

## Sci Fi Top Down Game Template – HELP FILE

Hi, here's where all the help will be updated for each version.

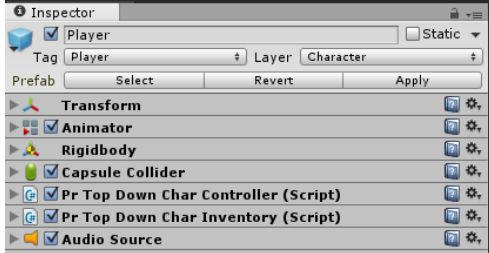
FORUM THREAD: <https://forum.unity.com/threads/sci-fi-top-down-game-template-polygonr.527580/>

VIDEO TUTORIALS: [https://www.youtube.com/watch?v=x9kV3PUhI3c&index=3&list=PLWyXZmuR5-0kL\\_IWITWpSK8w52LTCoi92](https://www.youtube.com/watch?v=x9kV3PUhI3c&index=3&list=PLWyXZmuR5-0kL_IWITWpSK8w52LTCoi92)

**Scripts reference (These images are a basic guide. I strongly recommend you to check the video tutorials for better understanding of all the features of the template):**

Player Setup:

### PolygonR Player Basic Setup

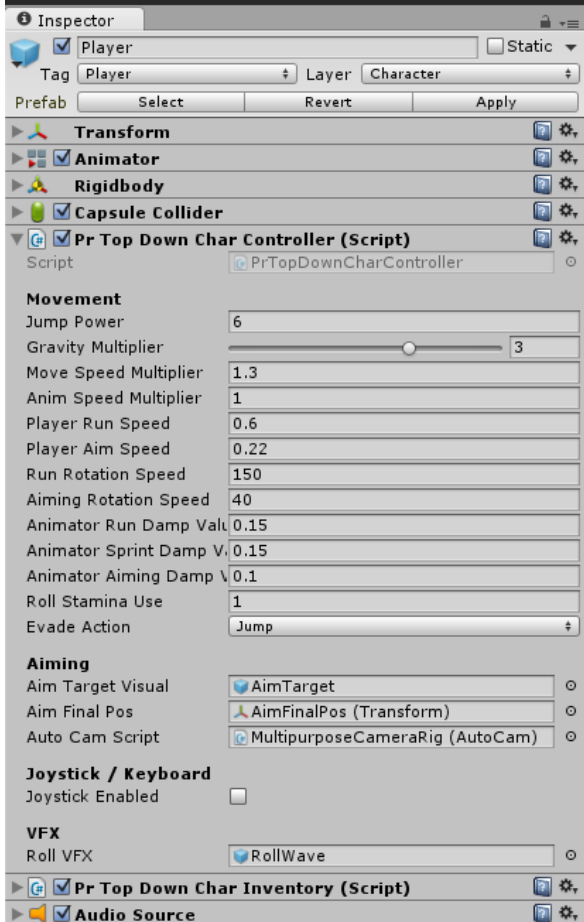


Inspector

Tag: Player Layer: Character

Needs a "ANIMATOR" Component  
Needs a "Rigidbody" Component  
Needs a Capsule Collider  
Needs Char Controller Script  
Needs Char Inventory Script  
Needs AudioSource

### PolygonR Player Controller Setup



Inspector

Tag: Player Layer: Character

Script: PrTopDownCharController

**Movement**

Jump Power: 6  
Gravity Multiplier: 3  
Move Speed Multiplier: 1.3  
Anim Speed Multiplier: 1  
Player Run Speed: 0.6  
Player Aim Speed: 0.22  
Run Rotation Speed: 150  
Aiming Rotation Speed: 40  
Animator Run Damp Value: 0.15  
Animator Sprint Damp Value: 0.15  
Animator Aiming Damp Value: 0.1  
Roll Stamina Use: 1  
Evade Action: Jump

**Aiming**

Aim Target Visual: AimTarget  
Aim Final Pos: AimFinalPos (Transform)  
Auto Cam Script: MultipurposeCameraRig (AutoCam)

**Joystick / Keyboard**

Joystick Enabled: ☐

**VFX**

Roll VFX: RollWave

Pr Top Down Char Inventory (Script)  
Audio Source

Set Jump Power  
Set Gravity Power  
Set standard Move speed  
Set General Animation Speed Factor  
Set RUNNING movement Speed FACTOR  
Set AIMING movement Speed FACTOR  
Set RUNNING Rotation SPEED  
Set AIMING Rotation SPEED  
Animator Interpolation speed value  
Animator SPRINT Interpolation speed value  
Animator AIMING Interpolation speed value  
Set Roll Stamina cost value  
Select between JUMPING or ROLLING for your character

Set Aim Target object (Using mouse, you aim to this Visual target)  
Set Aim Final Pos target (a child transform to set final shoot target)  
Select CameraRig Script to communicate player moves and Aiming

Switch between Joystick or Keyboard (you can use "K" key in game)

Evade (Jump or Roll) VFX particles

# PolygonR Player Inventory Setup

Inspector

Player

Static

Tag

Player

Layer

Character

Prefab

Select

Revert

Apply

Transform

Animator

Rigidbody

Capsule Collider

Pr Top Down Char Inventory (Script)

Script

PrTopDownCharInventory

Stats

Health

100

Stamina

3

Stamina Recover Speed

0.5

Stamina Recover Limit

0.5

Destroy On Dead

☐

Weapon

Size

2

Element 0

Weapon\_Rifle\_1

Element 1

Weapon\_Pistol\_1

Weapon List

Size

4

Element 0

Weapon\_Rifle\_1

Element 1

Weapon\_Pistol\_1

Element 2

Weapon\_Shotgun\_1

Element 3

Weapon\_RocketLauncher\_1

Weapon R

Weapon\_R (Transform)

Weapon L

Bip001 L Hand (Transform)

Grenades Vars

Grenades Prefab

Grenade

Grenades Count

5

VFX

Damage FX

None (Game Object)

Mesh Renderers

Size

3

Element 0

SK\_Soldier\_Head (Skinned Mesh Ren

Element 1

SK\_Soldier\_Legs (Skinned Mesh Renc

Element 2

SK\_Soldier\_Torso (Skinned Mesh Rer

Sound FX

Foot Steps Rate

0.2

Footsteps

Size

4

Element 0

SFX\_Footstep\_1

Element 1

SFX\_Footstep\_2

Element 2

SFX\_Footstep\_3

Element 3

SFX\_Footstep\_4

Use Vars

Use Angle

75

HUD

Compass

Target

Compass Distance

Distance (Text Mesh)

HUD Health Bar

HealthBar

HUD Stamina Bar

StaminaBar

HUD Damage Full Screen

DamageFullScreen

HUD Weapon Picture

WeaponPic

HUD Weapon Bullets

Bullets

HUD Weapon Bullets Bar

BulletsBar

HUD Weapon Clips

Clips

HUD Use Helper

UseHelper

Audio Source

Tag: Player

Layer: Character

Set Character Health

Set Character Stamina (To sprint and evade)

Set Stamina recover speed

Set Stamina Minimum limit

Set If character Is destroyed on death

Starting equiped weapons array (Only supports 2 weapons)

Weapon 1

Weapon 2 (could be empty if you want)

Weapons List (you have to have ALL possible weapons Here for pickup to work properly)

Weapon Grip Right (socket where the weapons will be linked)

Weapon Grip Left (for grenades)

Grenade Prefab

Grenades Quantity

FX to play when receiving damage

All character Renderers

Footsteps time separation

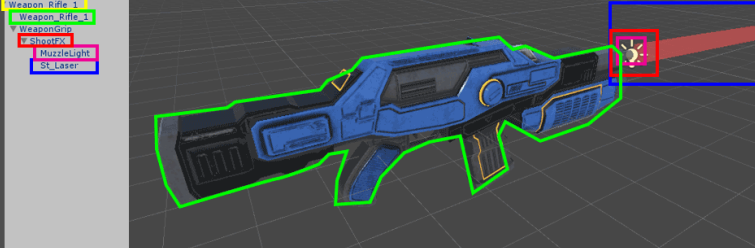
Footsteps sounds randomly selected from this list to avoid repetition

Use facing angle limit (360 degrees it's no limit)

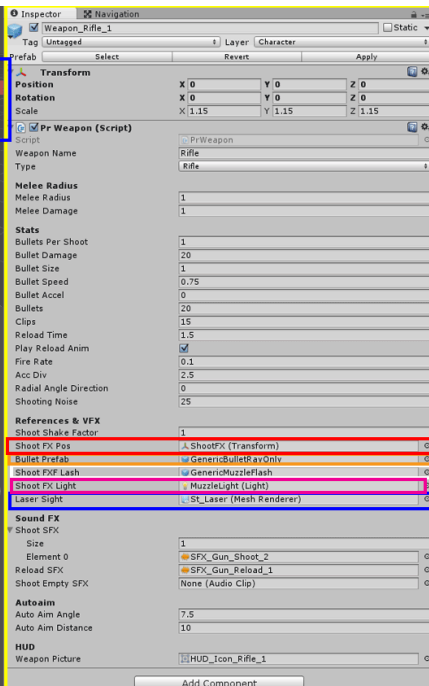
HUD references to different Bars and Compass

## Weapon Setup:

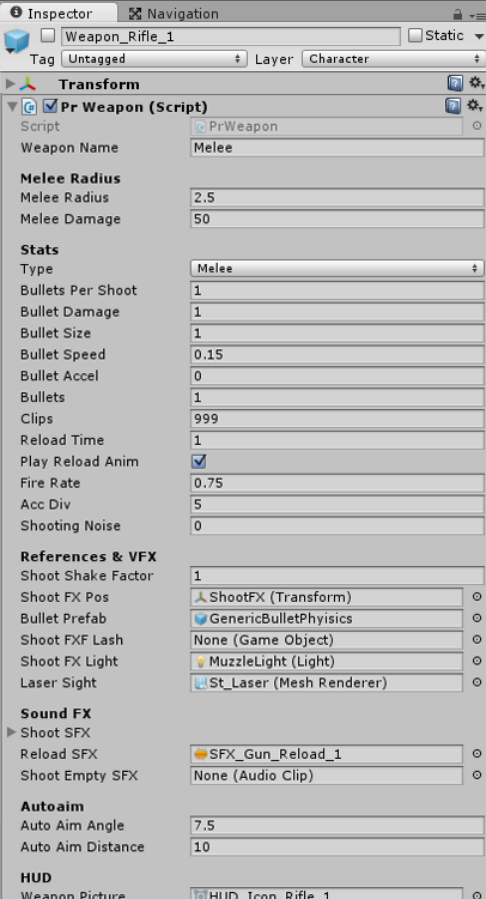
### Basic Weapon Setup



- 1 - The Root node of the weapon has the PrWeapon component (Yellow).
- 2 - The visual mesh is the Weapon\_Rifle\_1 node. you can delete it and add a new one in the same place (green).
- 3 - The weapon will be placed in the hand matching position and rotation of the Weapon\_R node in the character, so you need to create all the weapons using this rifle as a reference. if your rifle does NOT have the grip in the same place it's not going to work properly
- 4 - Shoot FX node is used to define where are going to be spawned the bullets (if your weapon has different proportions, you will need to move this node to the place where the bullets should spawn) reference this node in the PrWeapon component (Red)
- 5 - Muzzlelight node is the light that emits the weapon in every shot. needs to be referenced in the PrWeapon component too. (magenta)
- 6 - St\_Laser is a mesh created to help aiming. referenced in the PrWeapon too (blue)
- 7 - You can assign a bullet type in the BulletPrefab field (Orange) those MUST be PrBullets prefabs you can duplicate a bullet prefab and change it as you need.
- 8 - Shoot\_FX Flash is the Particle VFX that emulates the muzzle. you can create your own muzzle FX and assign it there (white)



### PolygonR Weapon Setup



Tag: Untagged      Layer: Default

Weapon Name

Melee weapons radius. it's going to hit the target if it's closer than this  
Melee weapon damage.

Weapon Type (select character animation set, right now there are only pistol and rifle sets)  
How many bullets at the same time shoots (many if it's a Shotgun)  
Bullet Damage  
Bullet prefab scale FACTOR  
Bullet Speed  
Bullet Acceleration over time  
Bullets per clip  
Maximum quantity of clips  
Time to Reload  
Fire Rate  
Accuracy divergence random angle. 0 is perfect accuracy.  
Noise made by the gun, calculated in meters. this is the radius of the noise sphere.

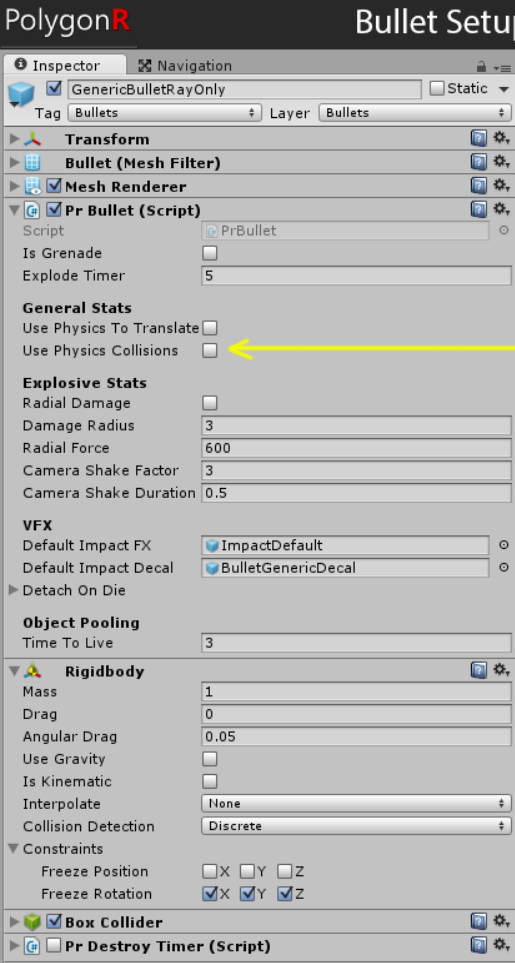
Camera shake factor when shooting.  
Transform reference forMuzzle and Bullet start position  
Bullet prefab (needs a PrBullet Component)  
Muzzle flash VFX Particle system  
Muzzle lighting FX  
Laser Sight Mesh renderer (to help aiming)

Shoot Sound FX Array  
Reload Sound  
Empty clip shoot FX

Auto Aim Angle threshold  
Auto aim distance

HUD Weapon PICTURE

## Bullets Setup



**Bullet Setup** (Check Weapons PREFABS included in "Prefabs/Weapons/Bullets" Folder)

Tag: Bullets      Layer: Bullets

this defines if it's going to behave as a grenade or not.  
Grenade Explode Timer.

Use physics to move the bullet?  
if it's TRUE, the bullet will check collisions using physics, it's heavier but works better with slow bullets.

Radial Damage boolean.  
Damage radiust  
How much push force is applied to enemies  
Camera shake factor when the bullet or grenade explodes  
Camera shake duration in seconds.

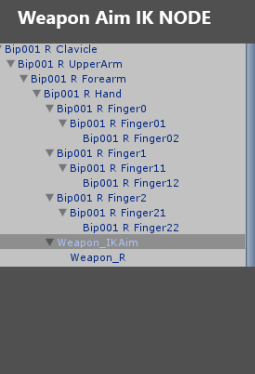
VFX Default impact particles  
Generic Decal impact VFX  
Array of childs to detach on destroy, like smoke if you want to make it fade and not dissapear in one frame)  
Object pooling timer. this object will dissappear in 3 seconds!

**NEEDS A RIGID BODY**


**NEEDS A Collider**  
**NEEDS A Pr Destroy timer turned OFF**

## Weapon Aim IK (Weapon pointing to target)


**Weapon Aim IK NODE**



**Weapon\_IKAim orientation**



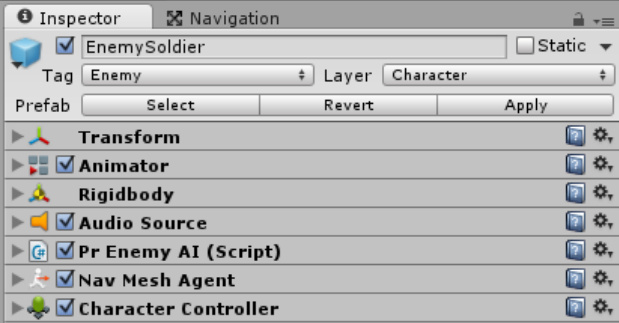
**Weapon\_R orientation**



AIM IK flag in "PrTopDownCharInventory" will help you see a better weapon alignment when aiming.  
to make it work, you should have a NODE called "Weapon\_IKAim" as the PARENT of your Weapon\_R node.  
this node should be oriented EXACTLY in this way (is different to the Weapon\_R orientation)  
you have to check the Weapon\_R node orientation, it should look like this example and then, turning AIM IK option ON will work right.

Enemies basic setup:

## PolygonR Enemy AI: Basic Setup



Inspector: EnemySoldier (Static) Tag: Enemy Layer: Character

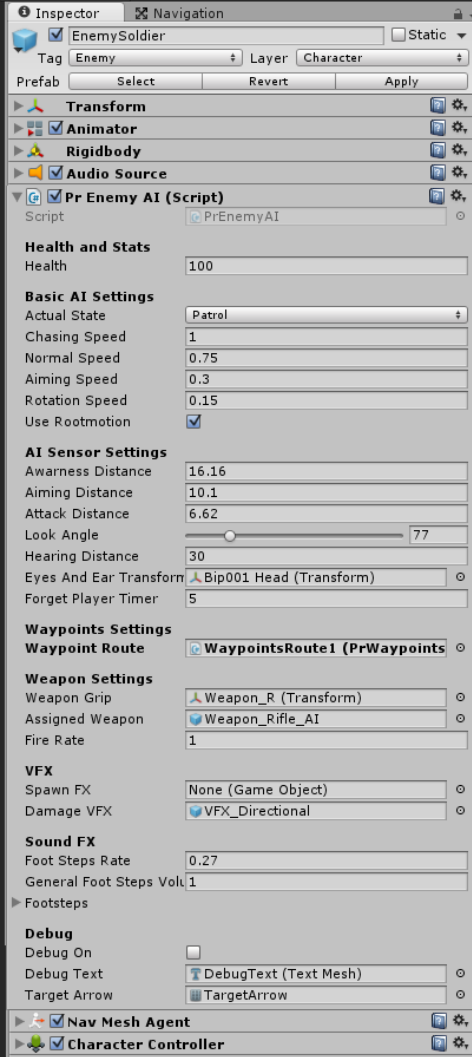
Prefab: Select Revert Apply

- Transform
- Animator
- Rigidbody
- Audio Source
- Pr Enemy AI (Script)
- Nav Mesh Agent
- Character Controller

Tag: Enemy Layer: Character

NEEDS AN ANIMATOR to work!  
NEEDS A RIGID BODY to work!  
NEEDS AN AUDIO SOURCE to work!  
NEEDS A NAV MESH AGENT to work!  
NEEDS A CHARACTER CONTROLLER to work!

## PolygonR Enemy AI: Complete setup



Inspector: EnemySoldier (Static) Tag: Enemy Layer: Character

Prefab: Select Revert Apply

Script: PrEnemyAI

**Health and Stats**

Health: 100

**Basic AI Settings**

Actual State: Patrol  
Chasing Speed: 1  
Normal Speed: 0.75  
Aiming Speed: 0.3  
Rotation Speed: 0.15  
Use Rootmotion: ☒

**AI Sensor Settings**

Awareness Distance: 16.16  
Aiming Distance: 10.1  
Attack Distance: 6.62  
Look Angle: 77  
Hearing Distance: 30  
Eyes And Ear Transform: Bip001 Head (Transform)  
Forget Player Timer: 5

**Waypoints Settings**

Waypoint Route: WaypointsRoute1 (PrWaypoints)

**Weapon Settings**

Weapon Grip: Weapon\_R (Transform)  
Assigned Weapon: Weapon\_Rifle\_AI  
Fire Rate: 1

**VFX**

Spawn VFX: None (Game Object)  
Damage VFX: VFX\_Directional

**Sound FX**

Foot Steps Rate: 0.27  
General Foot Steps Volu: 1

**Footsteps**

**Debug**

Debug On: ☐  
Debug Text: DebugText (Text Mesh)  
Target Arrow: TargetArrow

Nav Mesh Agent  
Character Controller

Tag: Enemy Layer: Character

NEEDS AN ANIMATOR to work!  
NEEDS A RIGID BODY to work!  
NEEDS AN AUDIO SOURCE to work!

Enemy Health points

Enemy actual state for debug  
Speed used to chase the player  
Speed used to patrol  
Speed for Aiming state  
Rotation speed (0.15 is a good number)  
if you want to move the player using rootmotion or not. (rootmotion moves the player using animation translation)

Max distance to SEE the player  
Max distance to start aiming and attacking player  
if the enemy gets to this distance stops moving and only attacks  
Angle of vision of the enemy (displayed using 2 white lines)  
Hearing distance. if the player makes a noise the enemy will go to see what happens position and orientation of the sensor  
how much time will wait the enemy until he goes back to his routine if he doesn't see the player.

Waypoint ROUTE. this is IMPORTANT! you need to assign a gameobject with PrWaypoints assigned and defined

Weapon position and rotation.  
Weapon prefab to instance  
Enemy FireRate (OVERRIDE OF WEAPON PARAMETER).

Spawn VFX.  
VFX used when enemy is damaged

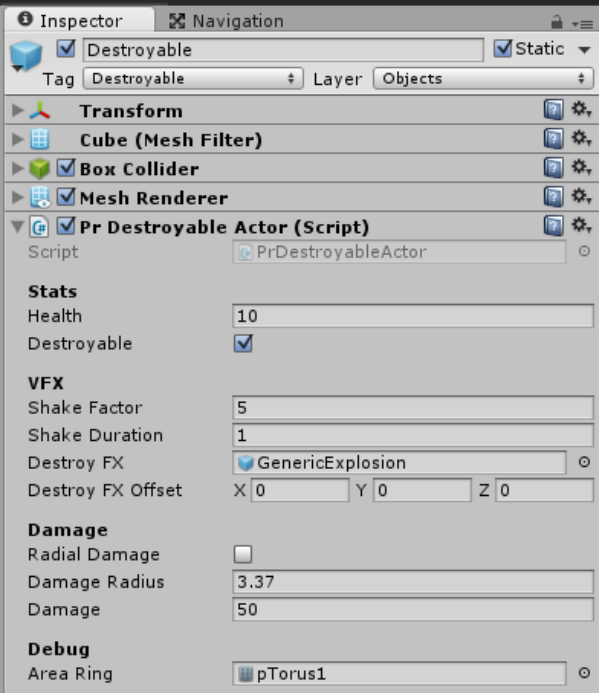
Footsteps rate limit to avoid overlapping.  
general footsteps volume  
Footsteps sounds array to randomize sounds.

Debug. IF ON, it will show a text over the head displaying state, and actions.  
Debug text object  
Debug Target arrow mesh

NEEDS A NAV MESH AGENT to work!  
NEEDS A CHARACTER CONTROLLER to work!

Extras:

## PolygonR Destroyable Actors



Inspector: Navigation

Tag: Destroyable Layer: Objects

**Transform**

**Cube (Mesh Filter)**

**Box Collider**

**Mesh Renderer**

**Pr Destroyable Actor (Script)**

Script: PrDestroyableActor

**Stats**

Health: 10

Destroyable: ☒

**VFX**

Shake Factor: 5

Shake Duration: 1

Destroy FX: GenericExplosion

Destroy FX Offset: X: 0 Y: 0 Z: 0

**Damage**

Radial Damage: ☐

Damage Radius: 3.37

Damage: 50

**Debug**

Area Ring: pTorus1

Tag: Destroyable Layer: Objects

**NEEDS A COLLIDER to work!**

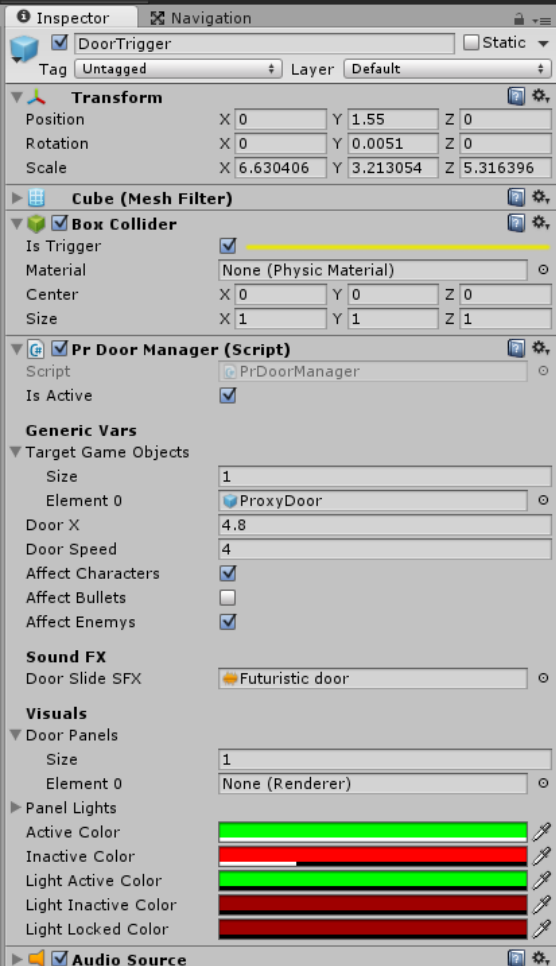
Set Health of Actor  
Set if it can be damaged or not at this moment

Sets Camera shake factor on destruction  
Sets camera shake duration on destruction  
Destroy VFX to play if destroyed  
Destroy VFX Offset position

Set if can damage in Radius  
Set radius of damage  
Set Damage Amount

Debug radius mesh to see in editor radial damage area

## PolygonR Door Manager



Inspector: Navigation

Tag: DoorTrigger Layer: Default

**Transform**

Position: X: 0 Y: 1.55 Z: 0

Rotation: X: 0 Y: 0.0051 Z: 0

Scale: X: 6.630406 Y: 3.213054 Z: 5.316396

**Cube (Mesh Filter)**

**Box Collider**

Is Trigger: ☒

Material: None (Physic Material)

Center: X: 0 Y: 0 Z: 0

Size: X: 1 Y: 1 Z: 1

**Pr Door Manager (Script)**

Script: PrDoorManager

Is Active: ☒

**Generic Vars**

Target Game Objects

Size: 1

Element 0: ProxyDoor

Door X: 4.8

Door Speed: 4

Affect Characters: ☒

Affect Bullets: ☐

Affect Enemies: ☒

**Sound FX**

Door Slide SFX: Futuristic door

**Visuals**

Door Panels

Size: 1

Element 0: None (Renderer)

Panel Lights

Active Color: Green

Inactive Color: Red

Light Active Color: Green

Light Inactive Color: Red

Light Locked Color: Red

Tag: Untagged Layer: Default

**NEEDS A COLLIDER SET TO TRIGGER to work!**

Sets the door active or inactive

Door visual objects that will move. if TWO are set, they will move in opposite directions.  
Door Max Slide movement in X axis  
Door Slide speed  
Can characters OPEN the doors?  
Can Bullets OPEN the doors?  
Can Enemies OPEN the doors?

Door Slide sound

Door Panel: if defined, will change material color by state)

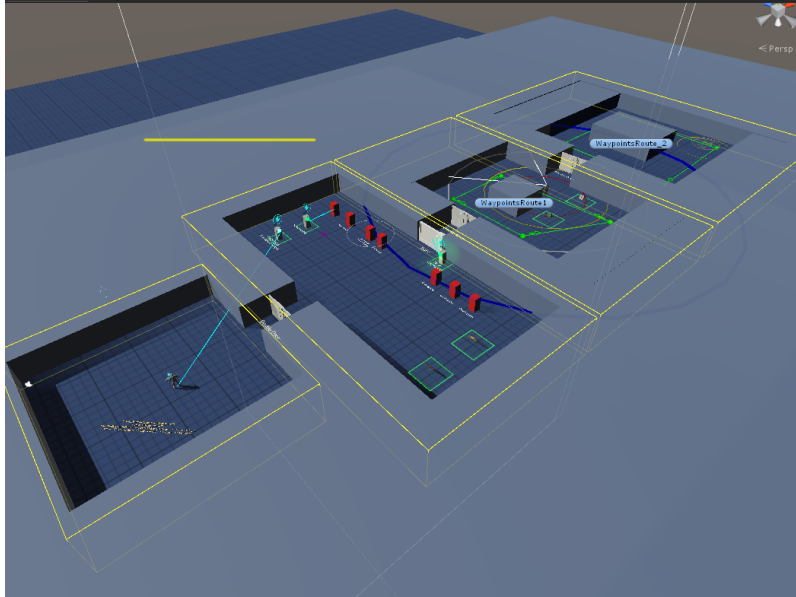
Panel Lights: array of lights that will change colors by state.

Colors for different door states: Active, Inactive...

**NEEDS AN AUDIO SOURCE to play slide sounds!**



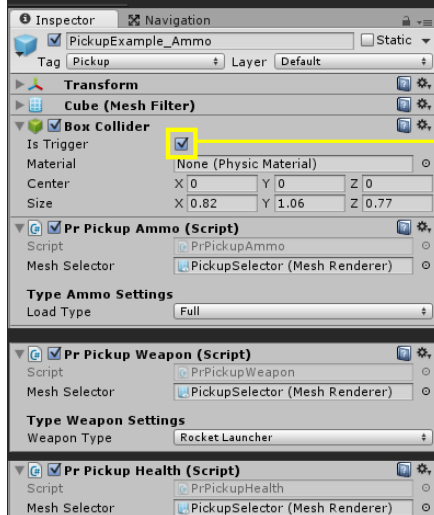
## PolygonR Environment Areas for DYNAMIC CAMERA DISTANCE TO PLAYER



Yellow Boxes are TRIGGERS, using TAG : EnvZone and using the PrEnvironmentZone Component.

This allows the LEVEL DESIGNER to SET UP DIFFERENT CAMERA HEIGHTS. When the player enters this Triggers, the camera smoothly moves to the new HEIGHT.

## PolygonR Pickup Actors



Tag: Pickup

Layer: Default

**ALL PICKUPEABLES NEED A COLLIDER to work! SET it to TRIGGER!!!**

**This Component gives AMMO to the player**

Set a Mesh (Usually a child) that has a Meshrenderer and can be used as a SELECTOR HUD

Set Ammo Quantity

**This Component gives A WEAPON to the player**

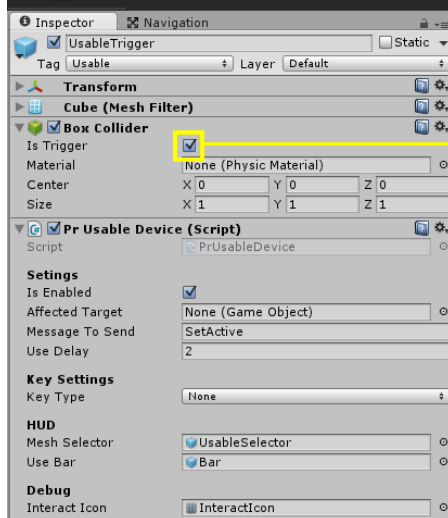
Set a Mesh (Usually a child) that has a Meshrenderer and can be used as a SELECTOR HUD

Set Weapon Type (Prefabs assigned into player's Inventory script in order (Pistol, Rifle, Shotgun, Rocketlauncher)

**This Component RESTORES FULL HEALTH to the player**

Set a Mesh (Usually a child) that has a Meshrenderer and can be used as a SELECTOR HUD

## PolygonR Usable Actors



Tag: Usable

Layer: Default

**NEEDS A COLLIDER to work! SET it to TRIGGER!!!**

Set if is Enabled or Not

Select a object or actor in the scene as a target

Set the MESSAGE to send to TARGET object (this has to be a public function in a script assigned in the TARGET)

Time that's going to take to use this object

Set if player has to HAVE in the inventory a specific type of Key

Select an object from the Scene (a child of this Gameobject) with a Meshrenderer that works as a Selector HUD

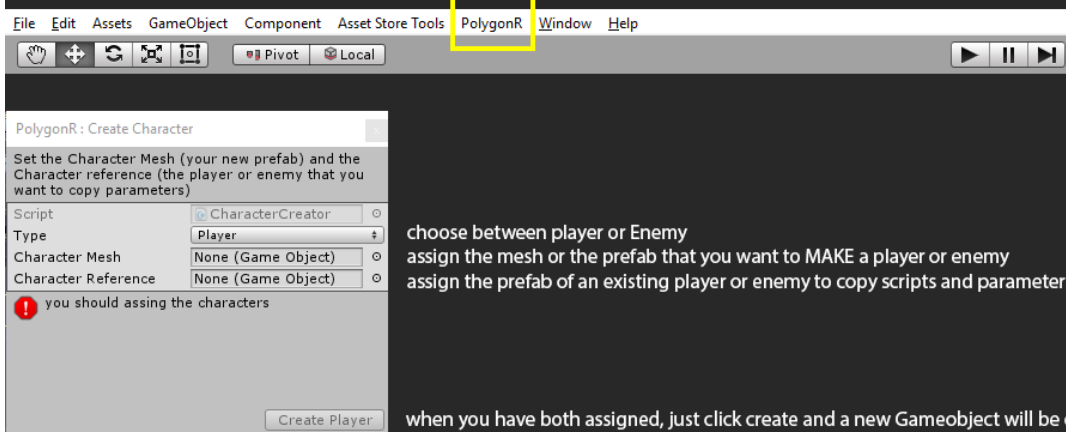
Select the Progress Bar (included a working example in sample Scene)

Icon Mesh to see in Editor.

## Character Creation Tool

1 - Create a new empty scene

2 - Open the new PolygonR > Character Creation Tool



choose between player or Enemy

assign the mesh or the prefab that you want to MAKE a player or enemy

assign the prefab of an existing player or enemy to copy scripts and parameters.

when you have both assigned, just click create and a new Gameobject will be created in the scene.

3 - Adjust colliders, speed, position of weapon or anything you need and create a prefab ready to use.