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ARCHITECTURE

Github

Created with

Unity – 2021.3.3f1

Assets

Multiplayer SDK

- **Photon Fusion:** High performance, low bandwidth, a lot of built-in features.

Multiplayer Chat

- **Photon Chat:** solution to build a scalable chat.

Multiplayer Voice Chat

- **Photon Voice:** cross platform, allows to attach an audio source to a 3D object in Unity so you can freely place the audio streams, e.g., in a virtual world or an FPS

Notes:

Since Unity doesn't support Microphone in WebGL. We cannot use Photon Voice to maintain the same architecture in WebGL, we need to use a 3rd party plugin.

WebGL Multiplayer Kit – Audio Only

https://assetstore.unity.com/packages/tools/network/webgl-multiplayer-kit-145882

Live Kit SDK – Video & Audio in WebGL

https://github.com/livekit/client-sdk-unity-web

Environment Assets

Used 3D Free Modular KIT – Used for the 3D Environment

Particle Ribborn – Add nice particle effects

Other Assets

Parrel Sync – Allows to test multiplayer gameplay without building the project

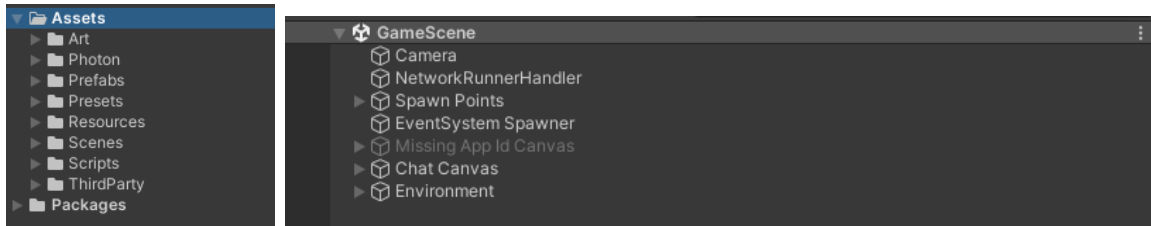Carlos Arturo Rodriguez Silva
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Assets Folder & Scene Project Structure

The project folders are structured by the asset types.

Playability

Inside the metaverse you can **chat** with others, this includes a **voice chat**.

Also, it's included a **mini-game where you can kill others with a gun and then is respawned.**

Input

These are the input keys to interact.

KEYS	Description
WASD	Movement
Mouse	Rotate Camera
Left Click	Fire Gun
Right Click	Fire Missile
Space	Jump
Tab	Locks/Unlock the cursor

Scalability

In the metaverse you can do a lot of things. The main thing is connect with others and do activities together.

The code is easy to understand and can be easy expanded to implement more games or activities.

Programming

Namespaces

Metaverse – All the main scripts are using Metaverse Namespace.
Metaverse.Game – The scripts used in the fire gun game are in this namespace.
Metaverse.Network – Scripts used to connect to the network are in this namespace.
Metaverse.Camera – Scripts used only to the camera are in this namespace.
Metaverse.Character – Scripts used to the character movement.

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Metaverse.Utility – Other Utility scrips are here.

Game Content

Login

When the game starts you need to assign a username and connect to the world.

The Username used will be remembered the next time you log in.

After you click connect, **you will automatically connect to the Room, the Chat Room and the Voice Chat.**
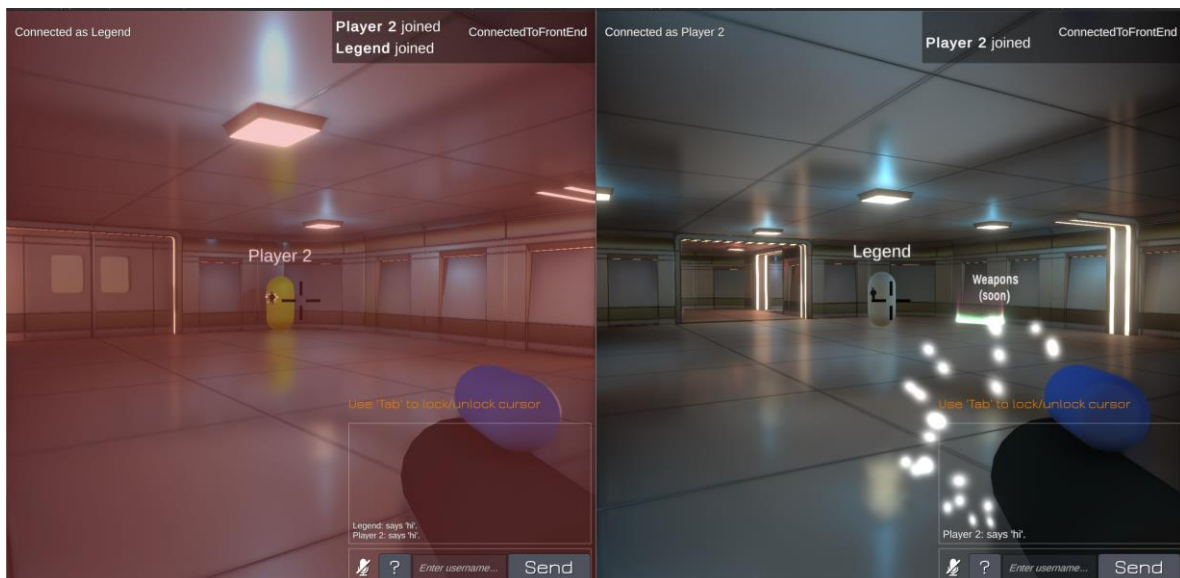
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Game

Inside the metaverse you can move around, shot your gun, or chat with others.

Example of Receiving Damage / Shooting

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Chat & Voice Chat

You can easily chat by sending your message.

To active the voice chat you need to click in the Mic Icon.

If the Icon is showed like this: then your mic is recording you!