Virtual Reality Engine Unity3D Hands On

EPFL Immersive Interaction Group

Thibault Porssut

Dr. Ronan BOULIC

Outline

Hands on part:

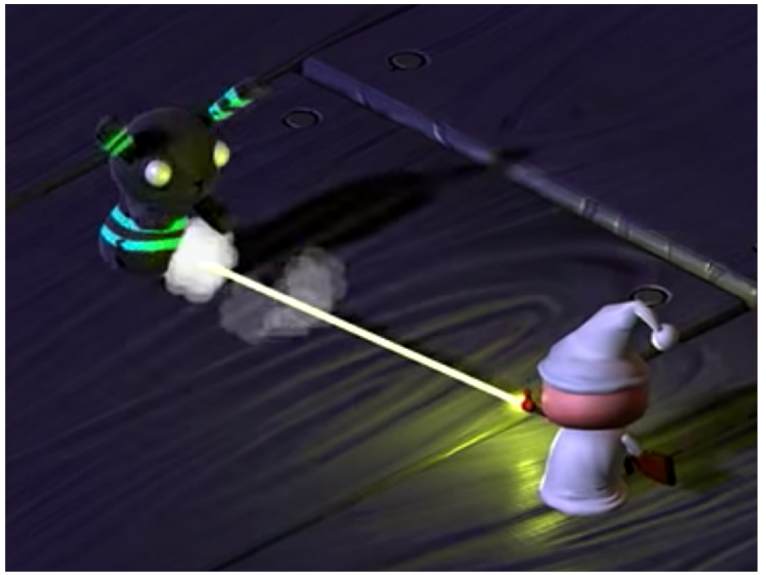
- Hands on planning
- TP1: Unity Game Base
- TP2: Unity Package VRTK
- TP3: Oculus Go
- TP4: Discovery of Devices
- Install the Last Unity Version
- First Hands on with Unity

Hands on planning

Week	Group 1 (11h15-13h)	Group 2 (11h15-13h)
5	TP1: Unity Game Base	TP2: Unity Package VRTK
6	TP2: Unity Package VRTK	TP1: Unity Game Base
7	TP3: Oculus Go	TP4: Discovery of Devices
8	TP4: Discovery of Devices	TP3: Oculus Go

Topic 1 (2h) : Unity Game Base

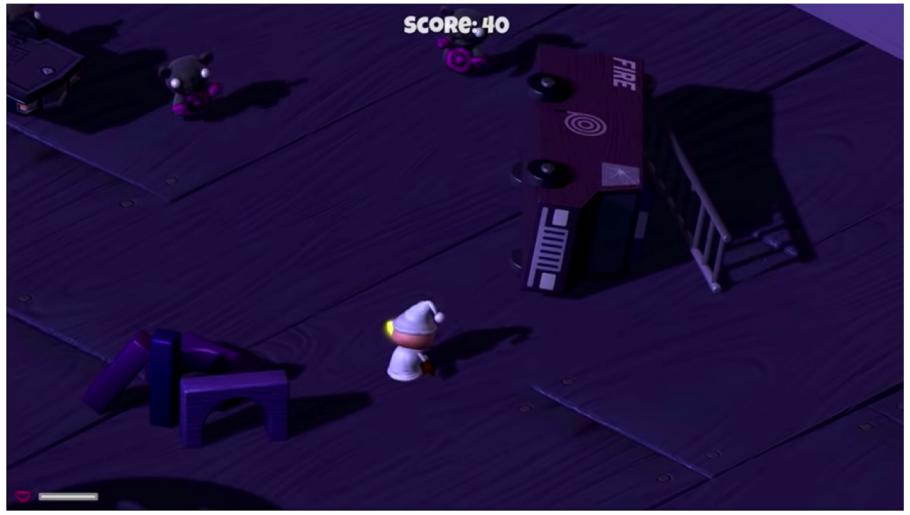
- 2 groups
- Laptop
- Unity3D platform
- Animation/Navigation/Sound
- Scripting (C#)
- Goal: Make your first 3D game with Unity
- https://unity3d.com/pt/learn/tutorials/s/survival-shooter-tutorial



Topic 1: Unity Game Base

Goal:

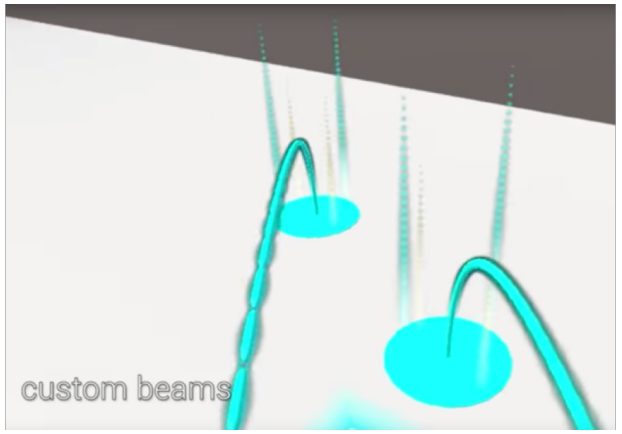
- Discover the main modules of Unity (Sound Mixer, Animator, Particle effect, UI..)
- First Scripting Approach (C#)
- Organize a full project
- Make your first full 3D Game



Topic 2 (2h): Unity Package VRTK

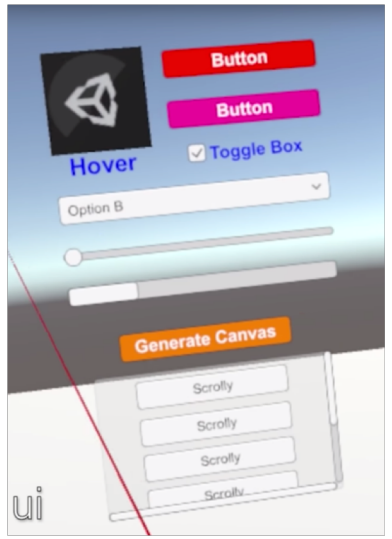
- 2 groups
- 4*HMD (HTC-Vive/Oculus Rift) + Desktop
- Unity 3D
- Virtual Reality Application
- Interaction/Locomotion
- Scripting (C#)
- Goal: First use of VR devices with Unity.
- https://vrtoolkit.readme.io/docs

Topic 2: VRTK Unity Package



Goal:

- Try a VR headset
- Make your first VR application
- Discover different types of locomotion and interaction design for Virtual Reality.
- Re-use provided assets
- Fast prototype



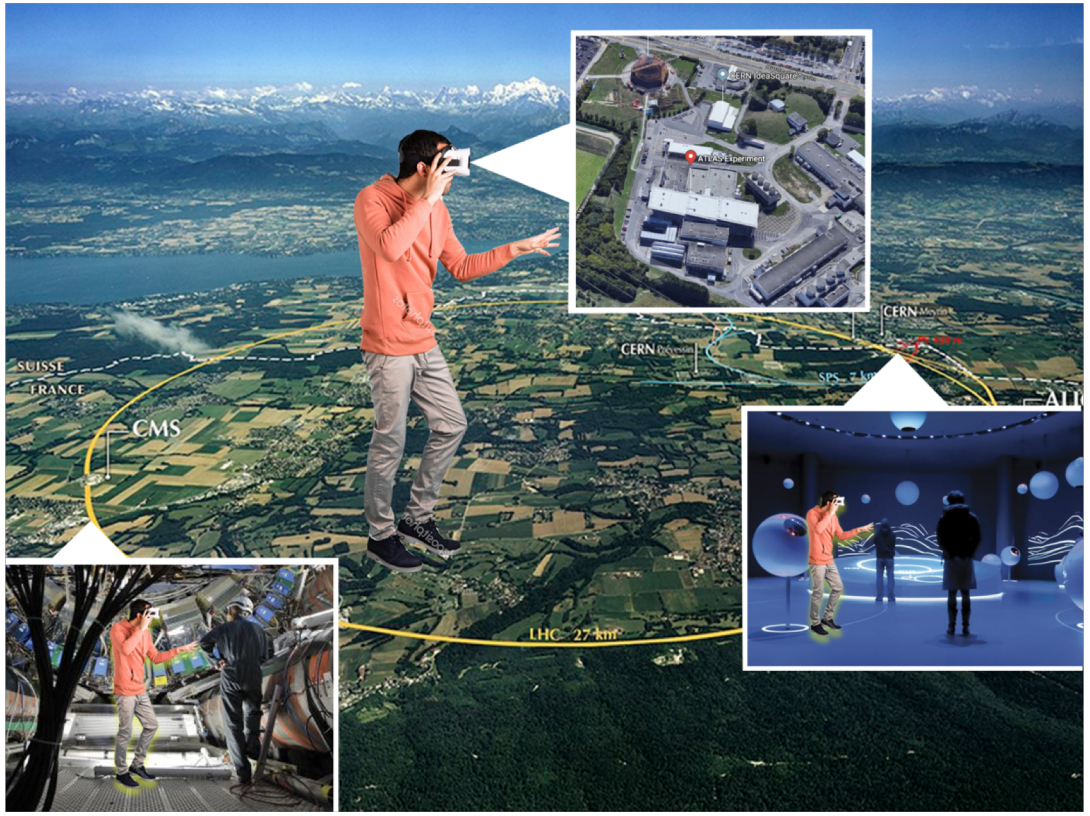
Topic 3 (2h): Oculus Go and GulliVR

- 20 groups (2 people per HMD)
- Using your own laptop (Mac or PC)
- Unity 3D
- Android SDK and Debug Bridge
- Interaction/Controller Settings
- Scripting (C#)
- Goal: Modify, build, and deploy an APK for Oculus Go
- *Build an Oculus Go App from Start to Finish* https://bit.ly/2x93LNr
- GulliVR App - https://bit.ly/2E6LYb0

Topic 3: Oculus Go and GulliVR

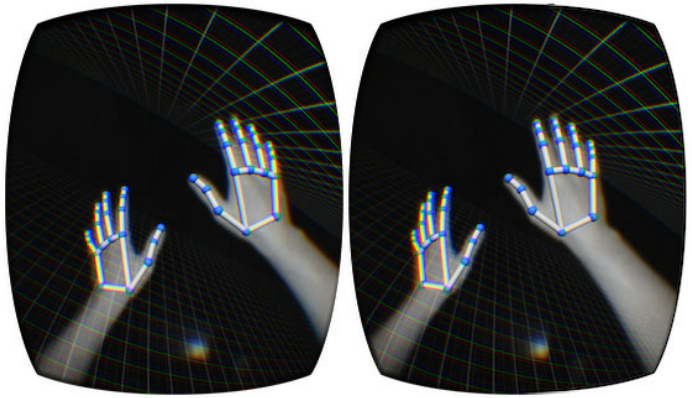
Goal:

- Continue working with different types of locomotion and interaction design for Virtual Reality
- Gain experience with controls of Android Based standalone HMDs (Oculus Go)
- Build and Deploy Android APKs to Oculus Go
- Develop novel navigation technique based on dynamic scaling in the VE (GulliVR)



Topic 4 (2h): Discovery of Devices

- 2 groups
- Leap motion sensor
- Kinect
- Katwalk
- Hololens
- Goal : Discover different technologies (tracking, locomotion, visualization...)



Topic 4: Discovery of Devices

- Goal :
- Discover new technologies (Full Body Tracking, Augmented Reality,…)
- Get ideas for your future project
- Use these new devices in a Unity Project
- Example of Unity integration

Install the Last Unity Version

- Link to download :

https://store.unity.com/fr/?_ga=2.187361902.794958388.1519564968-856357652.1519564968

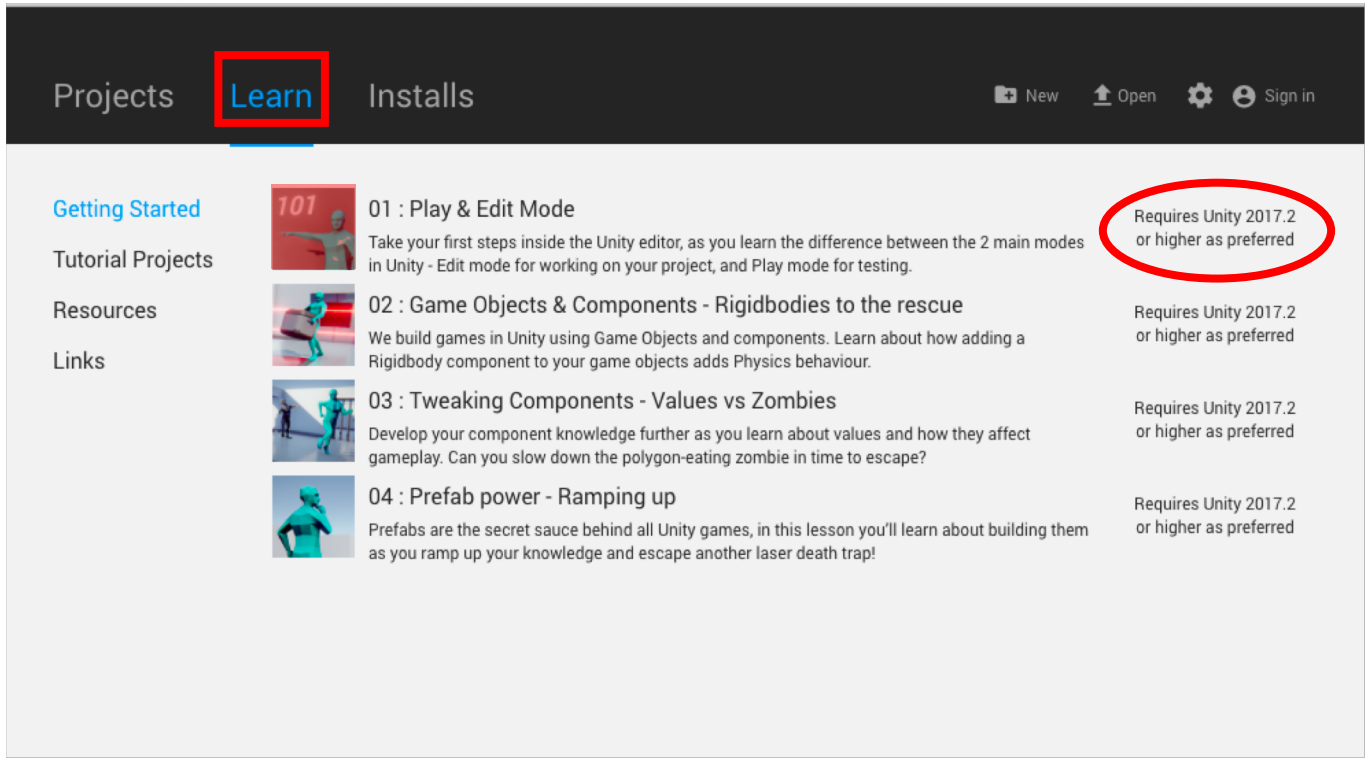
Different use means different plans but one application:

- Personal License: Annual revenue or funds raised of $100k or less.
- Plus: Annual revenue or funds raised of $200k or less.
- Pro: No limits on revenue or funding.

=>Choose Personal License

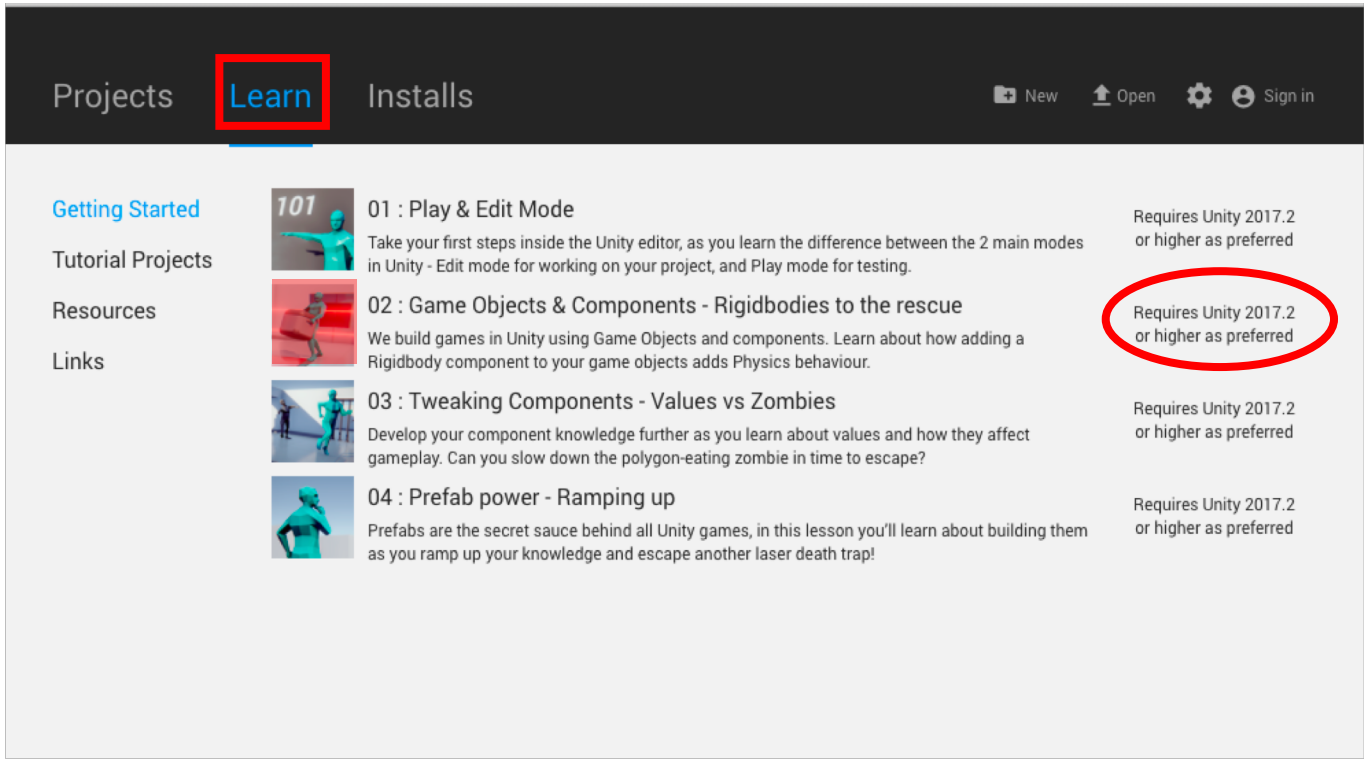
First Hands on with Unity

- 1: Play & Edit Mode



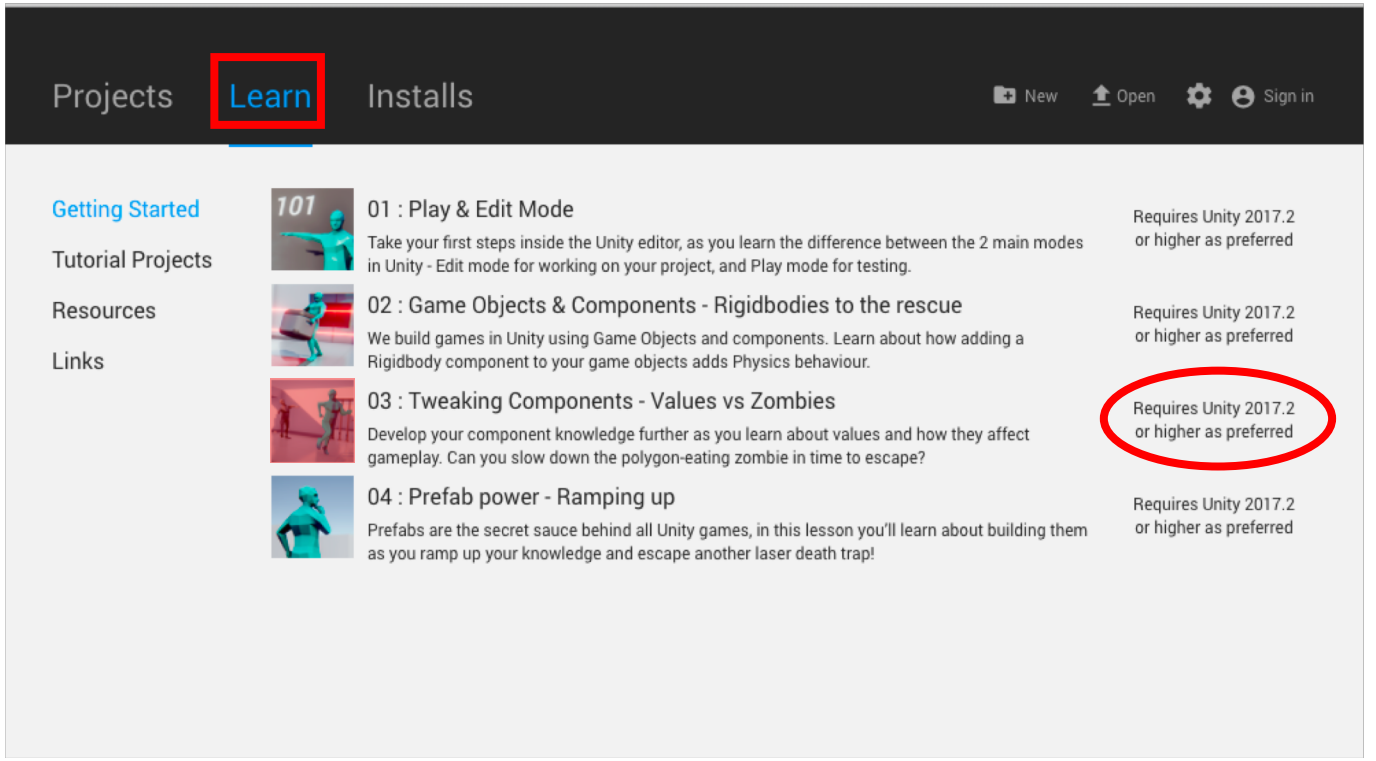
First Hands on with Unity

- 2: Game Objects & Components - Rigidbodies to the rescue



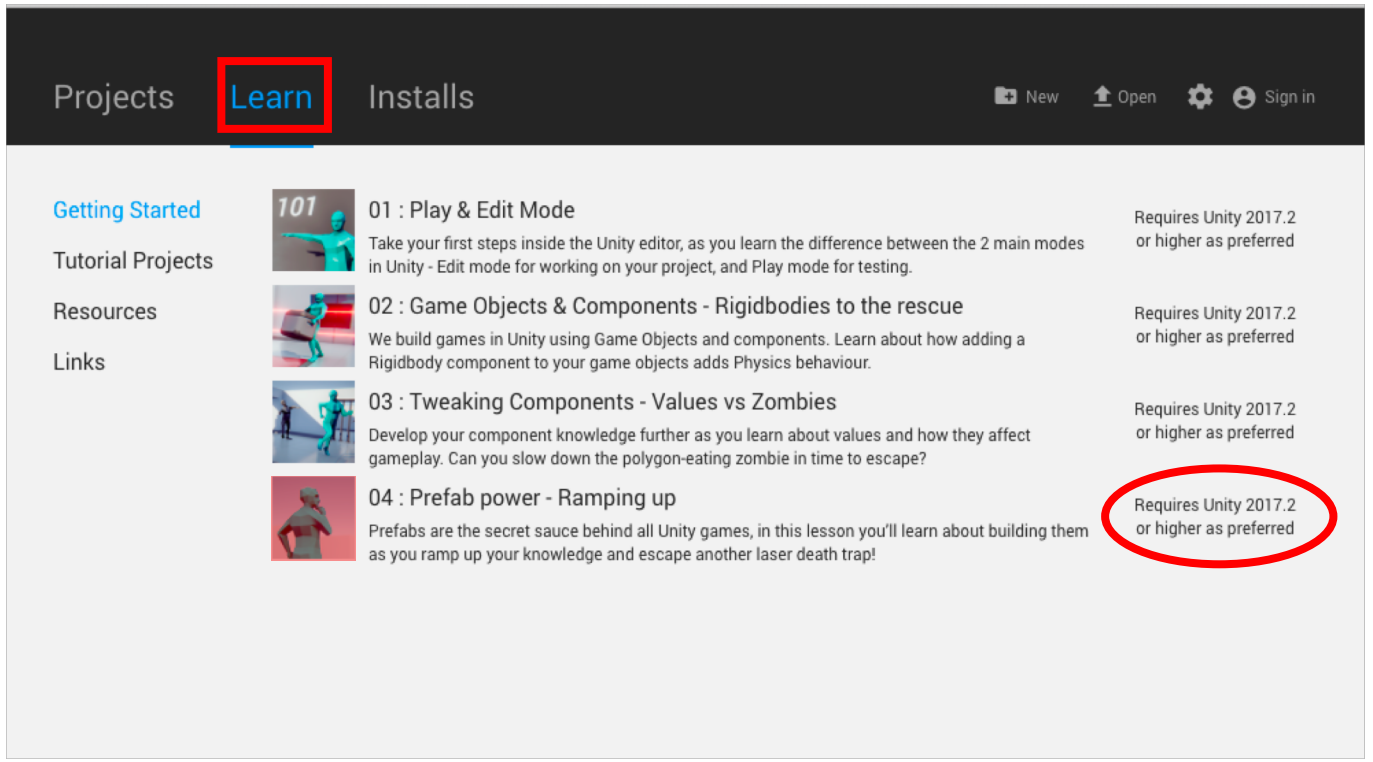
First Hands on with Unity

- 3: Tweaking Components – Values vs Zombies



First Hands on with Unity

- 4: Prefab power – Ramping up



Questions?