Virtual Reality Engine
Unity3D Hands On

EPFL Immersive Interaction Group
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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

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<th>Week</th>
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<th>Group 2 (11h15-13h)</th>
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<td>TP2: Unity Package VRTK</td>
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Topic 1 (2h) : Unity Game Base

- 2 groups
- Laptop
- Unity3D platform
- Animation/Navigation/Sound
- Scripting (C#)
- Goal: Make your first 3D game with Unity
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...)

![Image of VR environment](image.jpg)
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.

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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?