



- DESAFIOS DE UM DESENVOLVEDOR QUE NUNCA PROGRAMOU PARA UM AMBIENTE DE REALIDADE VIRTUAL



Hello!

**FERNANDO FERNANDES**

Engenheiro de Software CIn/Samsung.  
Atualmente trabalhando na equipe de VR.

## ● FALANDO UM POUCO DO MEU CONTEXTO COMO DEV

- Tenho mais de 7 anos na área de desenvolvimento de software.
- Já trabalhei com diversos tipos de aplicações. (Web, mobile, desktop)
- Já trabalhei com diversos tipos de linguagens. (Java, C#, C++, JS, Android...)
- Nunca trabalhei nem estudei nada sobre realidade virtual.



## ● FALANDO UM POUCO DO MEU PRIMEIRO PROJETO VR

- Projeto simples.
- Feito em Unity.
- Escolhemos usar C# para script.
- Uma única cena.
- App exportado para UWP (Universal Windows Platform).
- App feito para rodar no HMD Samsung Odyssey.
- Equipe inexperiente em VR.



# COMEÇANDO NO MUNDO VR

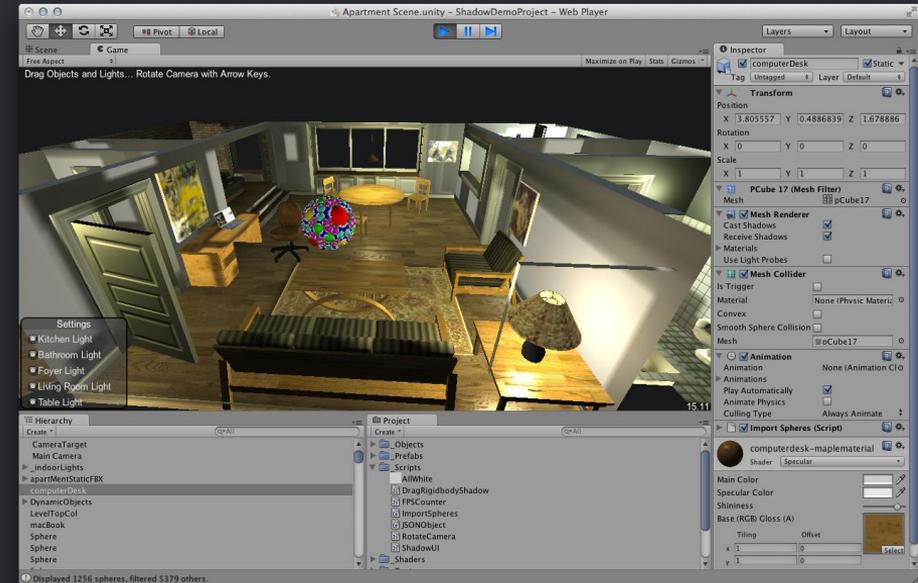
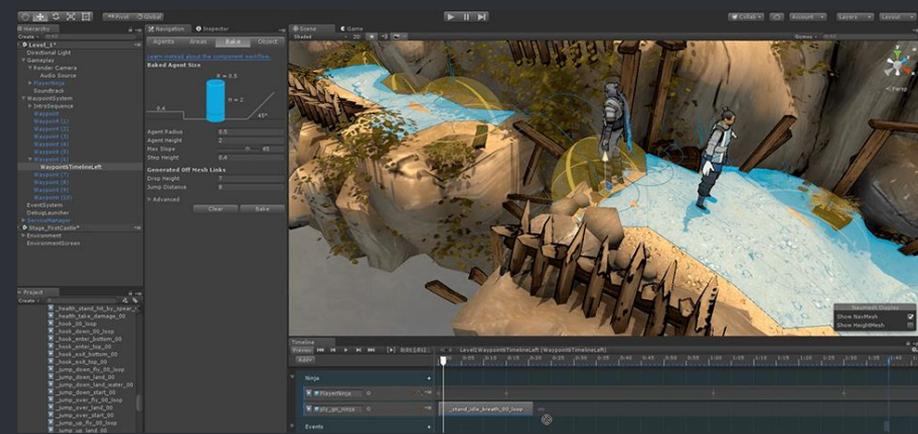
O que foi de novo pra mim no meu projeto VR imersivo

# SCENE

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Som espacial

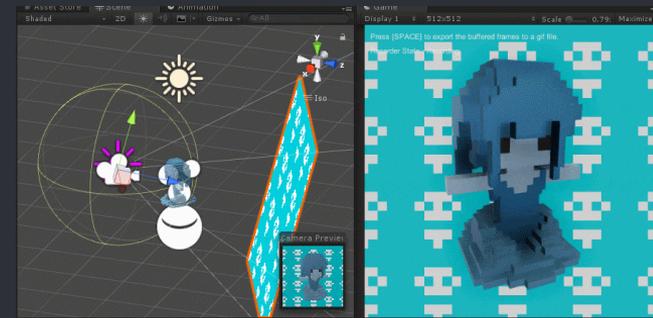
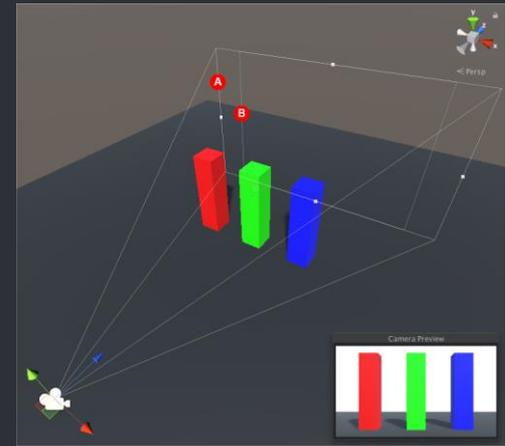
Nav mesh  
Malha de navegação

Física  
Gravidade  
Colisões físicas



## CAMERA

- É o dispositivo do qual o player vê o mundo.
- Não se deve mover a camera.
- Movimentação feita pela cabeça do usuário, através do HMD.
- Altura da camera é definida pela altura do usuário (Via sensores do HMD).



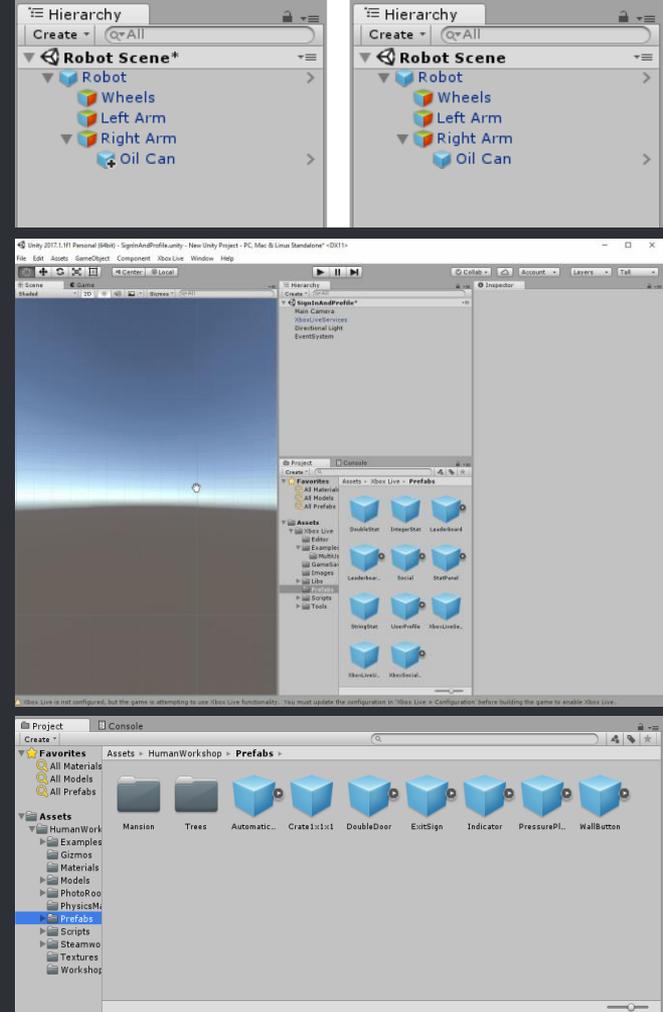
## PREFAB

Fazendo uma analogia, prefabs são controles customizados.

São objetos complexos, normalmente um conjunto de vários outros objetos.

Prefabs são uteis para compartilhar elementos iguais entre diversas scenes.

Muito utilizado nos projetos VR.

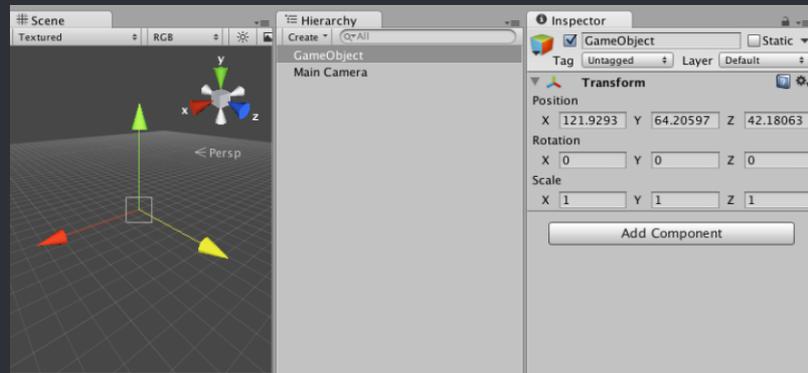


## GAME OBJECT

São apenas containers, caixas vazias onde você pode adicionar diversos Componentes.

GameObject é a base de todos os objetos em uma Scene.

Um GameObject sempre tem um componente Transform conectado (para representar posição e orientação)





# DIFICULDADES

Encontradas no meu primeiro projeto VR

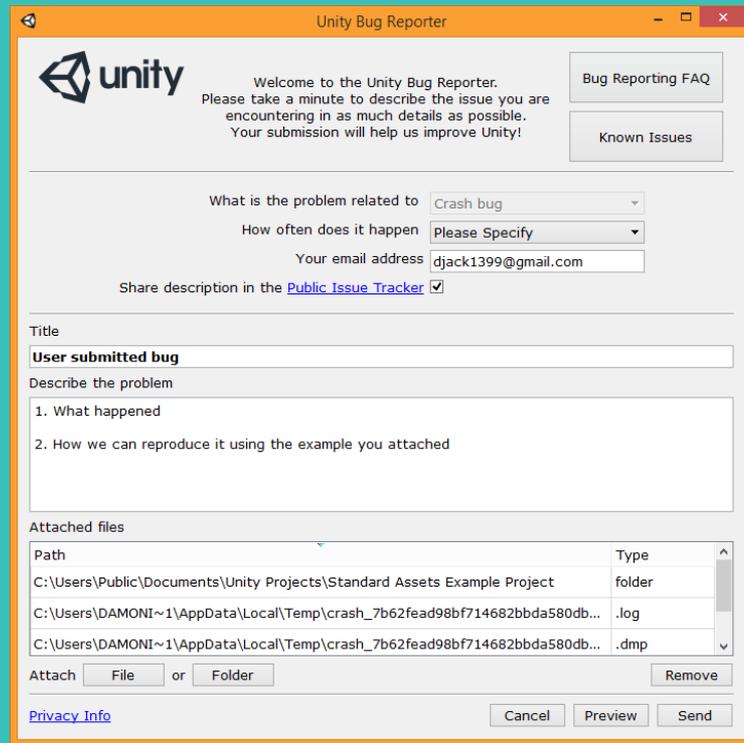
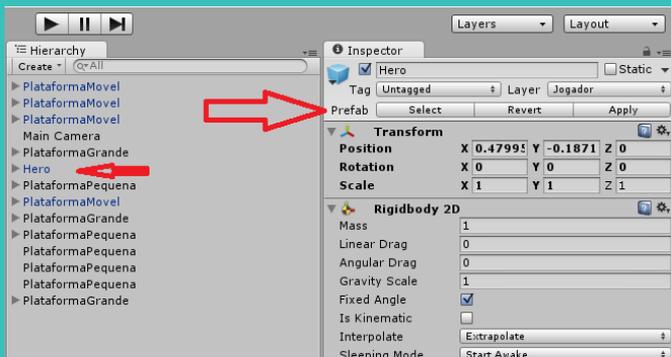
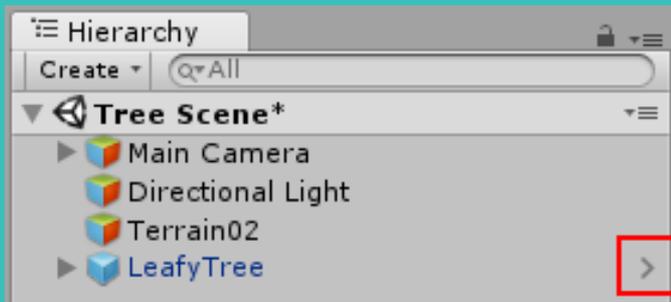
# MERGES/CONFLITOS EM CENA

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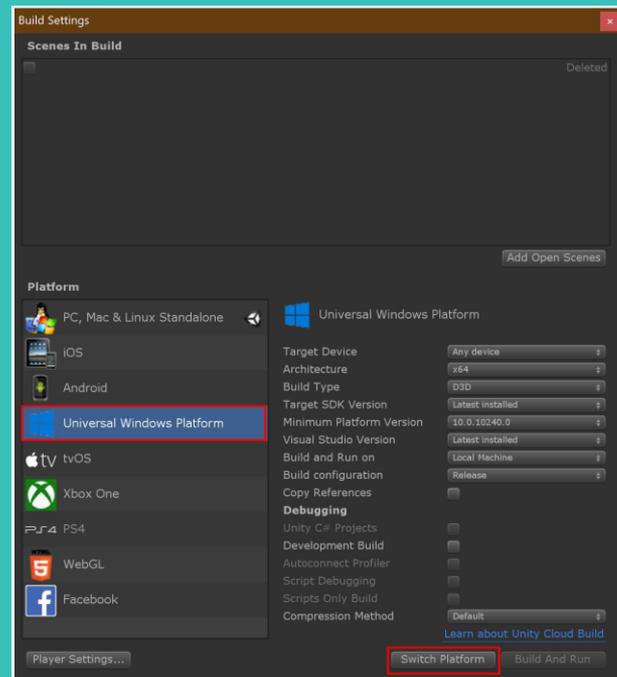
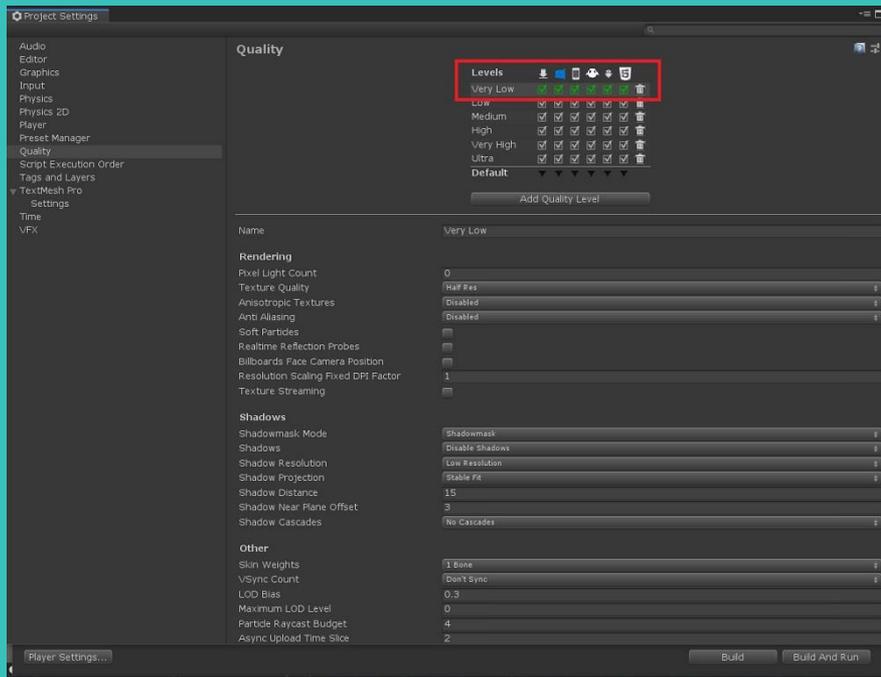
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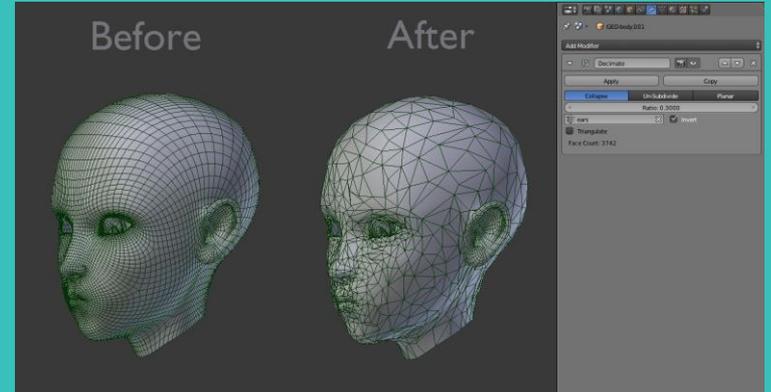
# SALVAR CENA/PREFABS



# CONFIGURAÇÃO DE BUILD



# CARREGAMENTO DE MODELOS NA CENA



# Toolkits



**MRTK**  
MIXED REALITY  
TOOLKIT

### Input System

**Interactable**  
Interactable is a UI component that lets you place events that respond to user actions and then respond to those actions. Interactable is the main interaction system in MRTK.

**Cursor**  
An entity associated with a pointer that can indicate which link should receive interaction.

**Focus**  
A visual element that can be changed to indicate which element is focused.

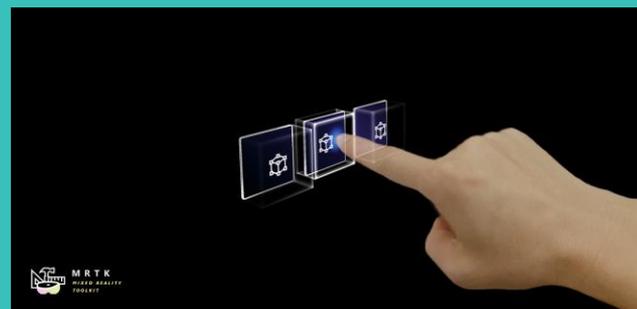
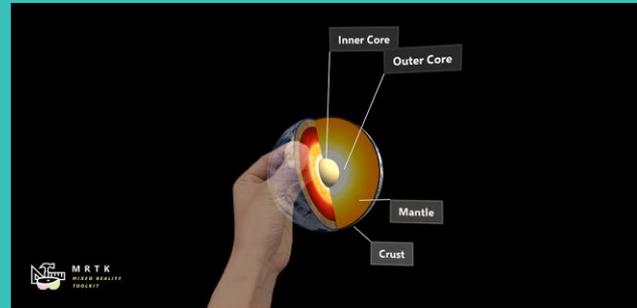
**Pointer**  
An interface element that points to a UI element. It can be used to interact with UI elements.

**Far Pointer**  
A pointer that can interact with UI elements that are far away from the user. It can be used to interact with UI elements that are far away from the user.

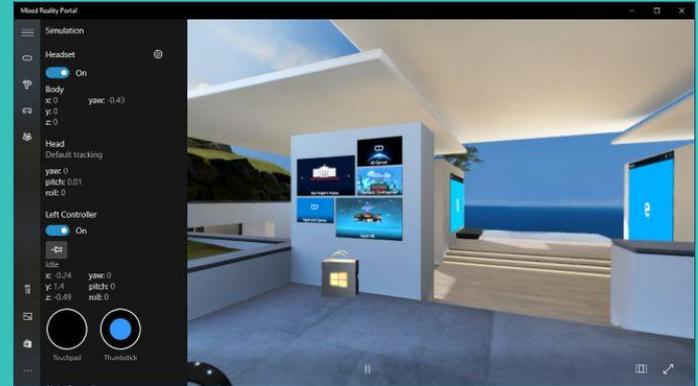
**Near Pointer**  
A pointer that can interact with UI elements that are near the user. It can be used to interact with UI elements that are near the user.

**Controller**  
A representation of a controller. Controllers are returned by DeviceManager. For example, the VR controller manager will return a controller and manager for the VR controller if one is available. You can use the controller to interact with UI elements.

**Device Manager (Base Provider)**  
A class that manages the state of the devices. It is responsible for detecting, tracking, and managing the state of the devices.



## TESTAR EM HMD/SIMULADORES





Obrigado!

DÚVIDAS?

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THE DEVELOPER'S  
CONFERENCE