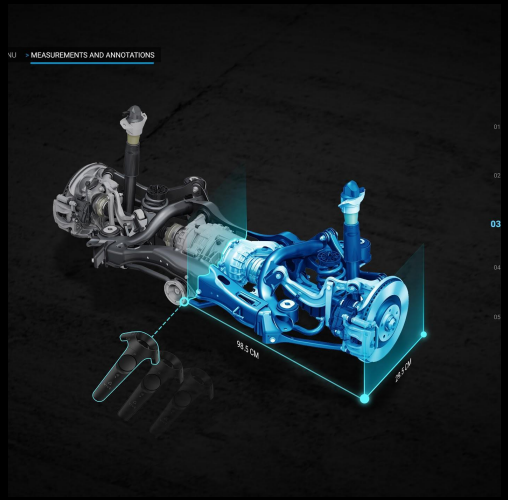
Session 1

Introduction to Virtual Reality in Unity

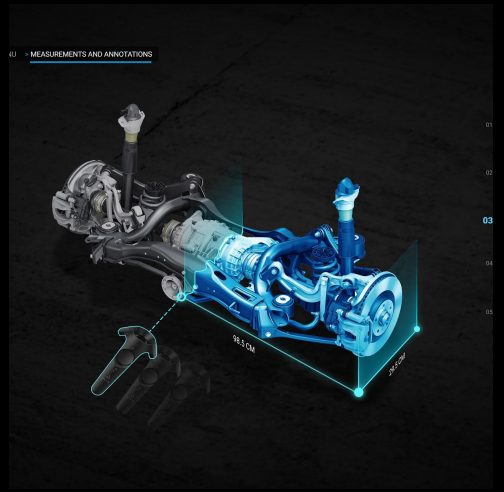
What has been your favorite experience in VR and why was it impactful for you?

(Note: Make sure your VR Headset is nearby and plugged in.)

Instructor(s)

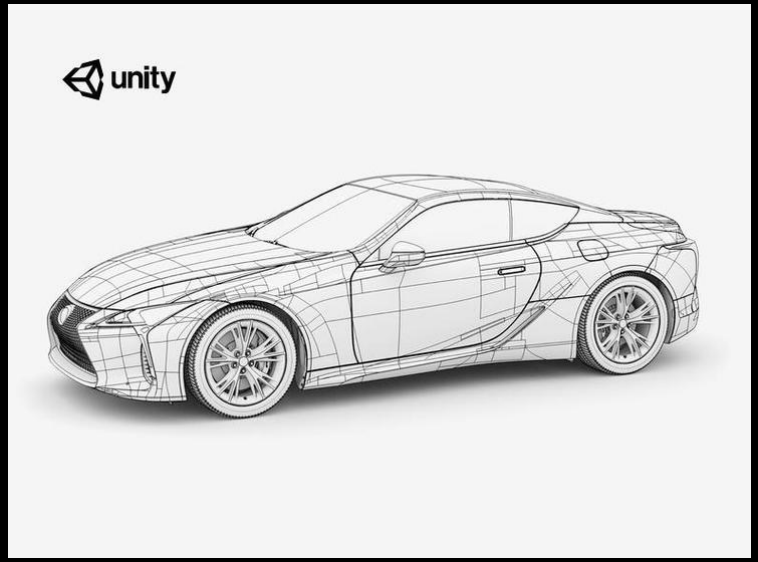


Instructor Name
Instructor Title
Instructor Company



TA Name
TA Title
TA Company

Session Goals



In this session, you will:

- Get familiar with the Webinar format and goals for this Series
- Identify current trends in VR Hardware and Applications
- Set up VR hardware for use with Unity
- Use the XR Interaction Toolkit's **XR rig** and **Grab Interactables** to create a simple VR scene in Unity

Today’s Agenda

Goals for this Series

Setting up VR in Unity
Challenge: Test a project in Unity using your VR headset

Introduction to the XR Interaction Toolkit and XR Rigs
Challenge: Create and customize an XR Rig

XR Interaction Toolkit: Grab Interactables
Challenge: Add and customize Grab Interactables

Activity 1: Configure and Build a Simple VR Project

Webinar Format

- **Questions** in the Q&A Panel and **Comments** in the Chat Panel
  - Be respectful and constructive
- Be ready to follow along
  - Have Unity ***2019.3*** open and your Unity Project ready
  - Have a supported VR HMD set up and ready
  - ***https://bit.ly/EnvivoVR_Start***

Series Format

Instructor-Led Live Session	Instructor-Assisted Project Work	Project work with Instructor Office Hours

Week 1				
Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Session 1 Setting up VR in Unity	**Session 2** Interactors and Interactables	**Session 3** Locomotion in VR	**Session 4** User Interfaces in VR	**Session 5** Advanced Interactions in VR
Activity 1 Configure and Build a Simple VR Project	**Activity 2 + Office Hours** Capstone Project Kickoff	**Activity 3** Teleportation Anchors	**Activity 4** Create Interactive Interfaces	**Activity 5 + Office Hours** Create Advanced Interactions

Week 2				
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
Session 6 Audio and User Experience in VR	**Session 7** Post Processing and Lighting	**Session 8** Multi-user Applications	**Session 9** Advanced Networking: User Avatars	**Session 10** Capstone reviews
Activity 6 Polish Interactions and Project Audio	**Activity 7 + Office Hours** Finalize and Build your Application	**Activity 8** Test networking solution	**Activity 9** Fine tune and test networking	**Activity 10 + Office Hours** Capstone Project Review

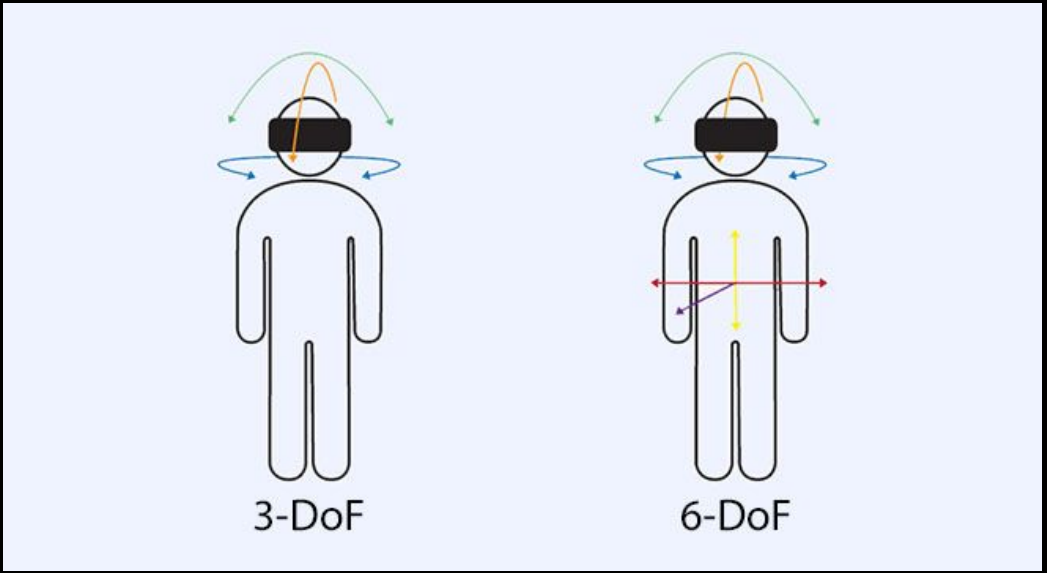
Goals for this Series

Learning Objectives

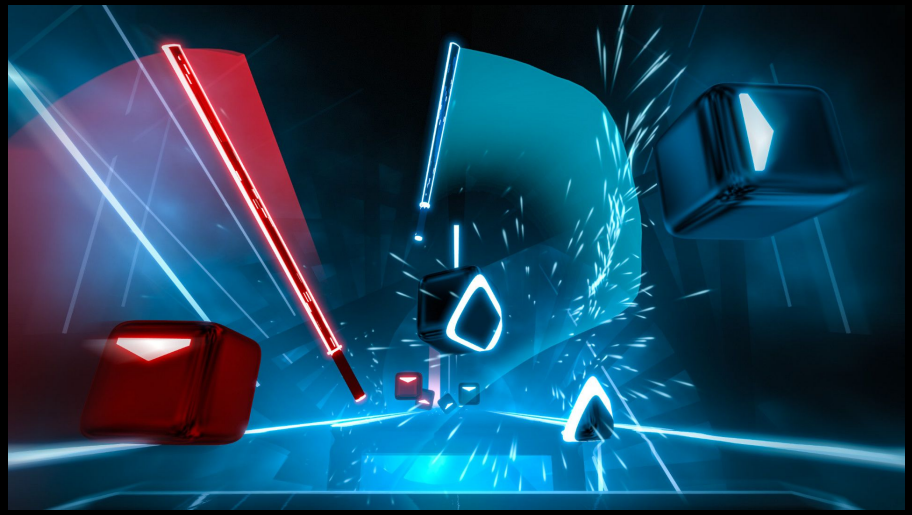
- Configure Unity development environment and hardware in order to work on Virtual Reality-enabled (VR-enabled) projects.
- Design and implement interactions in VR using Unity's XR Interaction Toolkit.
- Prepare, import, and configure assets in a manner that will support and enhance the Virtual Reality experience.
- Identify and apply best practices in VR in order to create experiences with comfort and usability in mind.
- Configure grab interactions using Ray/Direct Interactors and Interactables.
- Implement Locomotion in VR by creating VR Rigs with Teleportation Anchors and Providers.
- Create VR-friendly and intuitive user interface using world-space rendered Canvas UI elements and XRUI pointers.
- Fine tune user experience by configuring haptic feedback on Interactors and customizable Interactable events.
- Add professional polish to a project with VR-optimized audio and post processing effects
- Configure simple multi-user applications using Photon Unity Networking

The Current State of VR

Degrees of Freedom



Types of VR Applications



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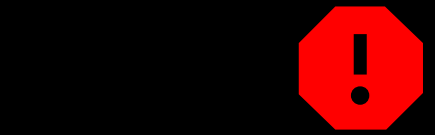
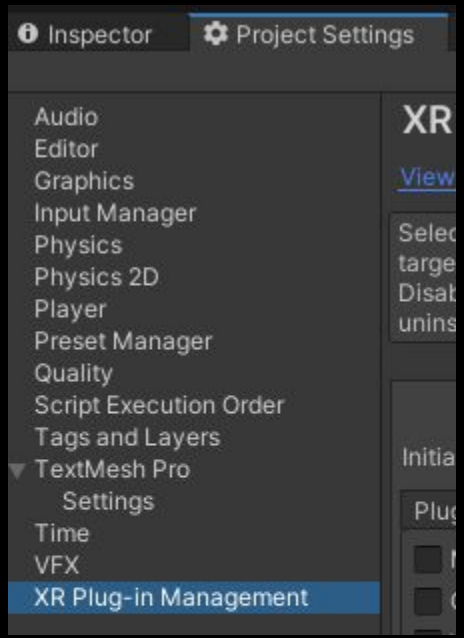
Poll - What kind of VR Hardware are you using for this series?

Enabling VR

Enable VR in your project



1. Open the **VR Solar System** scene in your Project
2. Enable VR Using XR Plugin Management or XR Settings
3. Test the VR Solar System Scene - what do you notice? Have any components been automatically applied to the Camera?
4. Experiment with changing the scale of objects in the scene.



! Remember, if you have questions please use the **Q&A** webinar window rather than the chat

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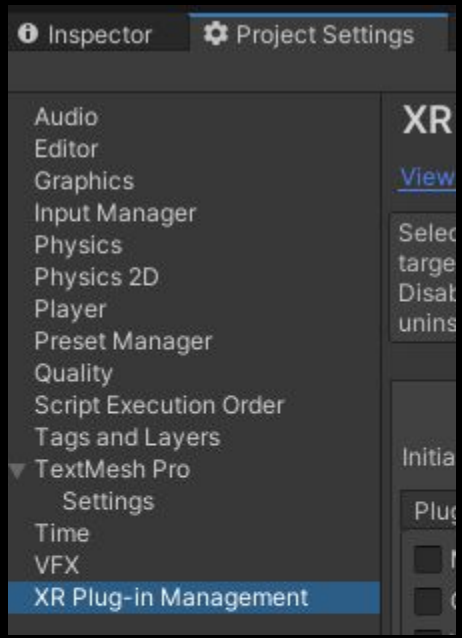

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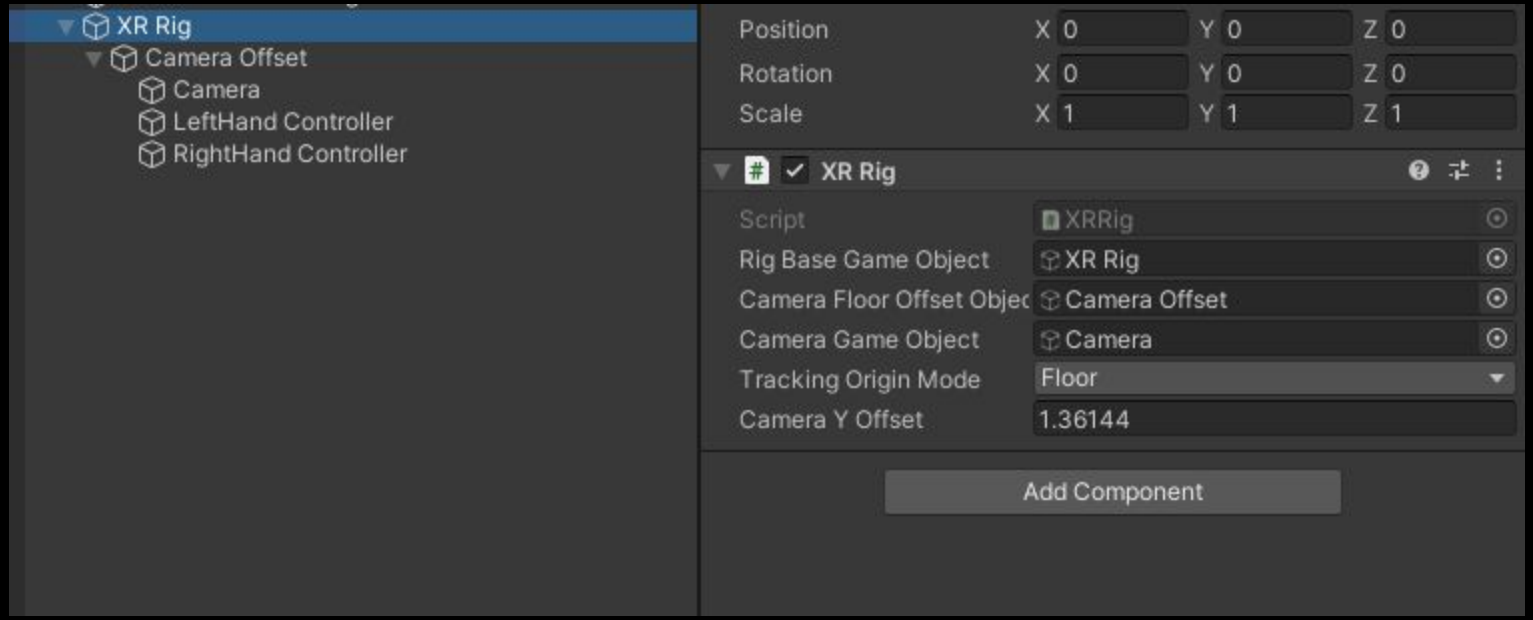
XR Interaction Toolkit
Preview
AR/VR app interactivity without coding

Anatomy of an XR Rig



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Add an XR Rig to your Project

1. Window > Package Manager and Ensure the XR Interaction Toolkit is in your project
2. Create a Room-Scale XR Rig
3. Add controller models or 3D Primitives to the XR Rig hands

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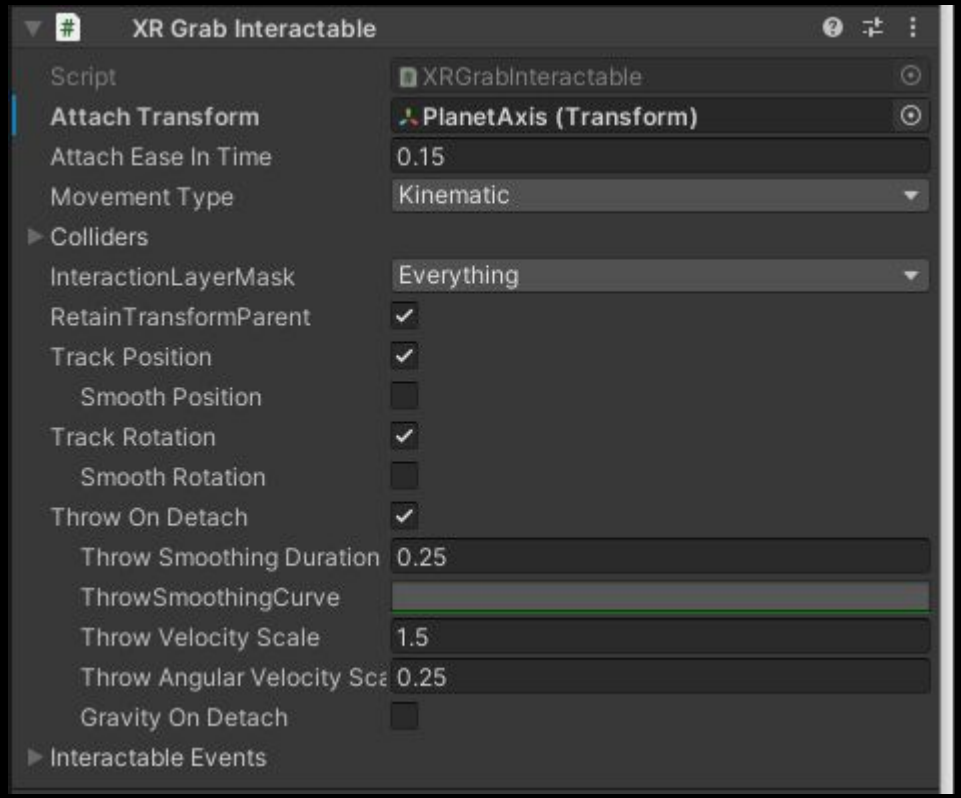
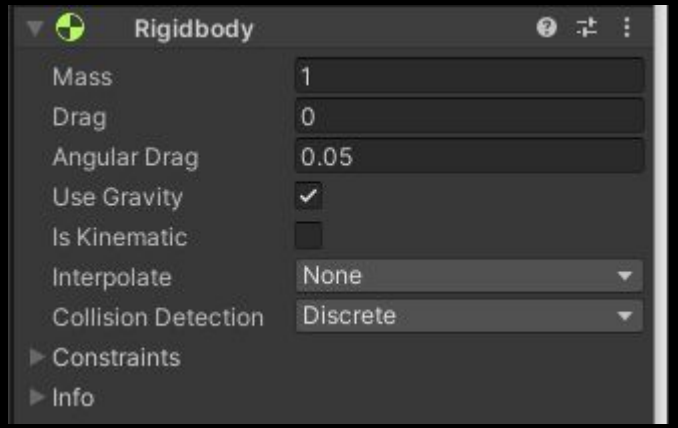
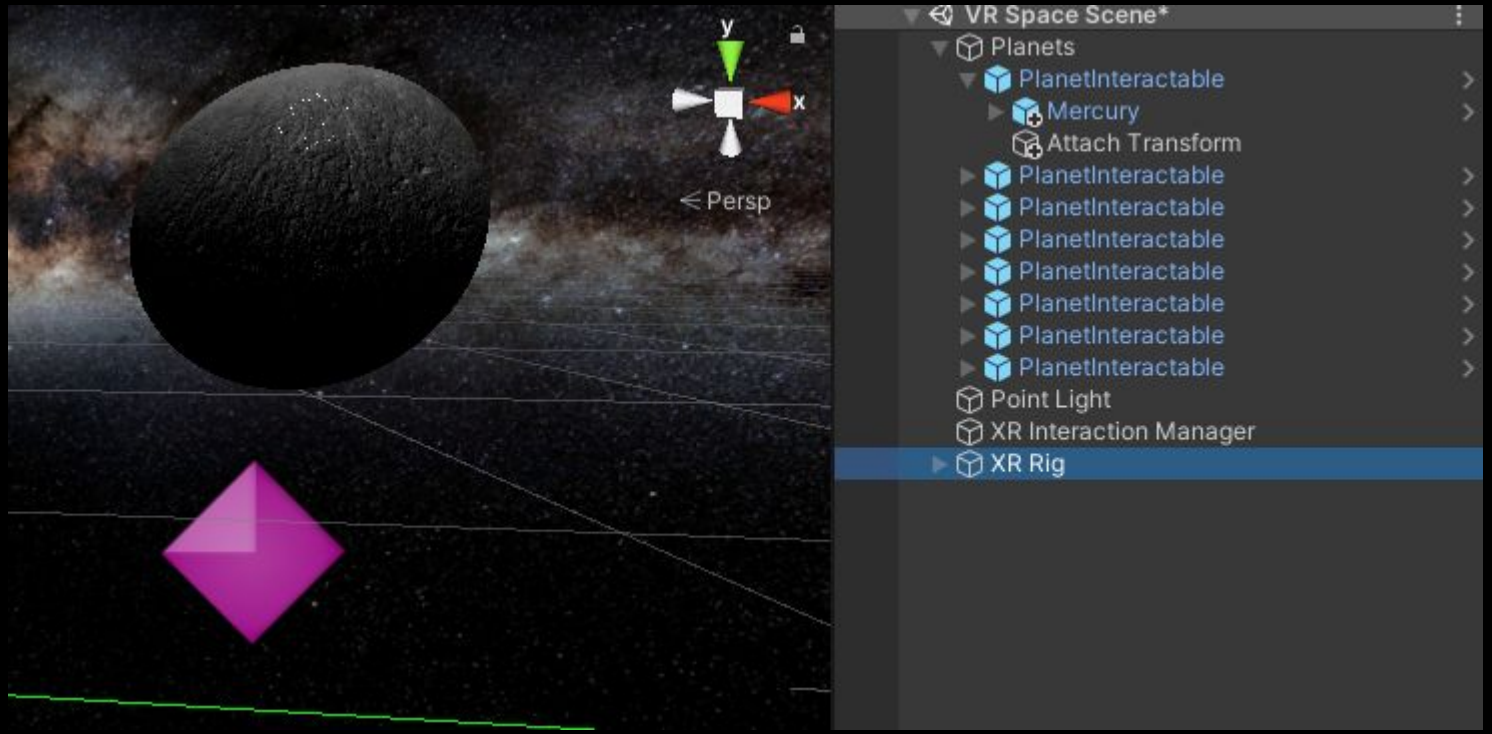
Grab Interactables





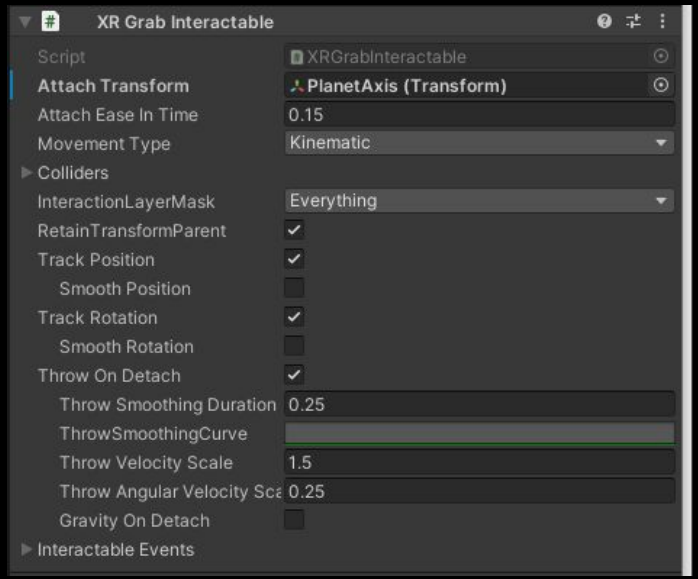
Attach Transform



Create an XR Grab Interactable Prefab

1. Create an Empty GameObject
2. Add The XR Grab Interactable Script. A Rigidbody component should be added automatically
3. Adjust XR Grab Interaction parameters
   - Attach Transform
   - Attach Ease In Time
   - Throw/Gravity on Detach
   - Rigidbody for Physics Parameters

! What do different parameter values do to the user experience? What do you prefer?



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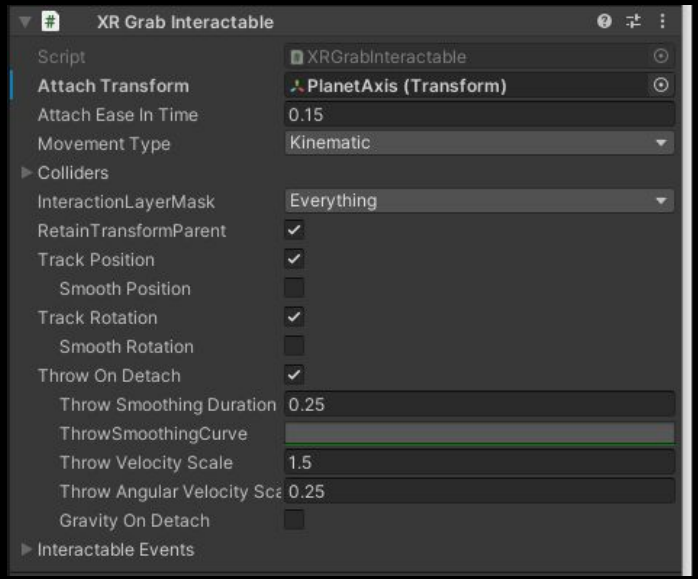

Activity Session 1

Configure and Build a Simple VR Project

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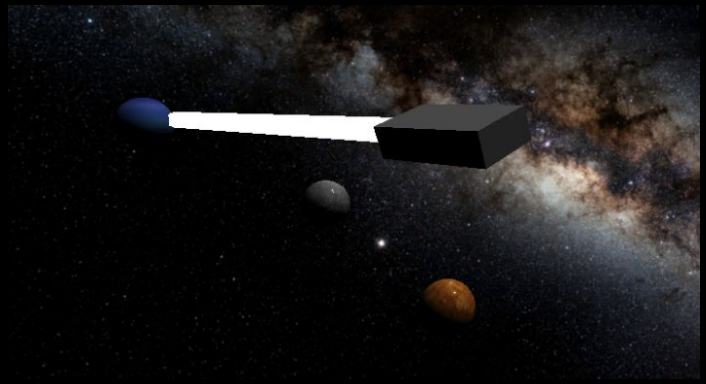
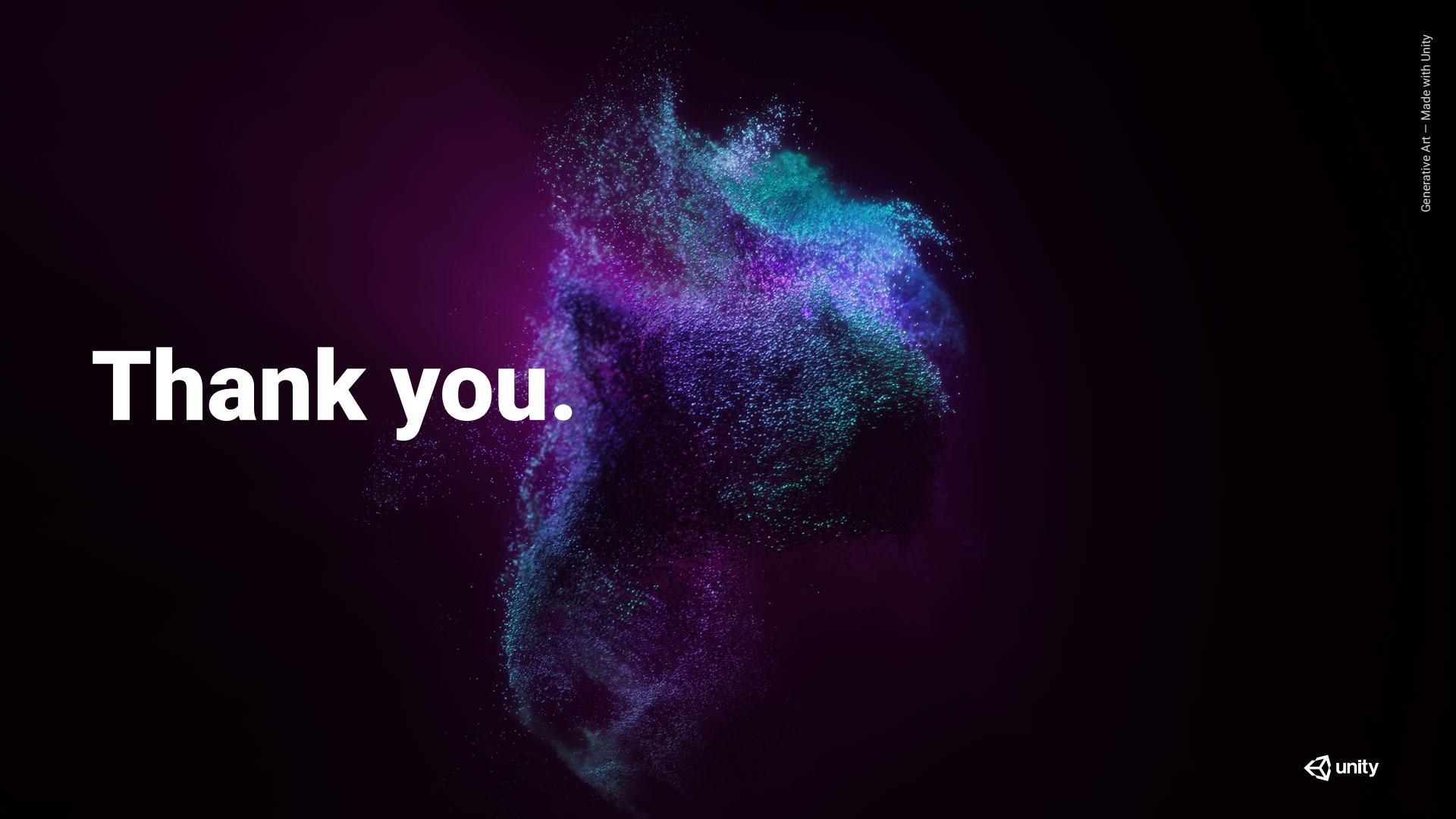
Activity 1 Goals



1. **Sign up for Session 2 Office Hours**

1. **Complete a simple Solar System Sandbox Application**
    a. Ensure all planets are a reasonable size and have a Grab Interactable components
    b. Experiment with different parameters for your Grab Interactables
    c. Build your project

Feel free to ask questions!


Thank you.
Generative Art — Made with Unity
unity