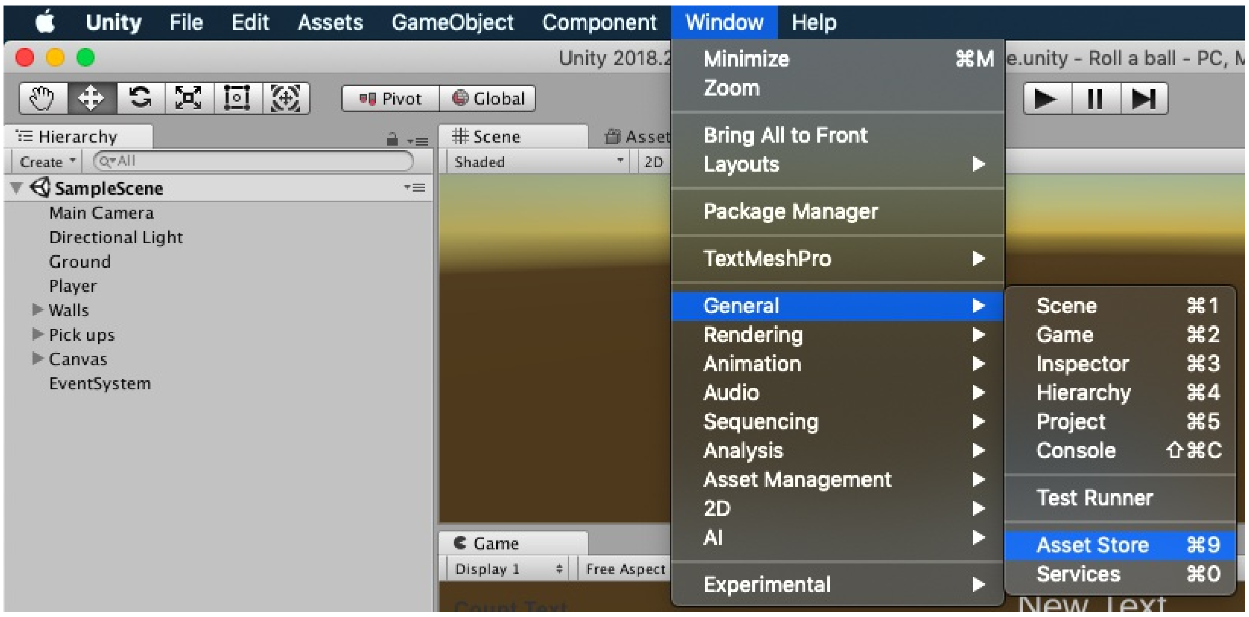
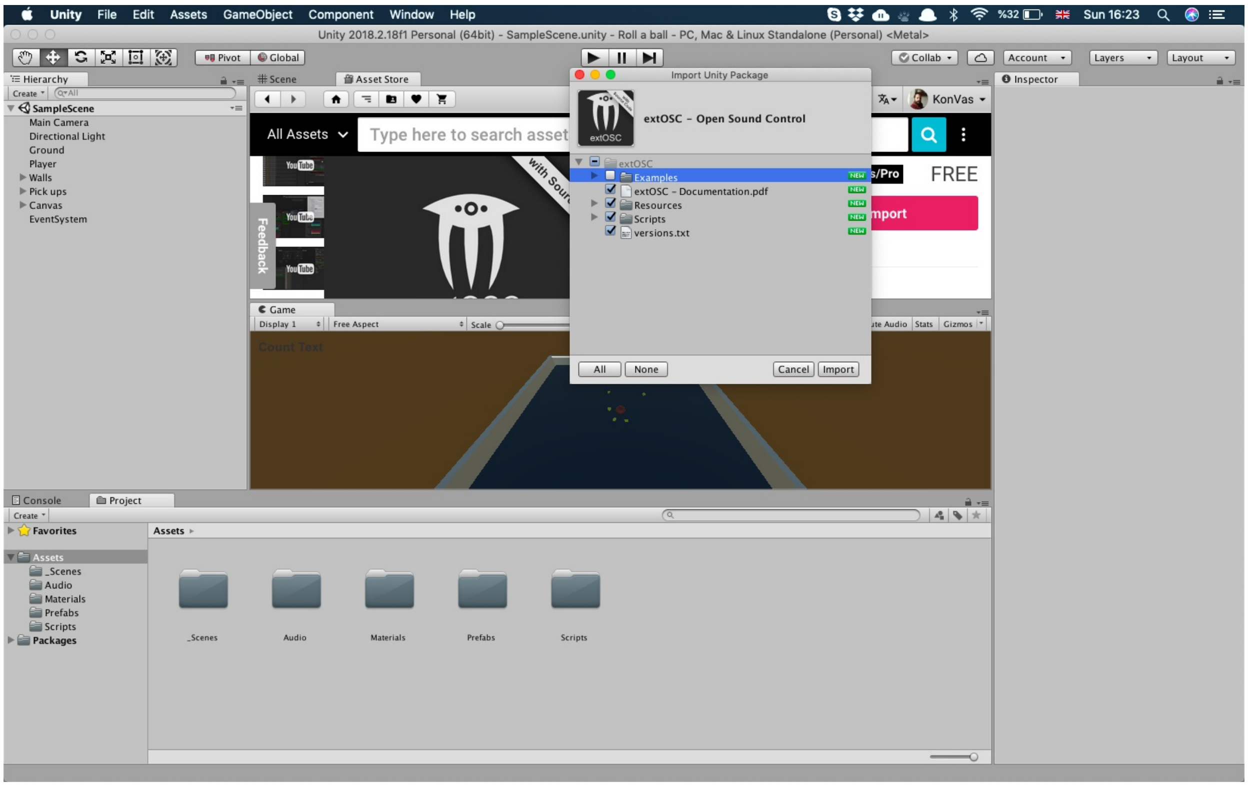
Unity and SuperCollider

See first this (link)[https://www.youtube.com/watch?v=p7rG6EPVt80] for an introduction of the concept. Unity has already a ready made implementation of OSC communication provides as a free asset, named `extOSC`. For more information see this page in Unity (website)[https://assetstore.unity.com/packages/tools/input-management/extosc-open-sound-control-72005]. Then, once you have downloaded the Asset in your project you can load it as a component and start mapping it with any other application that receives OSC messages. Using this asset does not require any coding.

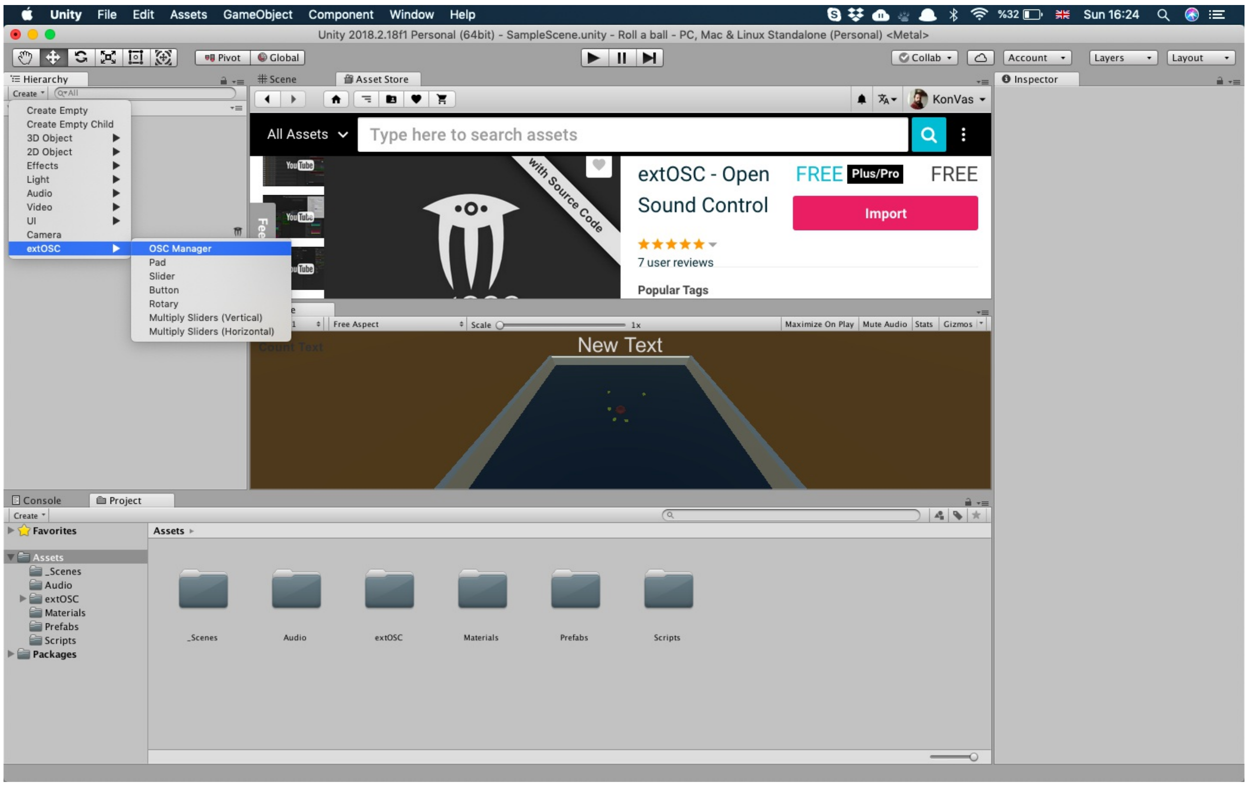
To use the OSC library we need install it and import it inside our project. Unity provides an online system for this, where you can search and download any asset you are looking for and then import it in your project, accesed through the asset store as seen below.



Once you download it you can import it as seen below, it also asks which folder you will need.

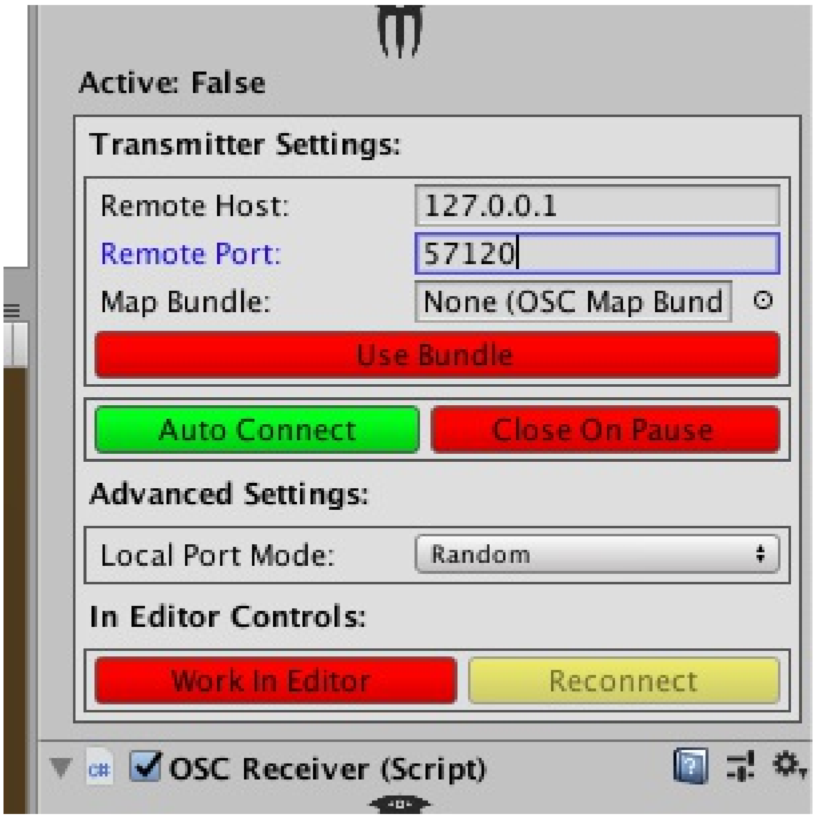


Go to Hierarchy and press on the create button just below. Opening the OSC manager from the lib you will be able to select the remote address in order to send the OSC messages.



To send to SuperCollider we will type the localhost address, and the language's port, that is:

> Remote Port: `57120`


Active: False

Transmitter Settings:

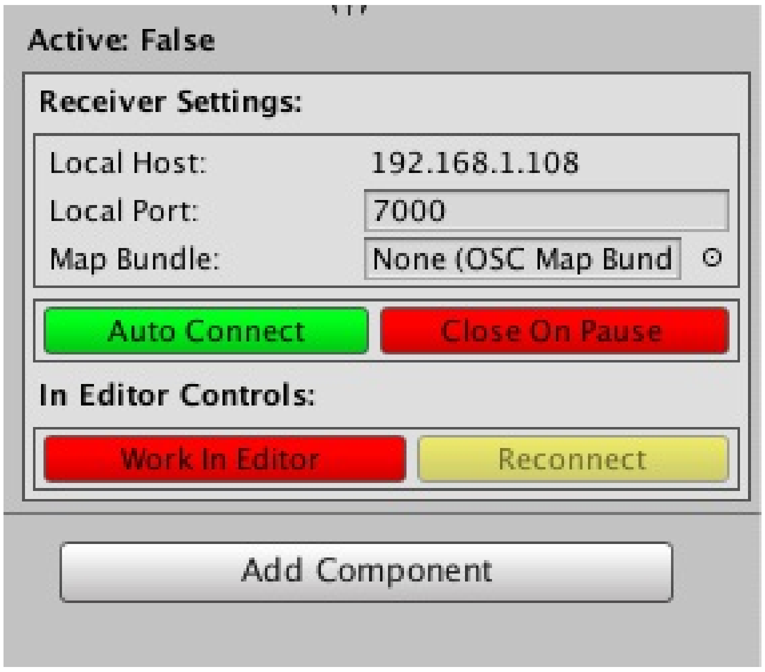
Remote Host: 127.0.0.1
Remote Port: 57120
Map Bundle: None (OSC Map Bund

Advanced Settings:

Local Port Mode: Random

In Editor Controls:

Similarly, you can map things in the same way for receiving OSC in Unity as seen below:


Active: False

Receiver Settings:

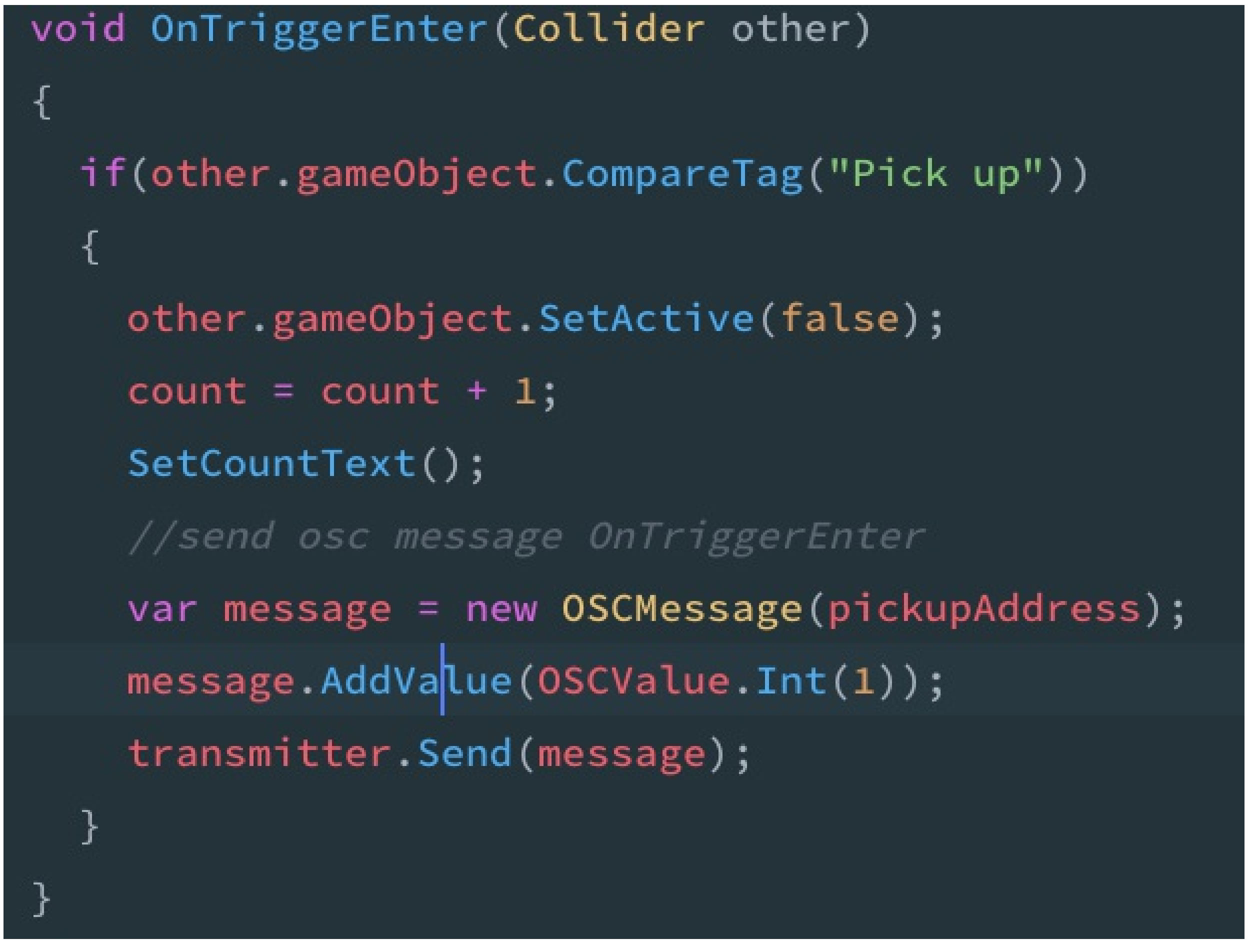
Local Host: 192.168.1.108
Local Port: 7000
Map Bundle: None (OSC Map Bund

In Editor Controls:

Some things are not possible to be done with the inspector so you will have to spend some time to hard code some functionalities.

Moving to the script side, first and foremost as we saw in other programming languages covered this semester, we need to denote which libraries we are going to use inside our script.

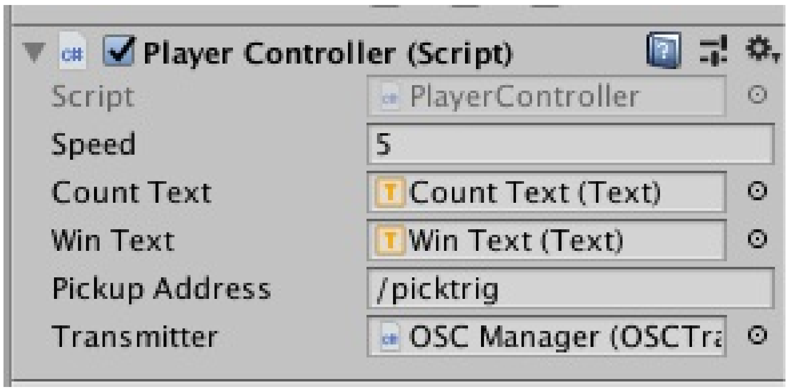
In order to implement the OSC message we will need to create it inside our function that we are using for making the player, or the ball that is used as the player object.



```
void OnTriggerEnter(Collider other)
{
  if(other.gameObject.CompareTag("Pick up"))
  {
    other.gameObject.SetActive(false);
    count = count + 1;
    SetCountText();
    //send osc message OnTriggerEnter
    var message = new OSCMessage(pickupAddress);
    message.AddValue(OSCValue.Int(1));
    transmitter.Send(message);
  }
}
```

> trigger the OSC message from the OnTriggerEnter function.

Provided we have created this above, we can create then a public variable with the message we want to send without hardcoding it all the time and thus this will allow us to use in our program.



Player Controller (Script)

Script	PlayerController
Speed	5
Count Text	Count Text (Text)
Win Text	Win Text (Text)
Pickup Address	/picktrig
Transmitter	OSC Manager (OSCTr

> See the osc msg '/picktrig' available to the inspector.

Once this is implemented in the Unity project, SuperCollider can receive the OSC messages. To do this we need to create an OSC receiver, note that the OSC message must be identical, that is `'/picktrig'` if these two are not identical SC will fail to receive anything and thus there won't be any communication between the two applications.

```
thisProcess.openUDPPort(57120);
OSCdef(\urot1, {|msg|
    msg.postln
}, '/picktrig' );
```

```
OSCdef(urot1, /picktrig, nil, nil, nil)
[ /picktrig, 1 ]
[ /picktrig, 1 ]
[ /picktrig, 1 ]
```

> see the messages SC is receiveing right on the post window.

Press |> and see the communication is going through.