Otago Polytechnic

# YEar Three Special Topic

ID730151 Year Three Special Topic

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## Muitiplayer – networking 1

First of all, we need to set up by install these dependencies

Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

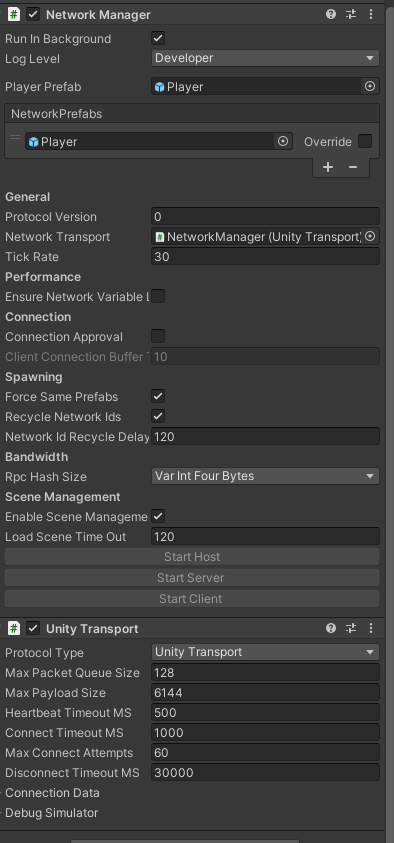
### Environment and Player

Create a basic environment which is just a plane and a player who is a capsule for now.

Graphical user interface, text, application

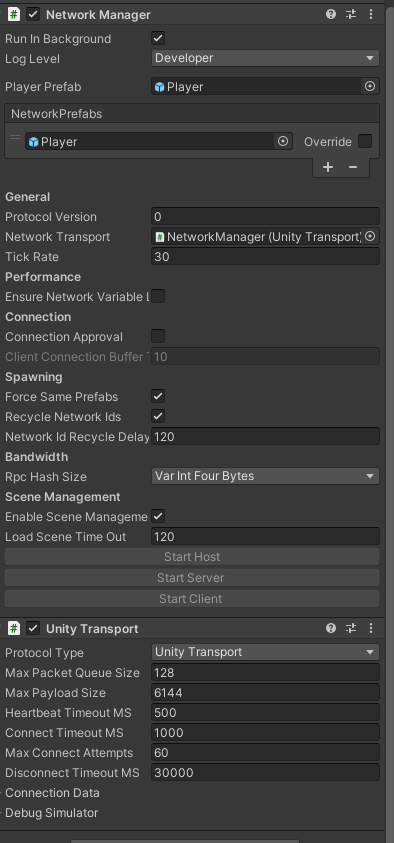
Description automatically generated

We need a network manager as a controller.

Attach NetworkManager component and fill the player refab into the NetworkPrefabs slot.Therefore,we are able to pass the data to the network.

Attach Unity Transsport component

Set the protocol type to be Unity transport.So we can access the unity transport through the network.



Attach a player network script to it and add a basic movement function for testing.

Text

Description automatically generated

Also, we need to attach Network object component to it.

Graphical user interface, text, application

Description automatically generated

Client Network Transform component for passing data. In this case we only need to pass position x and z to move around the player

Graphical user interface

Description automatically generated

### UI

Set up three buttons for controller.

A screenshot of a video game

Description automatically generated with medium confidence

Graphical user interface, text, application

Description automatically generated

Add a basic callback function for these three buttons.

Text

Description automatically generated

### Testing

Build this project and create a host on it, while create client on unity editor, and we are able to move and they are synchronized .

Graphical user interface

Description automatically generated

## MUITIPLAYER – NETWORKING 1

### Passing data

The PlayerNetwork should inheritance from NetworkBehaviour

Graphical user interface, text

Description automatically generated

Text

Description automatically generatedCreate MyCustomDatafor data passing, and also we need to serialize it, otherwise it won’t work.

Using NetworkVariable function to create a randomNumber base on MyCustomData.

Set the NetworkVariableReadPermission to Everyone,

Graphical user interface, text

Description automatically generatedSaet the NetworkVariableWritePermission only for owner.

Createa Interact function by press T key on the keyboard.

Then create a new random number.

Subscript OnRandomNumberChanged to OnNetworkSpawn.

Text

Description automatically generatedA picture containing timeline

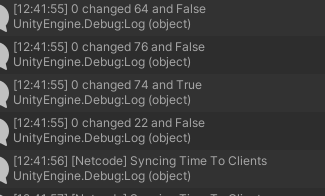
Description automatically generatedGraphical user interface, text

Description automatically generated with medium confidenceIt allows us to change the data on the network.

if (!IsOwner) return;

This is allowed that only owner can control itself otherwise both host and client will move at the same time and position.

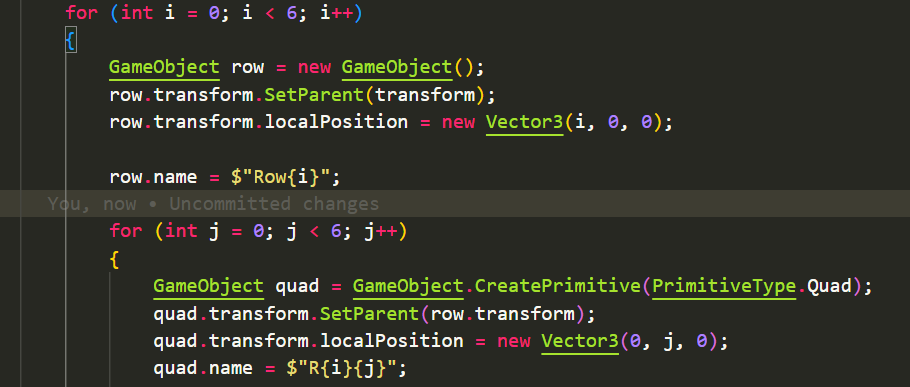
A picture containing text, indoor, screenshot

Description automatically generatedBuild again, press T key on the client end we can see the data on the console log on the Host end.

## Checkerboard

Create a board game object on the scene.

Iterate the loop to create quad in each row.

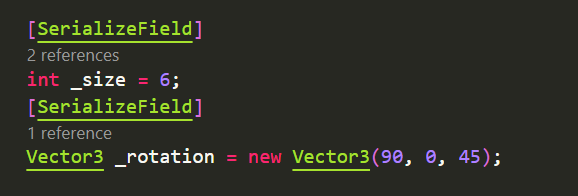


Change each color on the quad

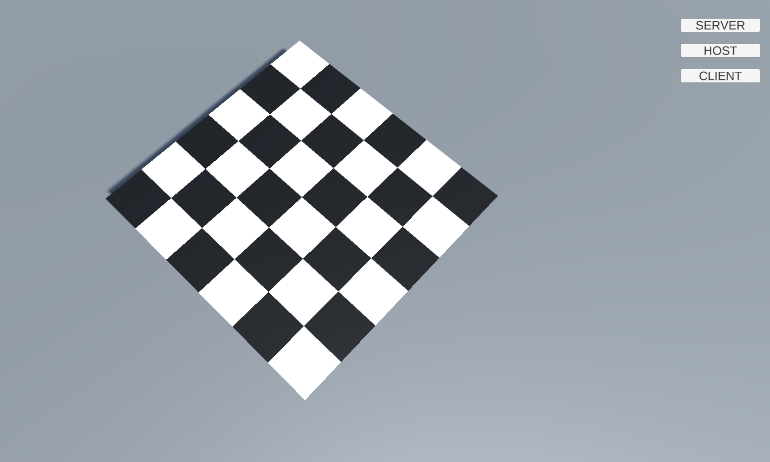
A screenshot of a computer

Description automatically generated with medium confidence

Rotate the board and generate it.



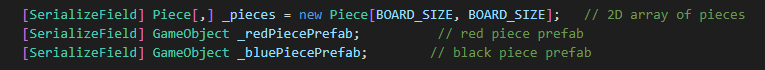




## Checkerboard-Pieces 1

Create a 2d array and set the size to 6 and declare piece prefabs





We only need 6 pieces for each player and initially place them at the correct place by a calculation.

Text

Description automatically generated Text

Description automatically generated

Text

Description automatically generated

Also, each piece will be attached to each quad for now.

Graphical user interface, text

Description automatically generated

