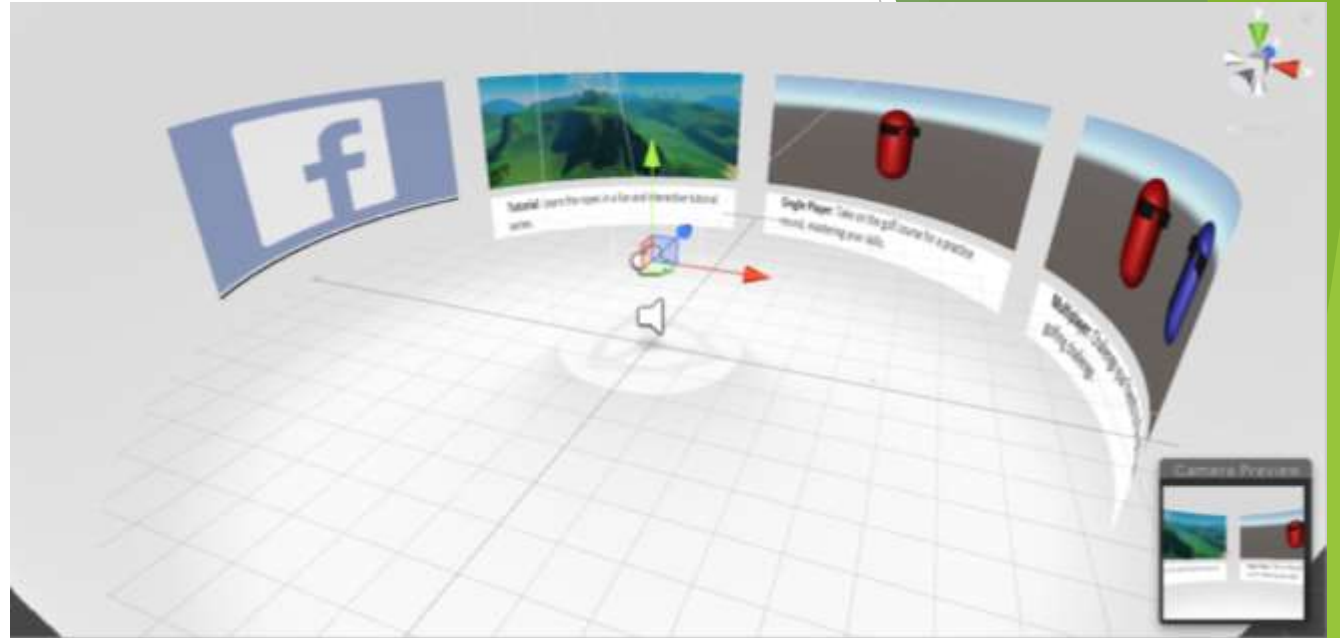
Facebook API

- ▶ Log in, communicate with UNET to give username
- ▶ Facebook Queries
- ▶ Singleton Class
- ▶ Cross Platform
- ▶ Problem
 - ▶ Must have the Facebook App installed and be logged in.
- ▶ Future Use:
 - ▶ Invitation to games
 - ▶ Leaderboards



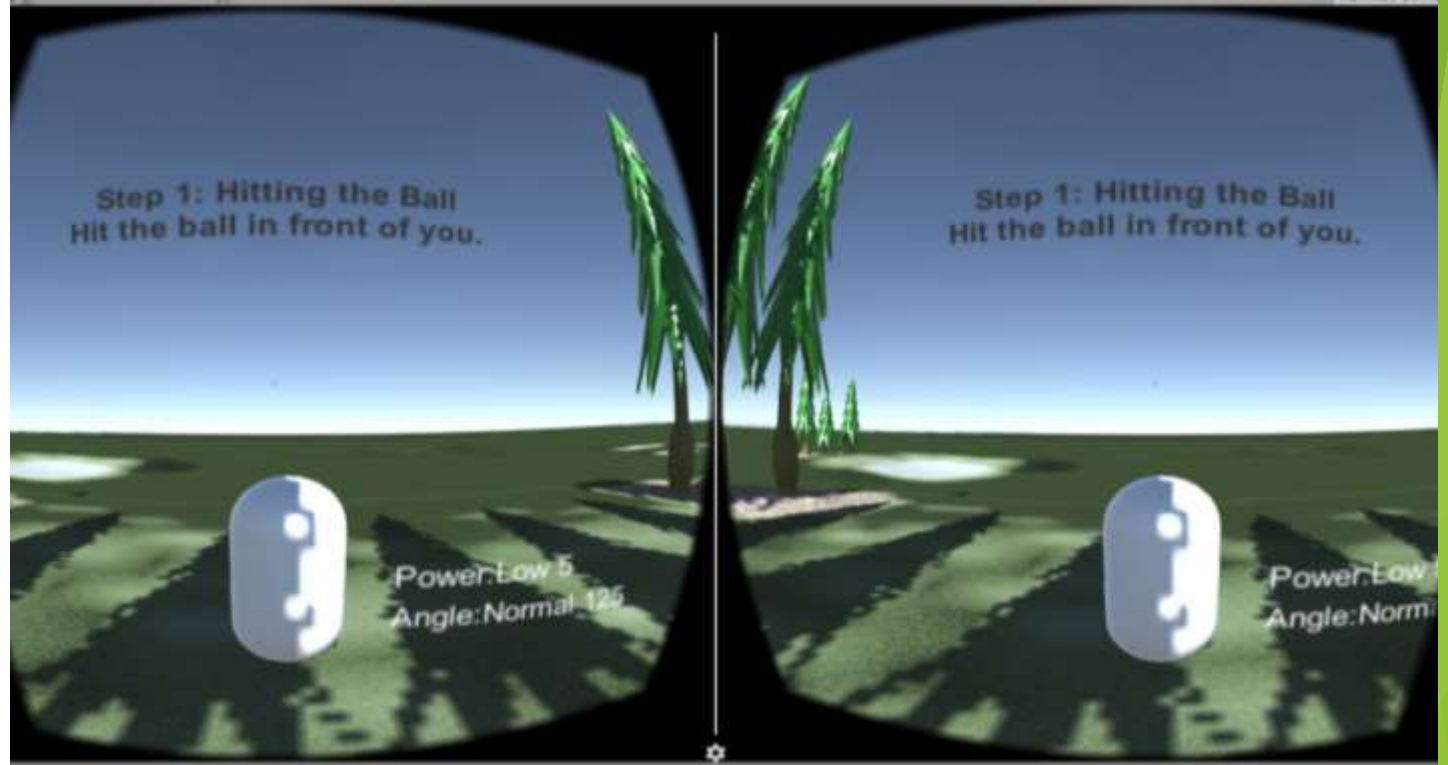
Main Menu

- ▶ Quick and easy navigation and interaction
- ▶ Rotating Items



Tutorial

- ▶ After the realization that this game is extremely difficult to play we created the tutorial scene.
- ▶ Series of steps showing how to use the controls.
- ▶ Problem
 - ▶ Finding a way to efficiently make a flowing tutorial.



Controls

LT/ RT
Change Kick Power

LB/ RB
Change Kick Angle

Top Down View

Left Side View

Right Side View

Move

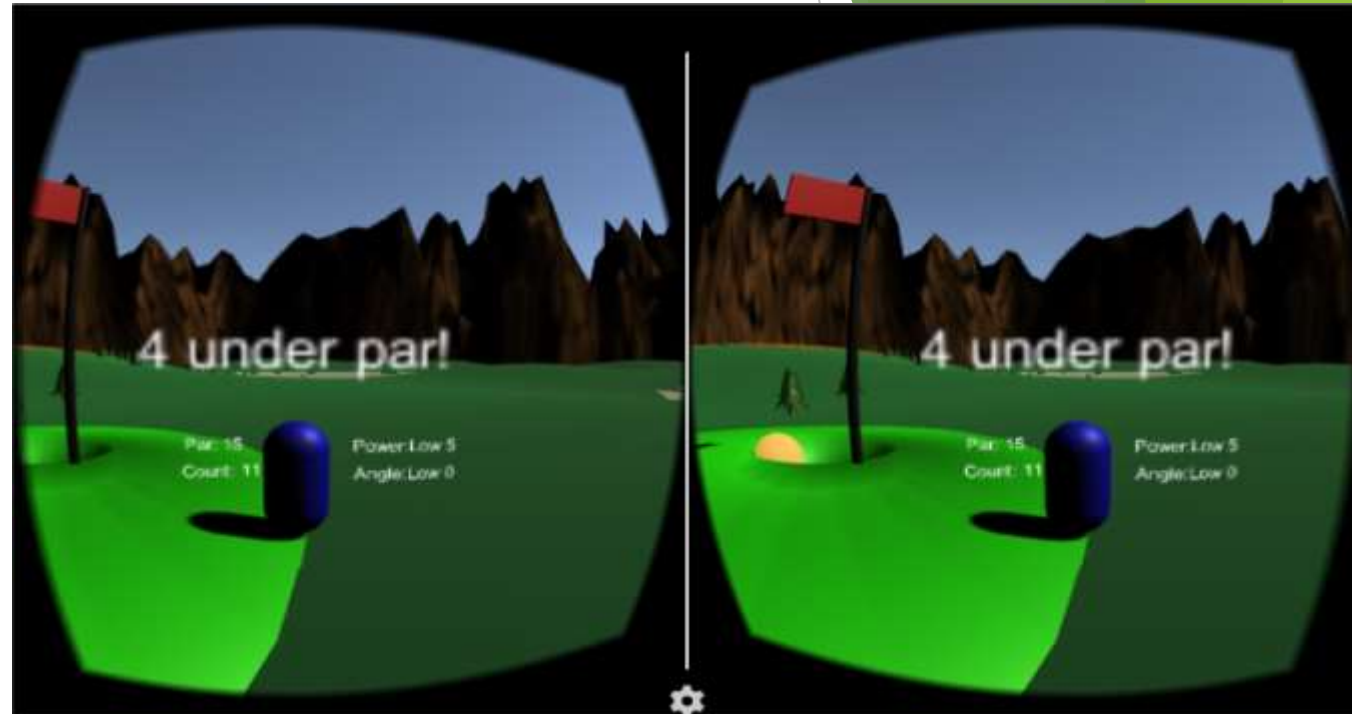
Jump

Pause
(Single Player
and Tutorial)

- Controls were maintained via Unity's built in manager references to joystick buttons which is how Unity handles different controllers.
- We wanted to have simple controls

Single Player

- ▶ Allows players to enjoy Socket Golf by themselves.
- ▶ You hit the ball by running into it with the bean guy.
- ▶ Goal is to get the ball in the hole under par.
- ▶ Par is always set to 15.
- ▶ Random map, trees, and hole location.
- ▶ Issues:
 - ▶ Removing the networking aspects from multiplayer.
 - ▶ Creating a map that is regenerated randomly each game.



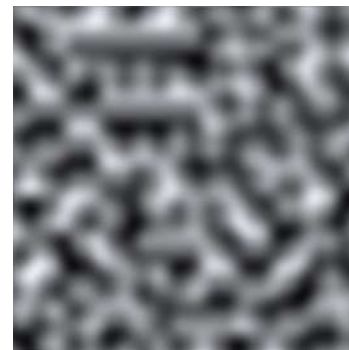
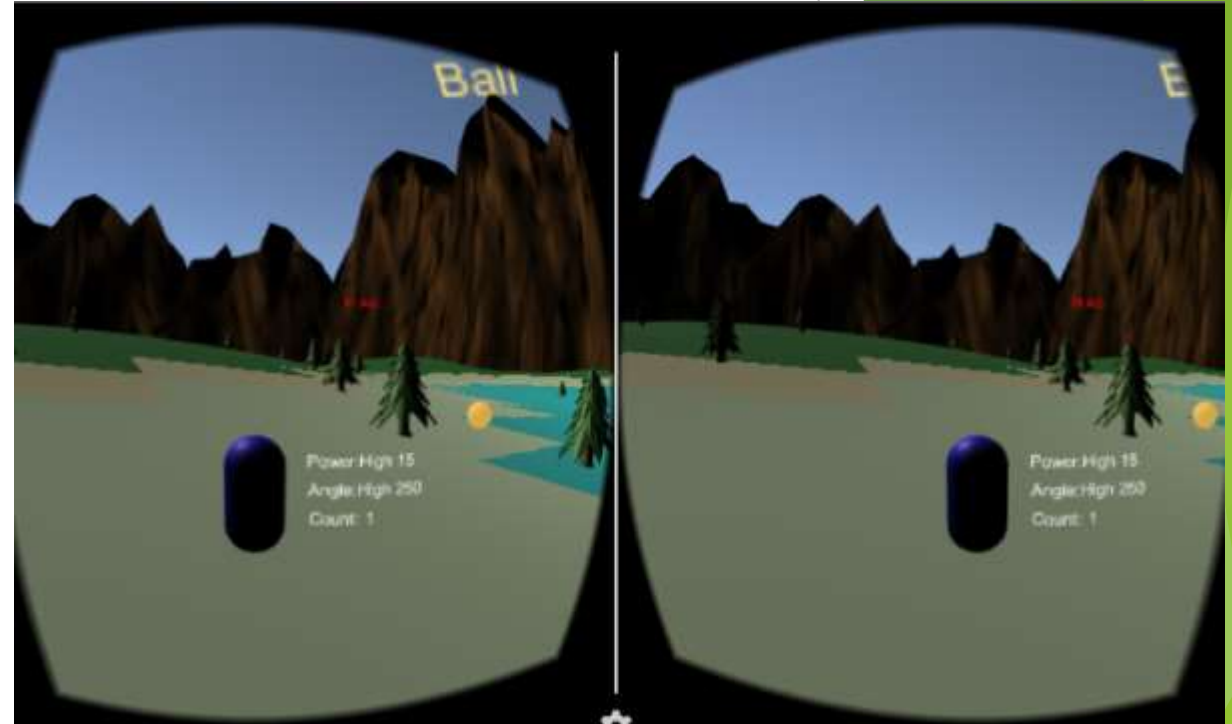
Multiplayer

- ▶ Players can enjoy the game with up to 2 other friends.
 - ▶ Person with the lowest score at the end of the game wins!
 - ▶ This also uses randomized maps, trees, and holes
 - ▶ Currently the multiplayer matches are only set to 1 hole, but it is a future hope that we may be able to add more holes and sum the scores to see who wins.
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- ▶ Issues while creating
 - ▶ Network code is never fun.
 - ▶ A lot of synchronizing problems including, but not limited to map generation, tree placement, scorekeeping.
 - ▶ Unity's poor documentation on the UNET system.



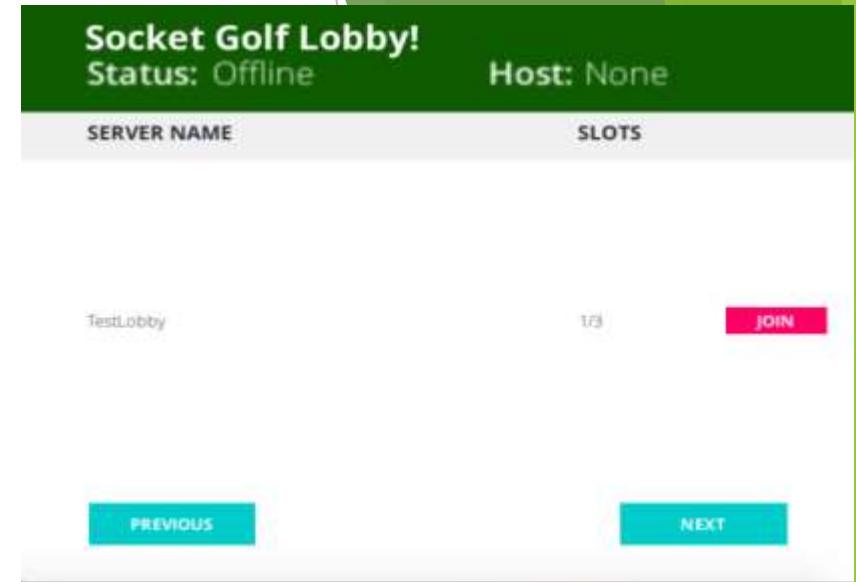
Randomly Generated Maps

- ▶ Lower cost than having to store premade map layouts.
- ▶ Created with Perlin Noise and Interpolation.
- ▶ Allows for a different hole each time that is played.
- ▶ Biggest issue:
 - ▶ Map, trees, and the hole were different for each player. (Syncvars)



UNET

- ▶ UNET is Unity's built in multiplayer service.
- ▶ How we thought Unity works...
 - ▶ Unity "hosts" the game on their server (completely untrue) and allows players to match-make to their servers (also a very untrue)
- ▶ What really happens
 - ▶ Unity hosts communication between players, so when a player creates a game they become the host.
 - ▶ Unity then updates the lobby's listed on their site so that other players can connect peer to peer through Unity's dedicated sites.

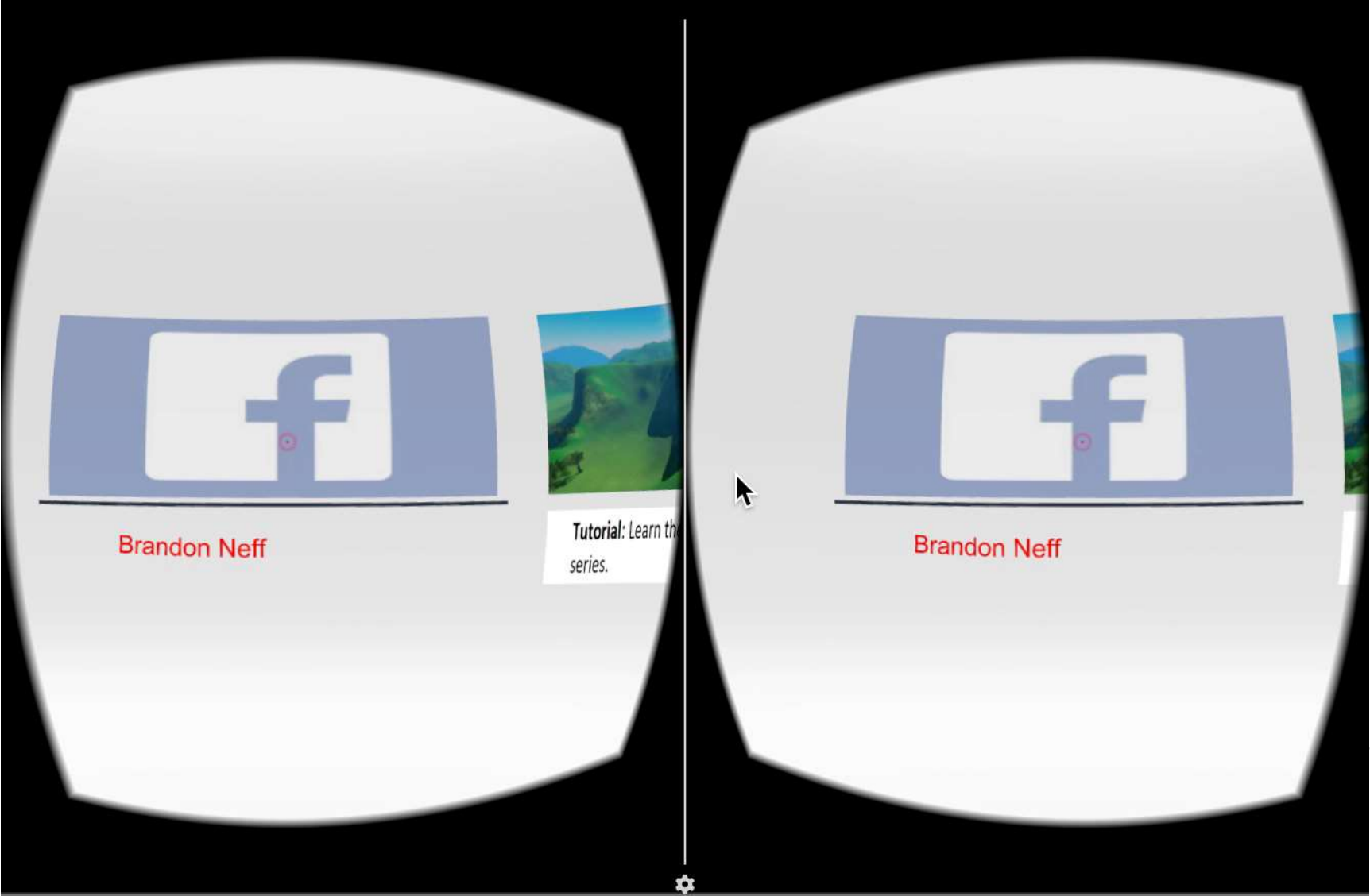


Why we should have not gone with UNET

- ▶ Unfortunately we did not realize this until we were towards the end of the project.
- ▶ UNET does not have a great way to keep scores as it is not an actual server.
- ▶ UNET uses the person that starts a lobby as the host for a game and does a peer to peer connection.
- ▶ Photon has a dedicated server, which is great for score keeping and provides not advantage to any one player.
- ▶ UNET does give us the advantage of supportability as it can run on all devices and allowed are “server” to know what scenes are running in the game and what physics are going on.



Demo



Q&A