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Aalto University
School of Arts, Design
and Architecture

Coding Virtual Worlds Architecture

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Today's outline

- **Discover VR**
- **Unity Project Architecture**
- **Code Review**

The background is a dark space filled with a glowing yellow grid of lines, creating a perspective that leads towards a central, brightly lit doorway. The doorway has a white frame and a red light strip above it. Inside the doorway, a futuristic interior is visible with various panels and lights.

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Discover VR

Discover VR

Storytelling - Home After War, Notes on Blindness, Travelling While Black

- **Overview Impressions - How was the experience?**
- **Storytelling**
 - **How is the layout of the story? Linear or distributed?**
 - **What is the point of view?**
 - **How was VR used? What's special compared to other mediums?**
 - **What kind of interactivity was there?**
- **... break out and make a few notes together?**

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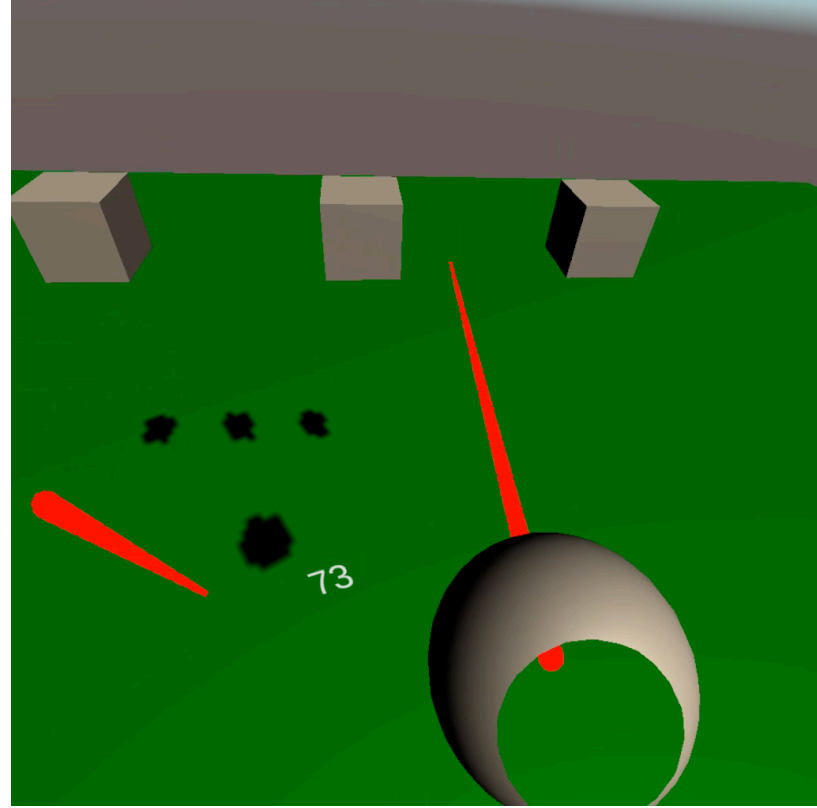
Architecture

The image depicts a futuristic architectural space. The walls and floor are covered in a glowing yellow grid pattern, creating a sense of depth and perspective. In the center, there is a brightly lit doorway or entrance, framed by a white, rounded archway. The interior of the doorway is illuminated, showing a clean, modern design with a white wall and a dark floor. The overall atmosphere is one of high-tech, minimalist architecture.

Debugging in VR

In-Game Debug Console

- **Get Asset**
- **Change to World Space and Main Camera**
- **Add Tracked Device Graphic Raycaster**
- **Order in Layer = 0**



Architecture

ScriptableObjects

Like a simple MonoBehaviour

- **Avoid direct dependency**
- **States between scenes**
- **Self-contained Prefabs**
- **One object, one task -> clean code**

Game Architecture with Scriptable Objects

Architecture


Small Game with Events

- **UnityEvent**

- **Weapon Hit to Score**
 - **Make Weapon with Collider + Trigger + Rigidbody**
 - **Make Targets with Collider**

Architecture Scriptable Objects

Three ways to architect your game with ScriptableObjects

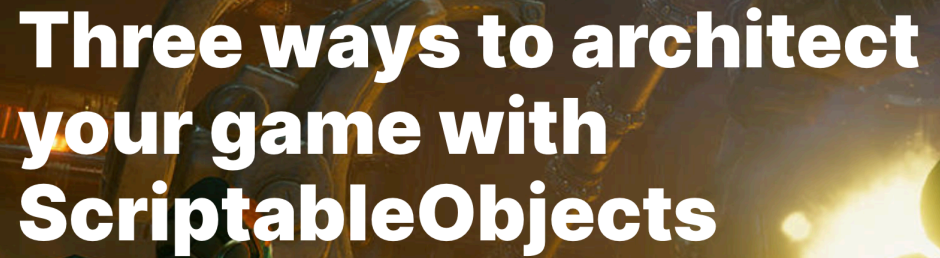


- Share data across modules
- For example a *score*
 - Show in UI
 - Show in Light
 - [CreateAssetMenu]

Architecture

Events Architectures

- **UnityEvent**
- **ScriptableObject**




Three ways to architect your game with ScriptableObjects

- **Make GameEvent**
 - **public delegate void Event();**
 - **Public event Event OnEvent;**
 - **Public void TriggerEvent();**
- **Make GameEventListener**

Architecture

Debug Events

- **Make Event GUI**
- **Create Editor in Editor Folder**
 - **Connect “[CustomEditor(typeof(GameEvent))]”**
 - **Inherit from Editor**
 - **override OnInspectorGUI()**
 - **Cast target object**
 - **GUILayout.Button(“hit”)**
 - **Call function**



**Three ways to architect
your game with
ScriptableObjects**

Architecture

Input Manager

- **Scriptable objects to connect controllers**
- **Input Handler**
- **Button Handler**
- **Axis Handler 2D**
- **Input Manager**
- **Example Listener**





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Next Assignment

Assignment 5 - Iteration 1

Task:

- Have a rough but running submission for the final project

Deliverables:

- APK
- Add a comment on the current state