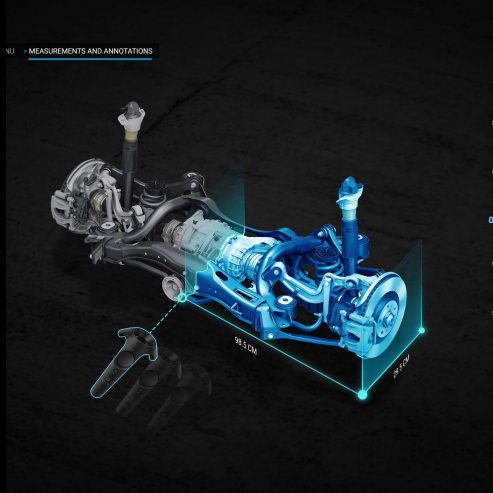


Session 9

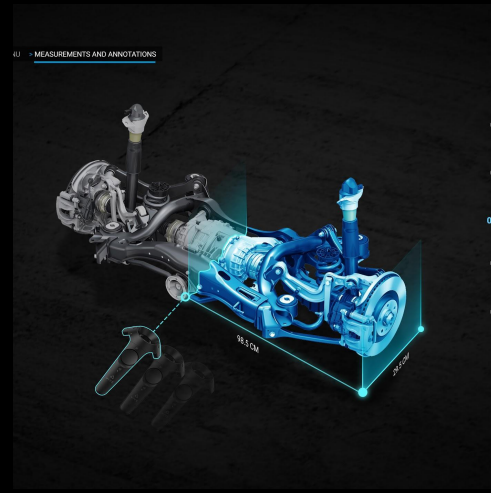
Advanced Networking

How did converting your Capstone Project interactions go? What issues did you encounter when testing the project?

Instructor(s)

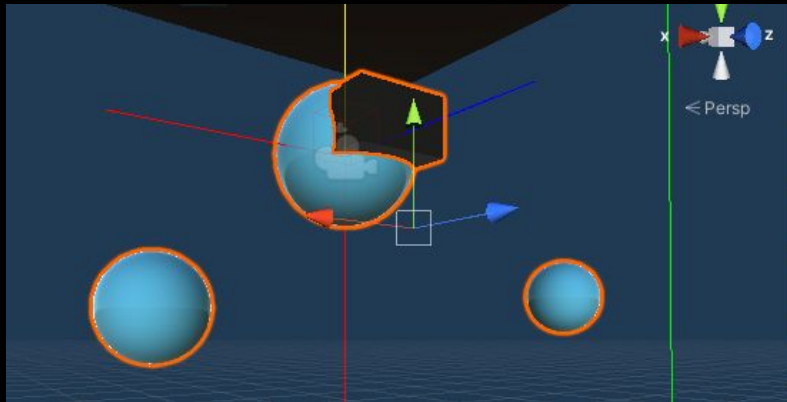


Instructor Name
Instructor Title
Instructor Company



TA Name
TA Title
TA Company

Session Goals



In this session, you'll:

- Modify the XR Rig to have different functionality for the Local user
- Configure Object Ownership in Photon to manage who is permitted to interact with certain objects
- Create user avatars to allow users to interact with each other

Session outline

1. Configuring XR Rigs for Multi-user Applications
 - Apply scripts to enable and disable key XR Rig Components
1. Configuring Object Ownership in Photon
 - Allow interactable objects to change ownership when grabbed
1. Creating User Avatars in VR
 - Add avatars for non-local players in your project

Activity 9: Finalize your Multi-user application



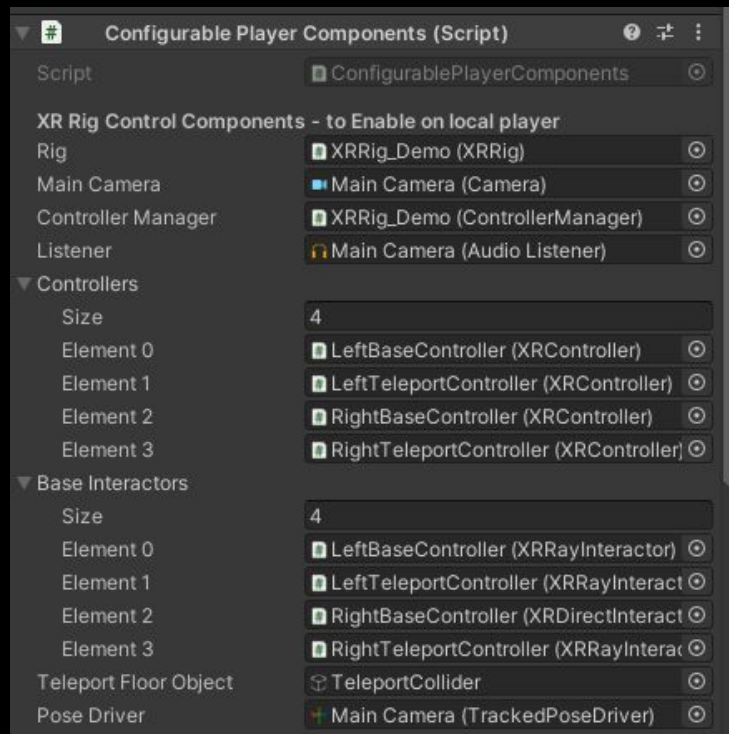
Configuring XR Rigs for Multi-user Applications

What problems are there with the XR Rig right now?

Configuring XR Rigs for Multi-user Applications

```
public class ConfigurablePlayerComponents : MonoBehaviour
{
    [Header("XR Rig Control Components - to Enable on local player")]
    public XRRig rig;
    public Camera mainCamera;
    public ControllerManager controllerManager;
    public AudioListener listener;
    public XRController[] controllers;
    public XRBaseInteractor[] baseInteractors;
    public GameObject TeleportFloorObject;
    public TrackedPoseDriver poseDriver;
}
```

Configuring XR Rigs for Multi-user Applications



Modifying the XR Rig



1. Apply scripts to enable key XR Rig components and properly apply local player inputs exclusively to the local XR Rig instance

```
// create the player instance
GameObject myRig = PhotonNetwork.Instantiate(playerPrefab.name, new Vector3(0f, 0f, 0f), Quaternion.identity, 0);

// set certain XR Rig Components active on this local player instance only
ConfigurablePlayerComponents myComponents = myRig.GetComponent<ConfigurablePlayerComponents>();
myComponents.mainCamera.enabled = true;
myComponents.rig.enabled = true;
myComponents.listener.enabled = true;
myComponents.controllerManager.enabled = true;
myComponents.TeleportFloorObject.SetActive(true);
myComponents.poseDriver.enabled = true;

foreach (XRController controller in myComponents.controllers)
    controller.enabled = true;

foreach (XRBaseInteractor interactor in myComponents.baseInteractors)
    interactor.enabled = true;
```


Modifying the XR Rig



1. Apply scripts to enable key XR Rig components and properly apply local player inputs exclusively to the local XR Rig instance

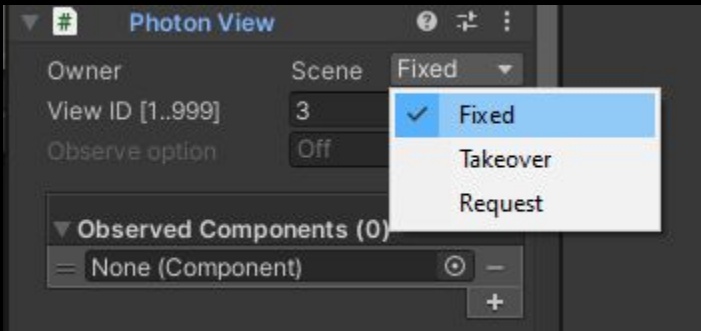
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GameObject myRig = PhotonNetwork.Instantiate(playerPrefab.name, new Vector3(0f, 0f, 0f), Quaternion.identity, 0);

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ConfigurablePlayerComponents myComponents = myRig.GetComponent<ConfigurablePlayerComponents>();
myComponents.mainCamera.enabled = true;
myComponents.rig.enabled = true;
myComponents.listener.enabled = true;
myComponents.controllerManager.enabled = true;
myComponents.TeleportFloorObject.SetActive(true);
myComponents.poseDriver.enabled = true;

foreach (XRController controller in myComponents.controllers)
    controller.enabled = true;

foreach (XRBaseInteractor interactor in myComponents.baseInteractors)
    interactor.enabled = true;
```

Configuring Object Ownership in Photon

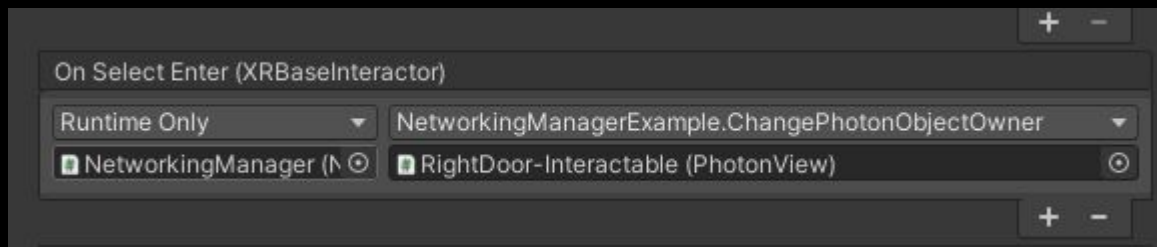


```
public void ChangePhotonObjectOwner(PhtonView toChange)
{
    ...
    toChange.TransferOwnership(PhtonNetwork.LocalPlayer);
}
```

Configuring Object Ownership



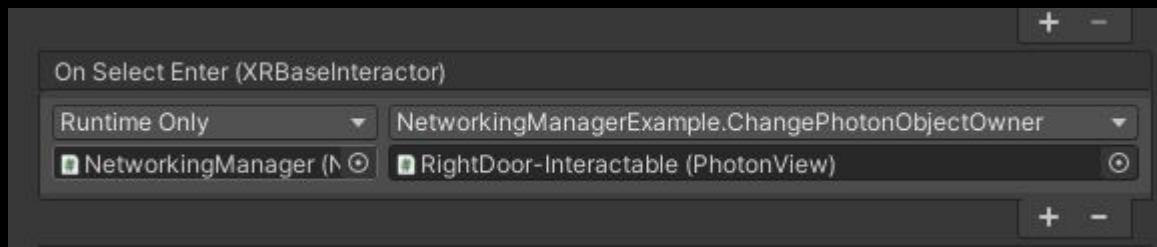
1. Configure interactable objects to change ownership when grabbed



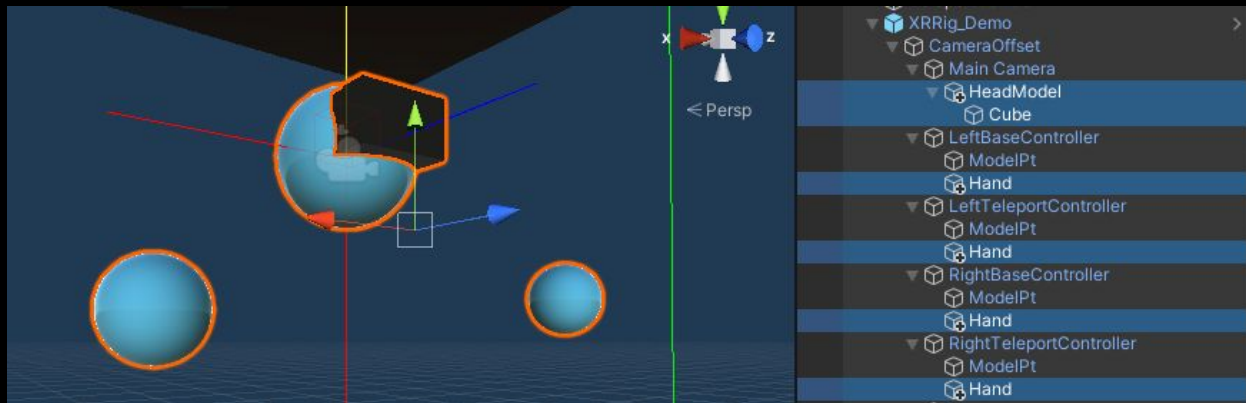
Configuring Object Ownership



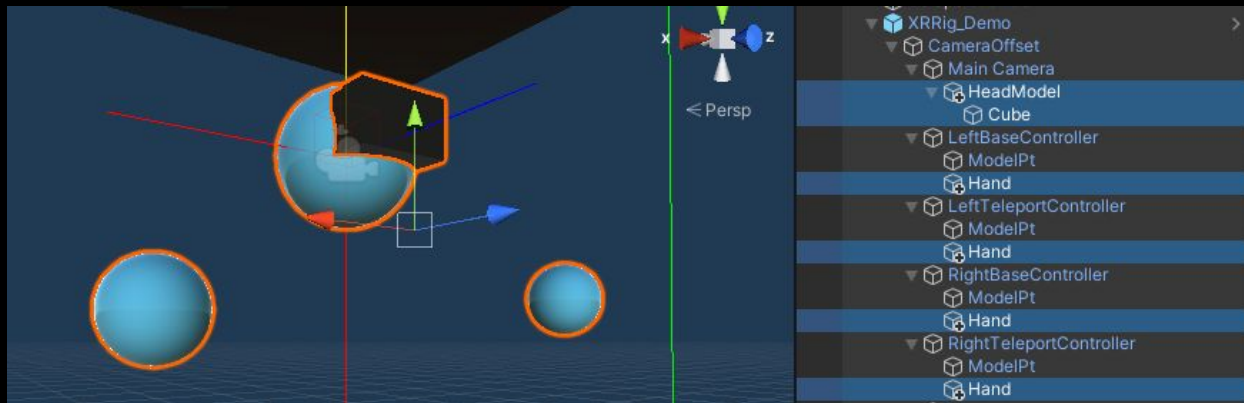
1. Configure interactable objects to change ownership when grabbed



Creating User Avatars



Creating User Avatars



```
[Header("Avatar objects - to Disable on local player")]  
public GameObject[] avatarObjects;
```

Avatar objects - to Disable on local player

Avatar Objects

Size

5

Element 0

HeadModel

Element 1

Hand

Element 2

Hand

Element 3

Hand

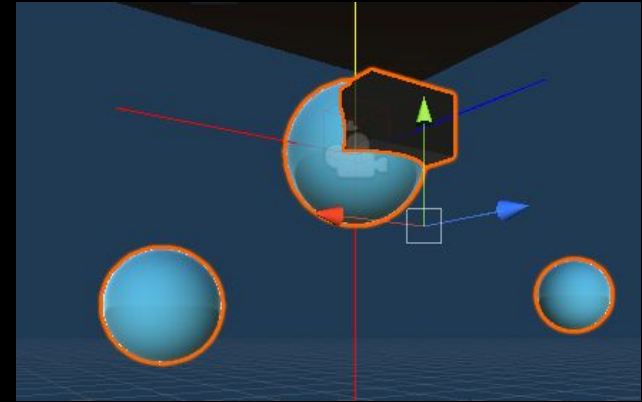
Element 4

Hand

Configuring User Avatars



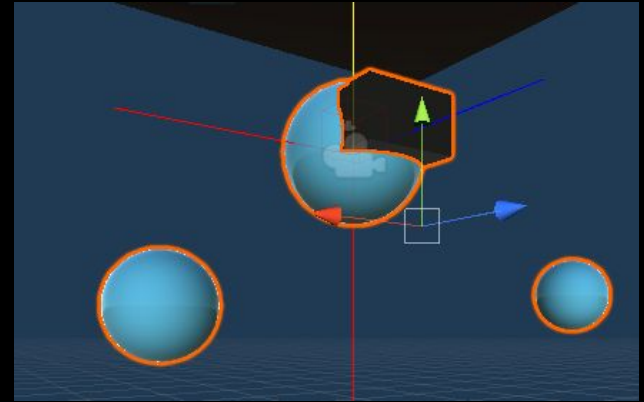
1. Use 3D Primitives and the ConfigurableRigComponents script to create user avatars
 2. Toggle Off User Avatar components for local players in your NetworkManager script
-



Configuring User Avatars



1. Use 3D Primitives and the ConfigurableRigComponents script to create user avatars
 2. Toggle Off User Avatar components for local players in your NetworkManager script
-



Activity Session 9

Finalize your Capstone Project

Activity 9 Goals

1. Test your networked application with your partner and make sure all interactivity works as intended
1. Continue working in your project to prepare it for the Session 10 presentation

Feel free to ask questions!



Thank you.