NÚCLEO DE COMPUTAÇÃO GRÁFICA E MULTIMÉDIA

INTRODUCTION TO

Pedro Esteves e Ricardo Brioso

Software

- Unity Editor
- **IDE** - Visual Studio, MonoDevelop, ...

- **Image editors** - PhotoShop, Illustrator, Gimp, Inkscape, ...
- **DAW** - Reaper, Audacity, ...
- **3D Modelling Software** - Blender, 3ds Max, Maya, ...

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THE UNITY ENVIRONMENT

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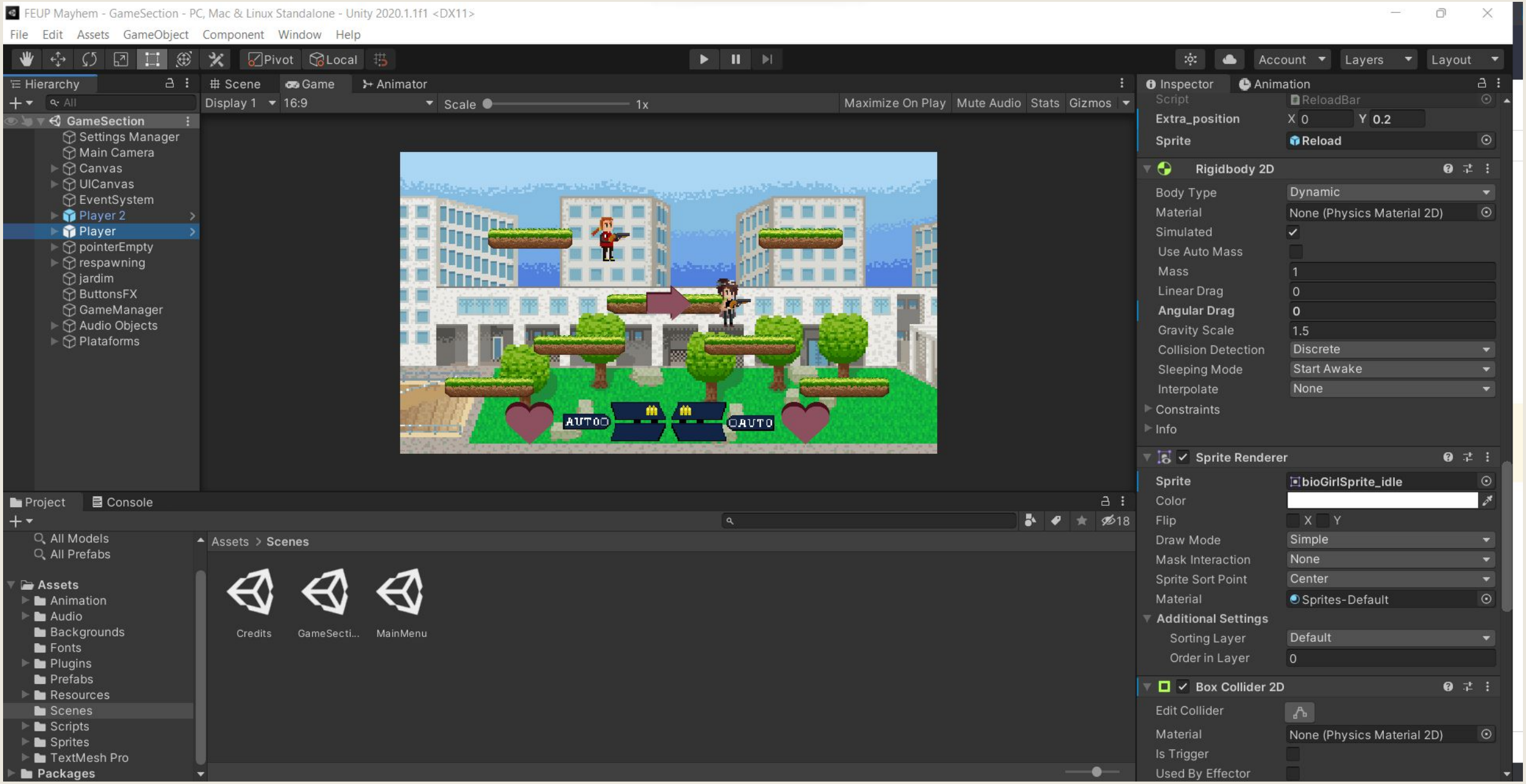
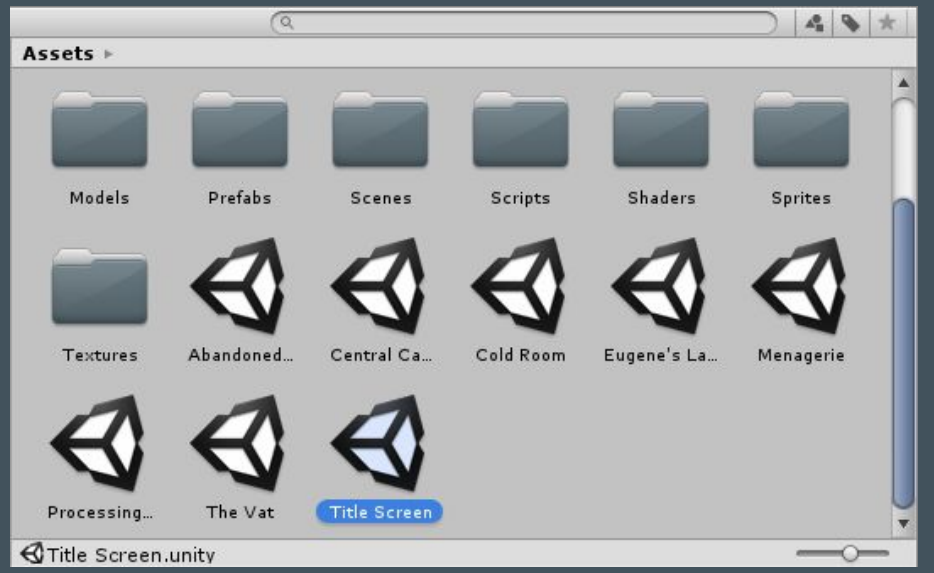

FEUP Mayhem - GameSection - PC, Mac & Linux Standalone - Unity 2020.1.1f1 <DX11>
File Edit Assets GameObject Component Window Help
Pivot Local
Account Layers Layout
Hierarchy
GameSection
Settings Manager
Main Camera
Canvas
UICanvas
EventSystem
Player 2
Player
pointerEmpty
respawning
jardim
ButtonsFX
GameManager
Audio Objects
Plataforms
Scene Game Animator
Display 1 16:9 Scale 1x Maximize On Play Mute Audio Stats Gizmos
AUTO
AUTO
Inspector Animation
Script ReloadBar
Extra_position X 0 Y 0.2
Sprite Reload
Rigidbody 2D
Body Type Dynamic
Material None (Physics Material 2D)
Simulated
Use Auto Mass
Mass 1
Linear Drag 0
Angular Drag 0
Gravity Scale 1.5
Collision Detection Discrete
Sleeping Mode Start Awake
Interpolate None
Constraints
Info
Sprite Renderer
Sprite bioGirlSprite_idle
Color
Flip X Y
Draw Mode Simple
Mask Interaction None
Sprite Sort Point Center
Material Sprites-Default
Additional Settings
Sorting Layer Default
Order in Layer 0
Box Collider 2D
Edit Collider
Material None (Physics Material 2D)
Is Trigger
Used By Effector
Project Console
All Models
All Prefabs
Assets
Animation
Audio
Backgrounds
Fonts
Plugins
Prefabs
Resources
Scenes
Scripts
Sprites
TextMesh Pro
Packages
Assets > Scenes
Credits
GameSecti...
MainMenu

Scenes

https://docs.unity3d.com/Manual/CreatingScenes.html

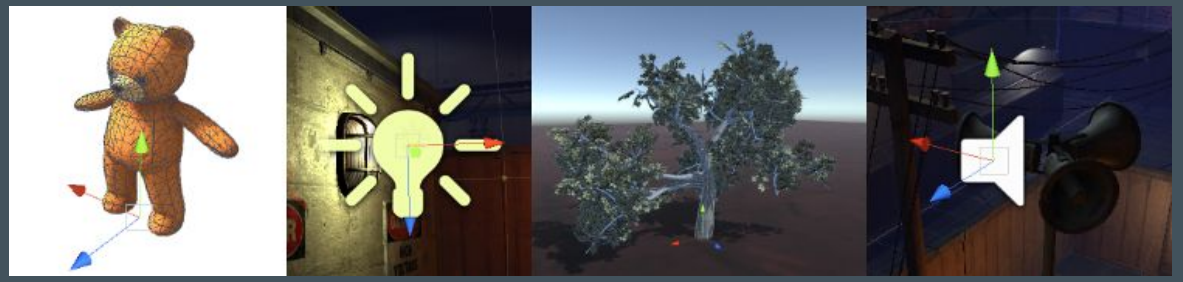
- Place where you place your environments, objects and decorations, i.e., where you build your game
- Each scene is like a unique level



Gameobjects

https://docs.unity3d.com/Manual/GameObjects.html

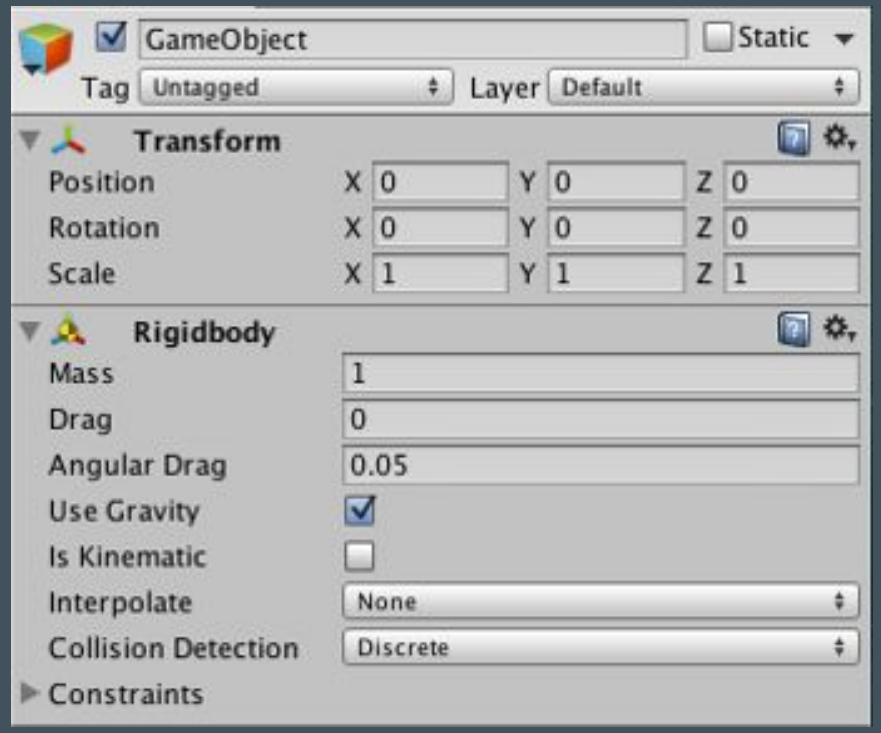
- **Basic building block** - everything in your game is a Game Object
- Behaviour and characteristics are determined by their **components**
- Depending on what kind of object you want to build, you add different combinations of components

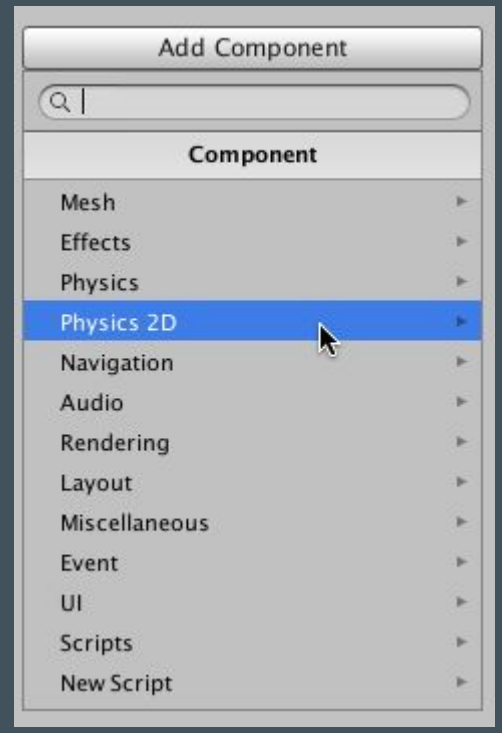


Components

https://docs.unity3d.com/Manual/UsingComponents.html

- Transform
- Rigidbody
- Colliders
- Sprite renderer
- Audio source
- Scripts
- (...)

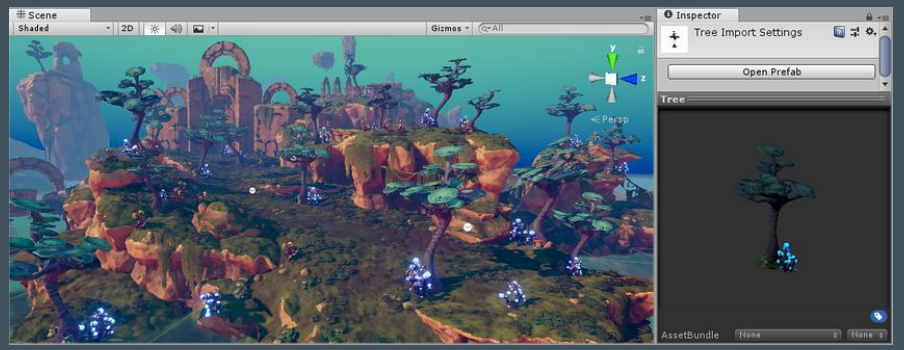




Prefabs

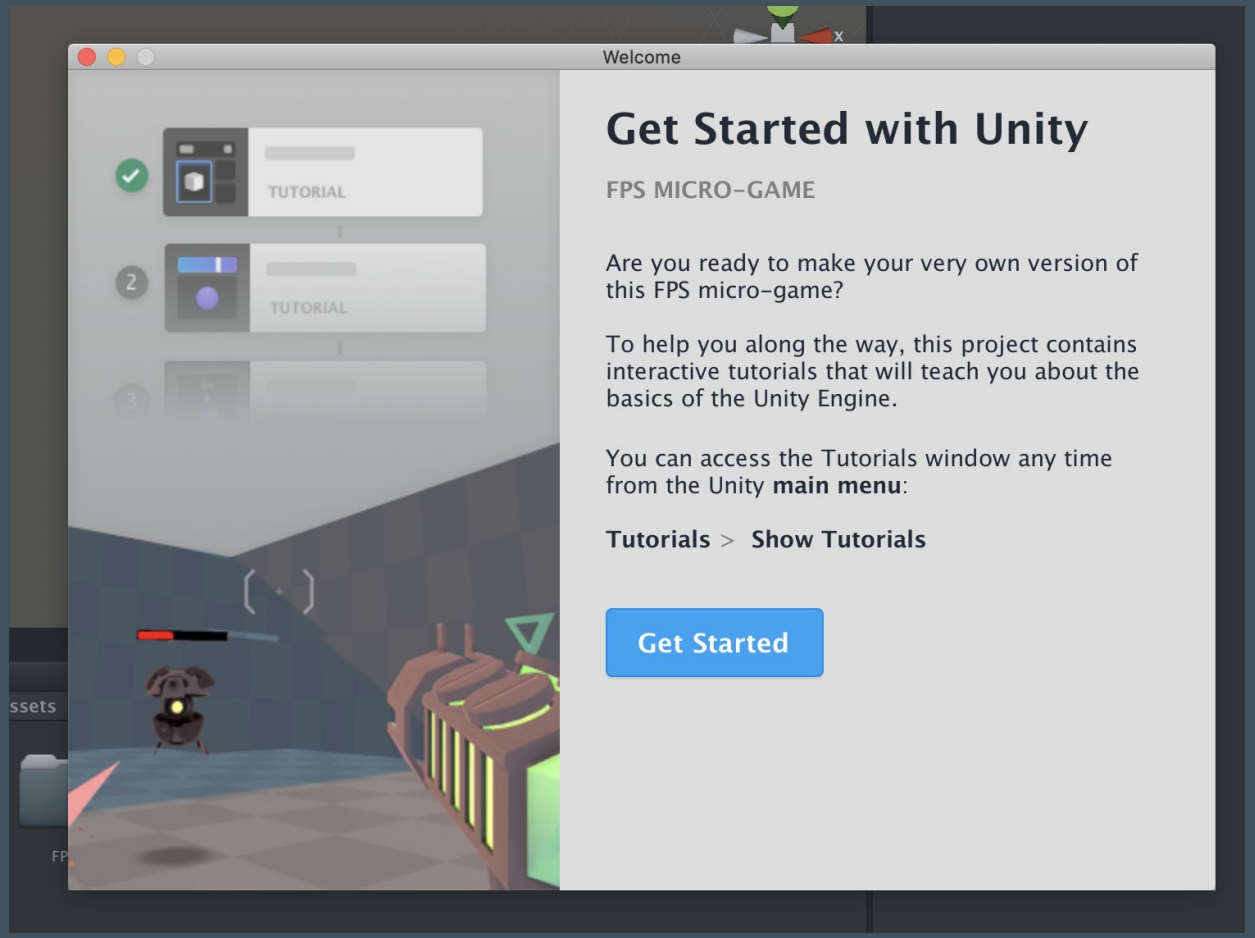
https://docs.unity3d.com/Manual/Prefabs.html

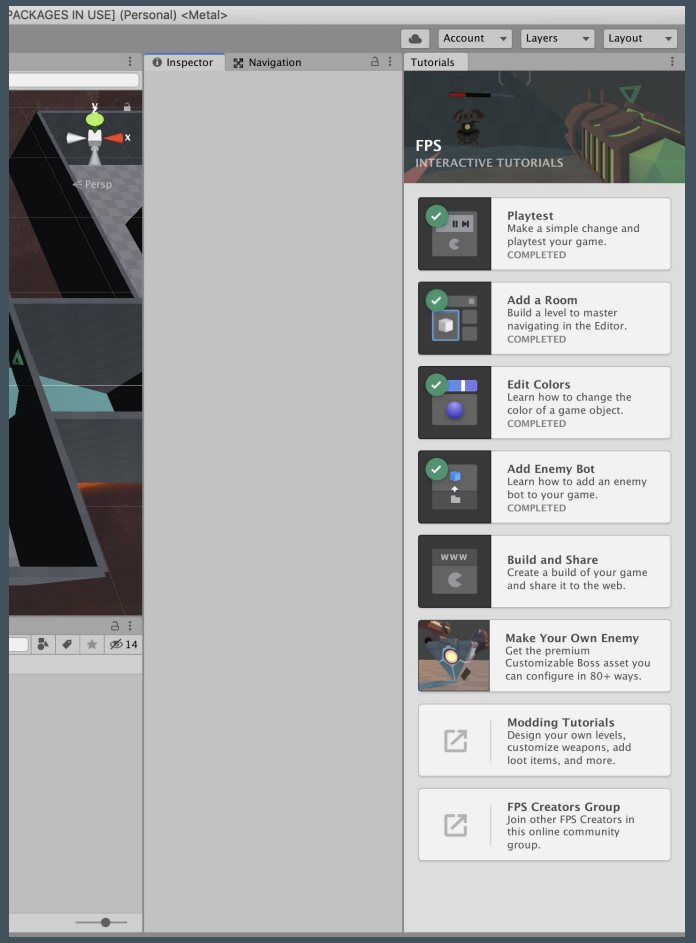
- Unity allows to **store a complete object with components and properties** as a **Prefab**
- Useful whenever you need to **reuse the same gameobject**
- Acts as a **template**
- Changes made to a prefab reflect on all its instances
- You can, however, override components and settings individually



In-editor tutorials

https://learn.unity.com/tutorial/beginner-walkthroughs





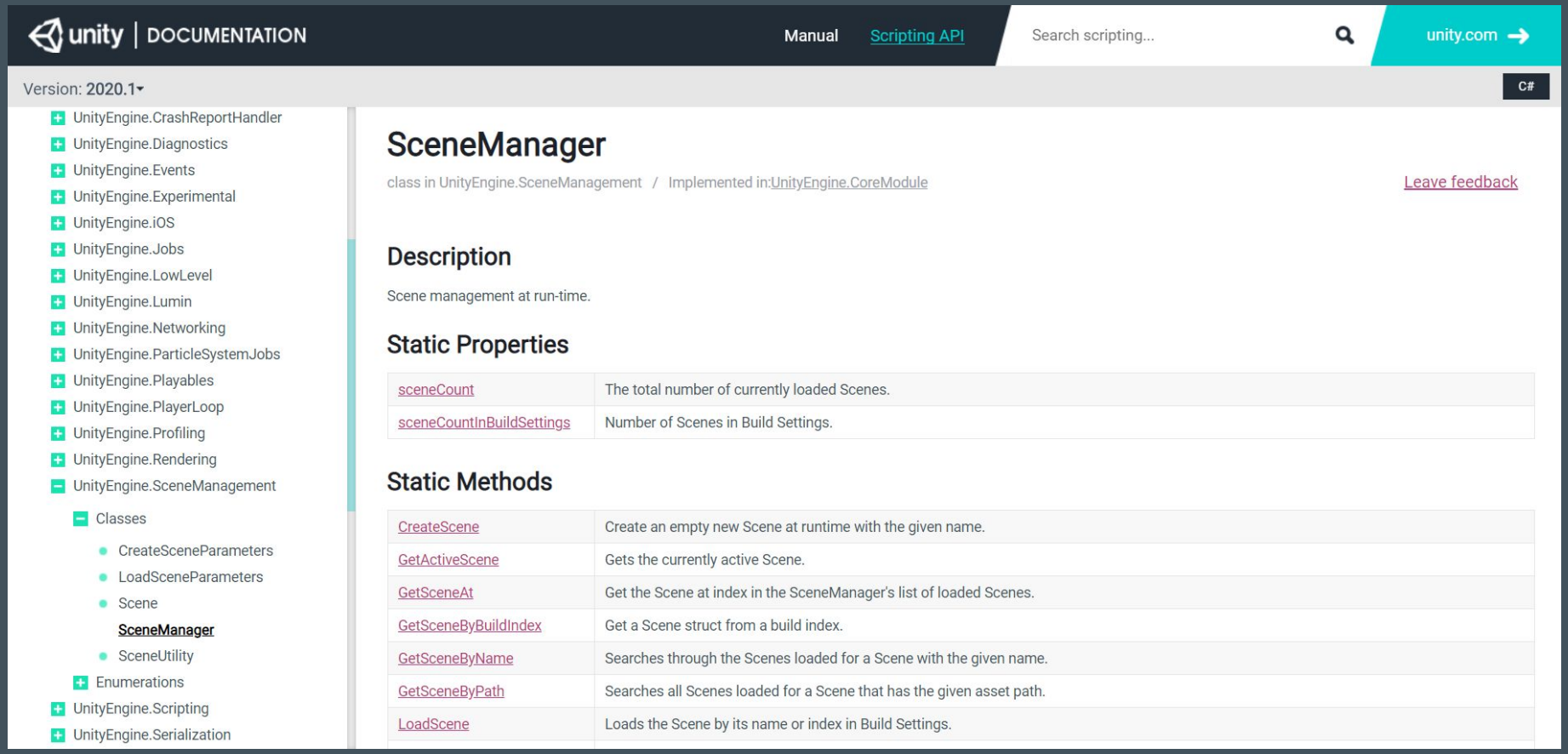
Programming

https://unity3d.com/learning-c-sharp-in-unity-for-beginners

- Tells gameobjects how to behave and interact with each other
- C# (Unity supports javascript but is discontinued)
- A game is created by combining scripts with gameobjects and their components
- Unity runs all scripts in a loop, frame by frame
- Scripts must be instantiated in the scene
- By default, scripts are created as classes
- Filename must match class name!

Unity Reference

https://docs.unity3d.com/ScriptReference/



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Credits for the Game Assets:

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Maria Cunha

Pedro Claro

Tomás Moreira

Pedro Esteves e Ricardo Brioso

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NOW, LET'S MAKE A GAME

Pedro Esteves e Ricardo Brioso