Top-down ARPG Camera & Character Controller Mobile (Version 1.6)

Summary

Thank you for purchasing this package. (Version 1.6)

The demo scenes provided are simple demonstration on how to use the scripts. It can help you if you are struggling with some features and not sure how to fix them. There is a setup guide included in this document for more detailed help.

There are 9 mobile prefabs you can use:

- “1.a. Mobile ARPG Player” Normal top-down camera and uses touch to move character (Like Diablo).
- “1.b.Mobile AROG Follow Cam Player” Follow camera and uses touch to move character (Like Diablo).
- “2.a.Mobile Axis top down Mouse ARPG Player” Normal top-down camera and uses left and right joystick to move.
- “2.b. Mobile Axis top down Mouse ARPG Follow Cam Player” Follow camera and uses left and right joystick to move.
- “3.Mobile Axis ARPG Player” Normal top-down camera and uses left joystick to move.
- “4.Mobile Axis Turn ARPG Follow Cam Player” Follow camera and uses left joystick to move.
- “JumpButton” a button example, in some demo scenes used for jumping.
- “LeftJoyStick” left joystick for player movements, with example image.
- “RightJoyStick” right joystick for player movements uses Unity stock joystick image.

There are 2 camera scripts (normal top-down ARPG camera and follow camera), 4 player move scripts and joystick script (C# version of Unity’s joystick script).

Version 1.6:

- Unity 5 upgrade. Added blend tree for animations.
- Fixed MobileARPGJoystickPlayerMove where the player jumps and it rotates by itself.
- New Transparent material added.

Scripts

The Mobile top-down ARPG camera (MobileARPGCameraController.cs)

A Script for an ARPG (Diablo, Path of Exile, Torchlight) style camera that also allows zoom with pinch. It contains code that makes objects transparent if they are between the camera and target. The objects material needs to be a transparent shader so we can change the alpha value. Just drag the script on the main camera and set the parameters. Camera can be a child of the target.

Parameters:

- Target, the target the camera should look at and rotate around. You need a target (Character) for the camera to work.
- StartingDistance, distance the camera starts from target object.
- MaxDistance, the max distance the camera can be from target object.
- MinDistance, the min distance the camera can be from target object.
- ZoomSpeed, the speed the camera zooms in/out of the target.
- TargetHeight, the amount from the target object pivot the camera should look at.
- CamXAngle, the camera x Euler angle. This is the angle the camera looks at from the top.
- FadeObjects, enable objects of a certain layer to be faded.
- LayersToTransparent, the layers where we will allow transparency.
- Alpha, the alpha value of the material when player behind object.
- PinchZoom, enables pinch zoom.

Zoom in and out by pinching with 2 fingers.

Follow camera (MobileARPGFollowCameraController.cs)

A Script for follow style camera that also allows zoom with pinch. It contains code that makes objects transparent if they are between the camera and target. The objects material needs to be a transparent shader so we can change the alpha value. Just drag the script on the main camera and set the parameters. Camera can be a child of the target.

Parameters that's different from former script:

- RotationDamping, how fast it should rotate to target angles

Zoom in and out by pinching with 2 fingers.

Mobile ARPG move script (MobileARPGPlayerMove.cs)

This script controls the player movement. Simple ray cast gets the target location and ignore layers provided, and then the player moves to target location stopping if it hits something. Can be easily modified to work with Unity Pro Nav Mesh or path finding projects. This script requires Character Controller script, also uses an Animator but is not required.

Parameters:

- MoveSpeed, character movement speed.
- RotationSpeed, how quick the character rotates to target location.
- DistanceError, the distance where you stop the character, distance calculated between the difference of target position and character position.
- Gravity, gravity for the character.
- RayCastDistance, the ray casting distance of the mouse click.
- LayerMask, the layers the mouse click (ray cast) should ignore.
- GuiPositions, a list of rectangles the HUD or GUI is in, will stop ray cast at that rectangle.
- GuiPositionsXFromRight, a list the same size as GuiPositions. If quiPosition i (any qui position) calculates from screen width set i to true.
- GuiPositionsYFromBottom, a list the same size as GuiPositions. If quiPosition i (any qui position) calculates from screen height set i to true.

Move the player by touching the screen on the desired location.

Mobile 2 joystick move script (MobileAxisMousePlayerMove.cs)

This script controls the player movement. Use the left joystick to move forward, back, strafe left and right, and right joystick to rotate the player.
This script requires Character Controller script, also uses an Animator but is not required.

Parameters:

- MoveSpeed, character movement speed.
- RotationSpeed, how quick the character rotates with mouse movement.
- Gravity, gravity for the character.
- JumpSpeed, jump height of the character.
- MyJoystickLeft, the joystick to move the player.
- MyJoystickRight, the joystick to rotate the player.
- MobileCameraController, the camera script being used.
- JumpButton, the gui texture for jumping.

Works best with follow camera, but this also works for top-down camera.

Mobile joystick player move script (MobileARPGJoystickPlayerMove.cs)

This script controls the player movement. Use joystick to move in the desired direction.

Parameters:

- MoveSpeed, character movement speed.
- RotationSpeed, how quick the character rotates with mouse movement.
- Gravity, gravity for the character.
- JumpSpeed, jump height of the character.
- MyJoystick, the joystick to move the player.
- MobileCameraController, the camera script being used.
- JumpButton, the gui texture for jumping.
- MyRotationObject, the object we will be rotating when moving.

Works best with top-down camera.

Mobile joystick turn move player script (MobileAxisTurnPlayerMove.cs)

This script controls the player movement. Use joystick to move and turn the player.

Parameters:

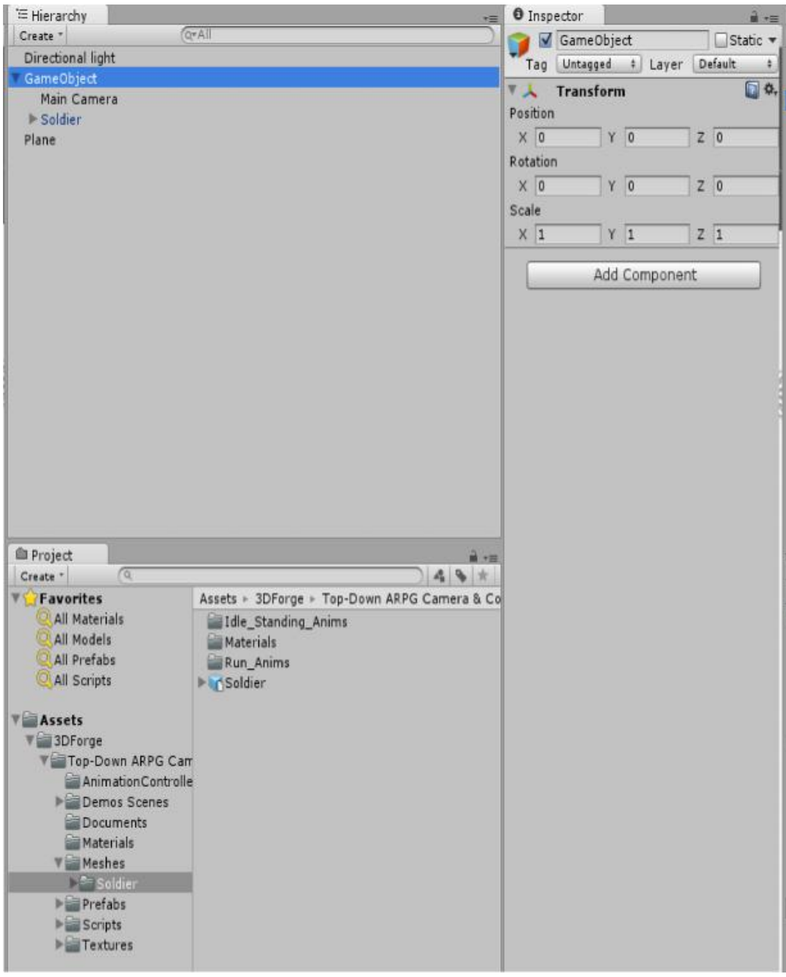
- MoveSpeed, character movement speed.
- RotationSpeed, how quick the character rotates with mouse movement.
- Gravity, gravity for the character.
- JumpSpeed, jump height of the character.
- MyJoystick, the joystick to move the player.
- MobileCameraController, the camera script being used.
- JumpButton, the gui texture for jumping.

Works best with follow camera, but can work with top-down camera.

Setup 1

Setup guide for using touch and move player, with top-down camera.

1. Create a new scene and add a plane/terrain to the scene.
2. Create empty GameObject and move its position to (0, 0, 0).
3. Add your toon/character to the scene and move its position to (0, 0, 0).
4. Add your toon/character that is in the scene as a child object of the GameObject we added.
5. Also drag the mainCamera as a child object of the GameObject we added.
6. Now we can rename the GameObject and set its tag and layer (See 11) as player.



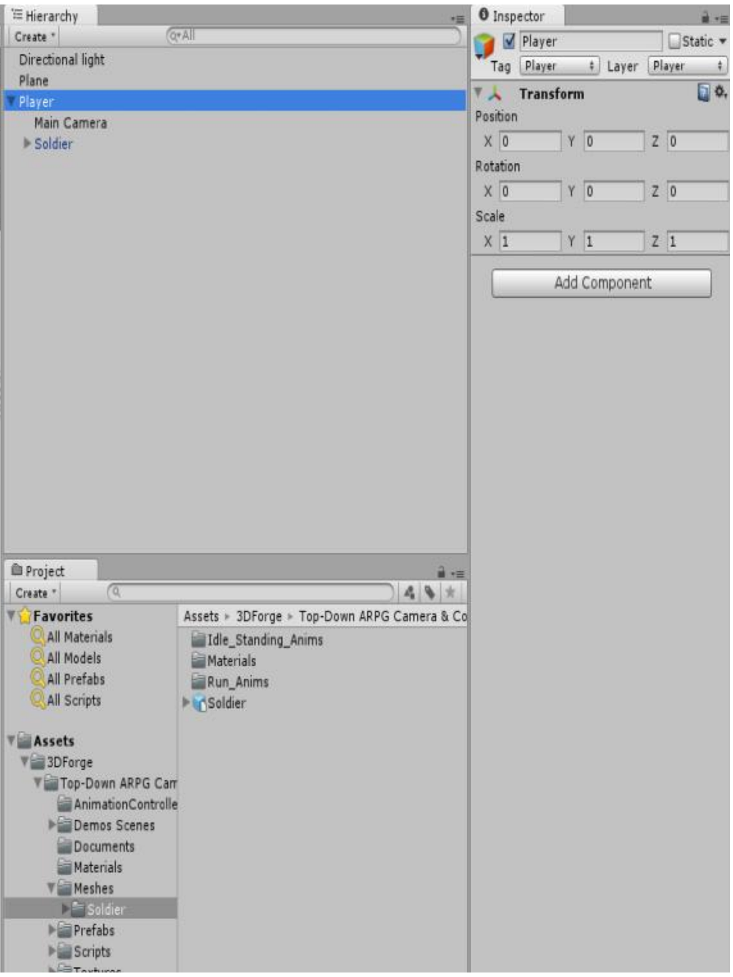
☑ GameObject □ Static

Tag Untagged Layer Default

Position X 0 Y 0 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1



☑ Player □ Static

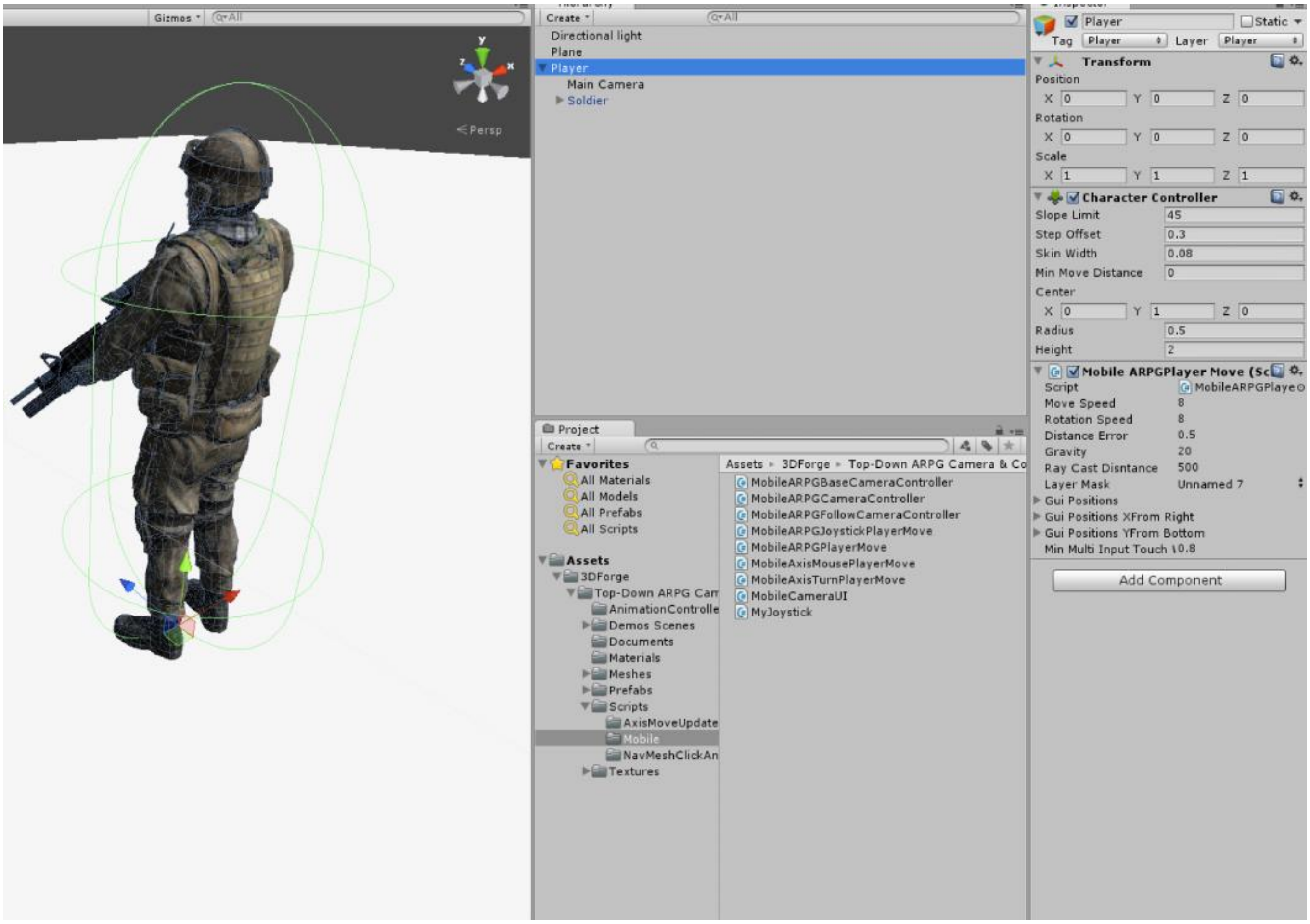
Tag Player Layer Player

Position X 0 Y 0 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1 Y 1 Z 1

7. Now we can add the scripts, let’s start with the player move script. You can find the scripts under Assets/3DForge/ Top-Down ARPG Camera & Controller/Scripts/Mobile. We add the MobileARPGPlayerMove.cs to the Player (Parent) object. The Character Controller will be added automatically. Make sure the Character Controller is positioned correctly.



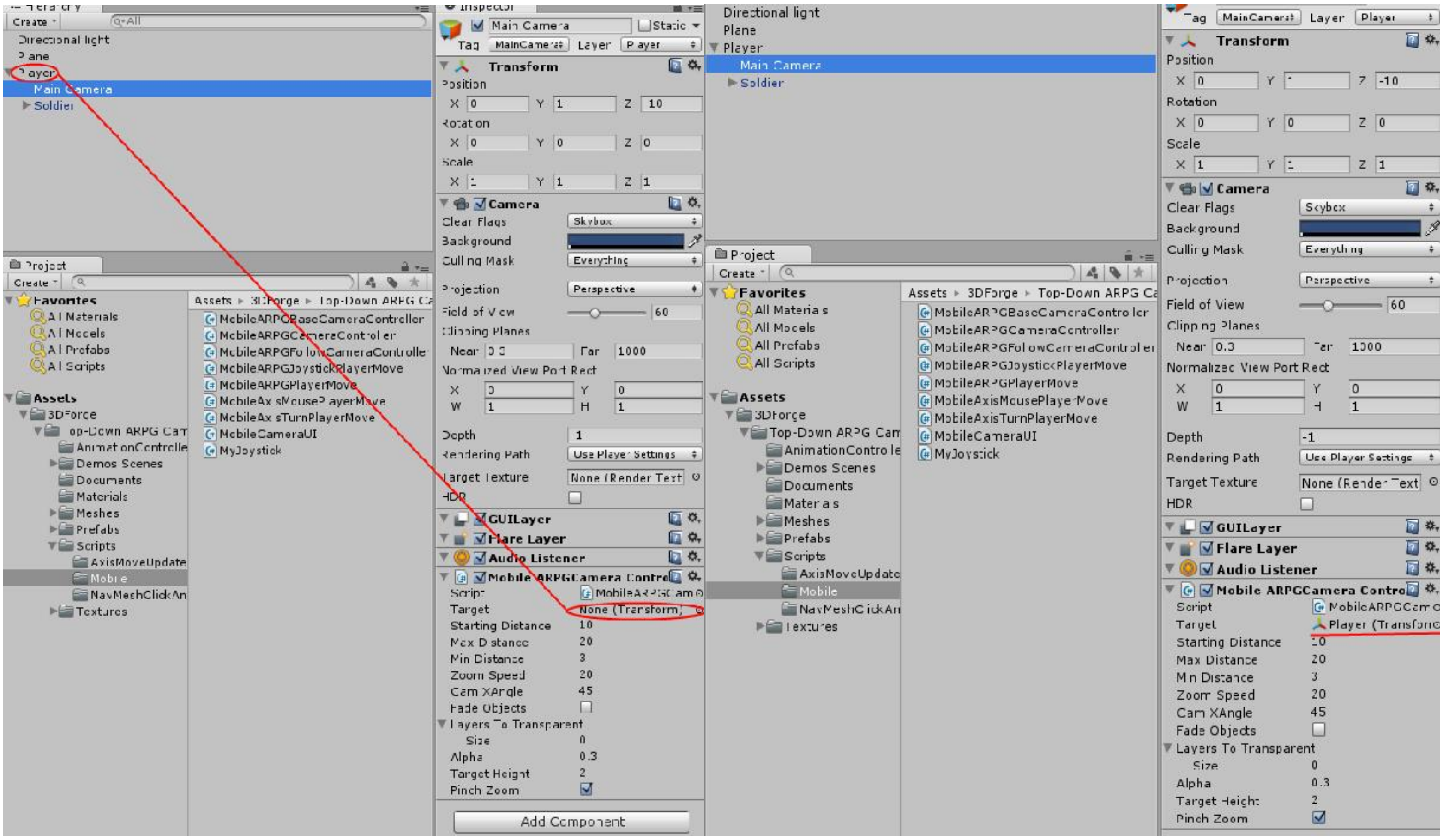
☑ Player ☐ Static
Tag Player Layer Player

Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

☑ Character Controller
Slope Limit 45
Step Offset 0.3
Skin Width 0.08
Min Move Distance 0
Center X 0 Y 1 Z 0
Radius 0.5
Height 2

☑ Mobile ARPGPlayer Move (Sc
Script MobileARPGPlaye
Move Speed 8
Rotation Speed 8
Distance Error 0.5
Gravity 20
Ray Cast Disntance 500
Layer Mask Unnamed 7
Gui Positions
Gui Positions XFrom Right
Gui Positions YFrom Bottom
Min Multi Input Touch \0.8

8. We then add the "MobileARPGCameraController.cs" script to the Main Camera as we are building the Normal Top-Down camera. We can then set the target variable to the player game object.



Hierarchy: Directional light, Plane, Player, Main Camera, Soldier

Project: Assets ▸ 3DForge ▸ Top-Down ARPG Ca

MobileARPGBaseCameraController
MobileARPGCameraController
MobileARPGFollowCameraController
MobileARPGJoystickPlayerMove
MobileARPGPlayerMove
MobileAxisMousePlayerMove
MobileAxisTurnPlayerMove
MobileCameraUI
MyJoystick

Inspector: Main Camera, Tag MainCamera, Layer Player

Transform: Position X 0, Y 1, Z 10; Rotation X 0, Y 0, Z 0; Scale X 1, Y 1, Z 1

Camera: Clear Flags Skybox; Culling Mask Everything; Projection Perspective; Field of View 60; Clipping Planes Near 0.3, Far 1000; Normalized View Port Rect X 0, Y 0, W 1, H 1; Depth 1; Rendering Path Use Player Settings; Target Texture None (Render Texture); HDR ☐

GUILayer
Flare Layer
Audio Listener

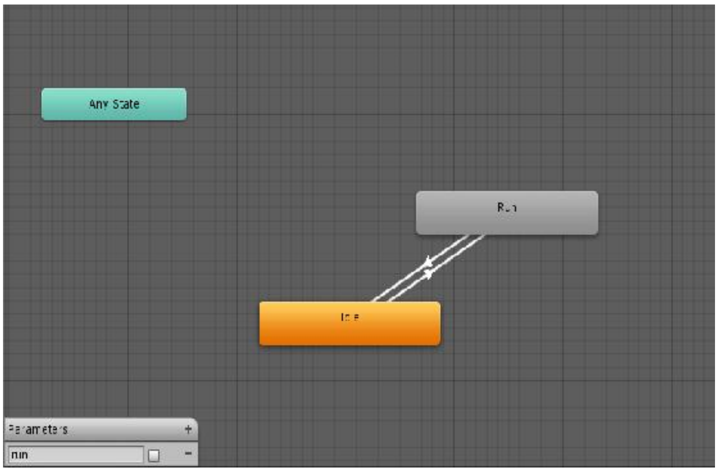
Mobile ARPGCamera Controller
Script: MobileARPGCameraController
Target: None (Transform)
Starting Distance: 10
Max Distance: 20
Min Distance: 3
Zoom Speed: 20
Cam XAngle: 45
Fade Objects: ☐
Layers To Transparent: Size 0
Alpha: 0.3
Target Height: 2
Pinch Zoom: ☑

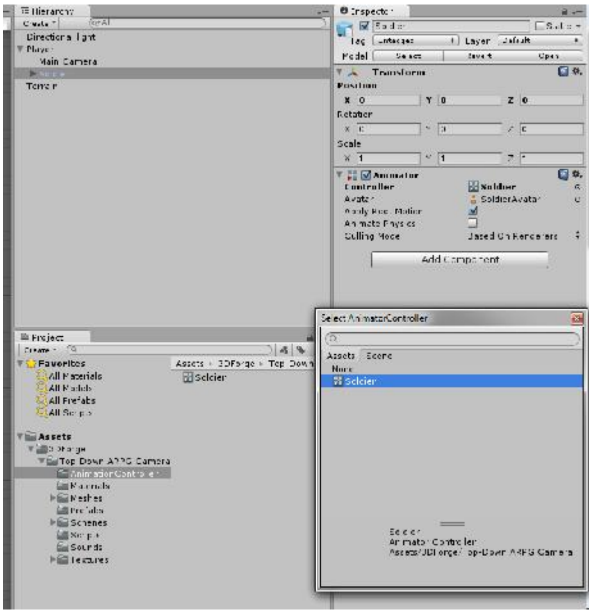
Add Component

Inspector (after): Transform: Position X 0, Y 1, Z -10; Rotation X 0, Y 0, Z 0; Scale X 1, Y 1, Z 1; Camera Depth -1

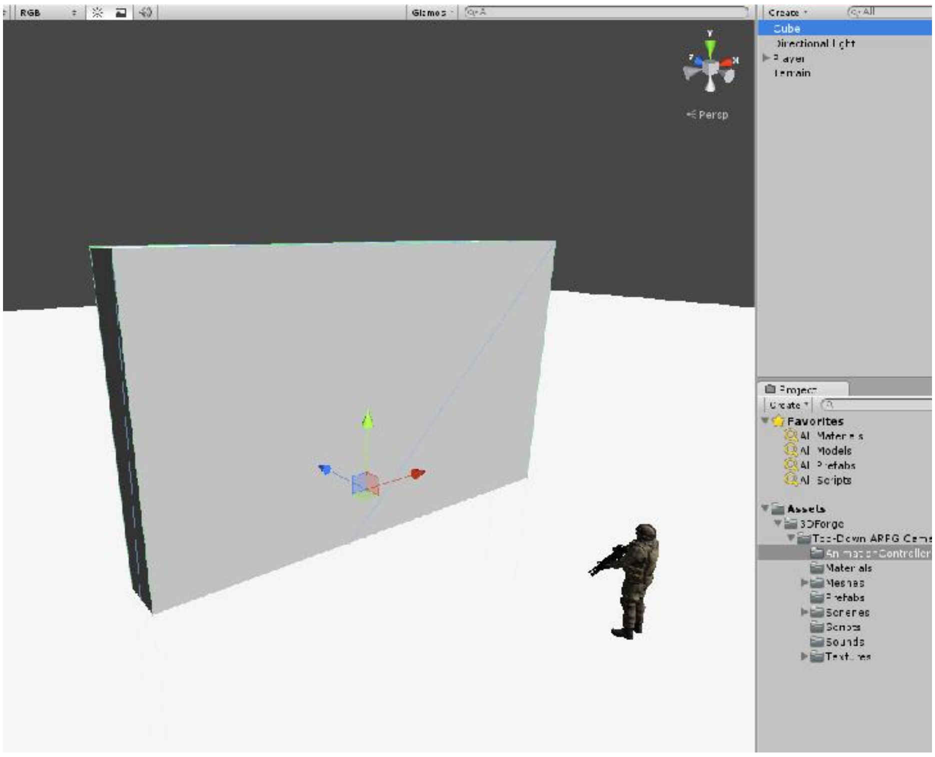
Mobile ARPGCamera Controller
Script: MobileARPGCameraController
Target: Player (Transform)
Starting Distance: 10
Max Distance: 20
Min Distance: 3
Zoom Speed: 20
Cam XAngle: 45
Fade Objects: ☐
Layers To Transparent: Size 0
Alpha: 0.3
Target Height: 2
Pinch Zoom: ☑

9. Player can move now but we need an AnimatorController for the character/toon to animate. The MobileARPGPlayerMove script only calls one animator variable “run” that is a Boolean. There is already one in the project under Assets/3DForge/ Top-Down ARPG Camera & Controller/AnimationController. Add AnimatorController to character/toon.

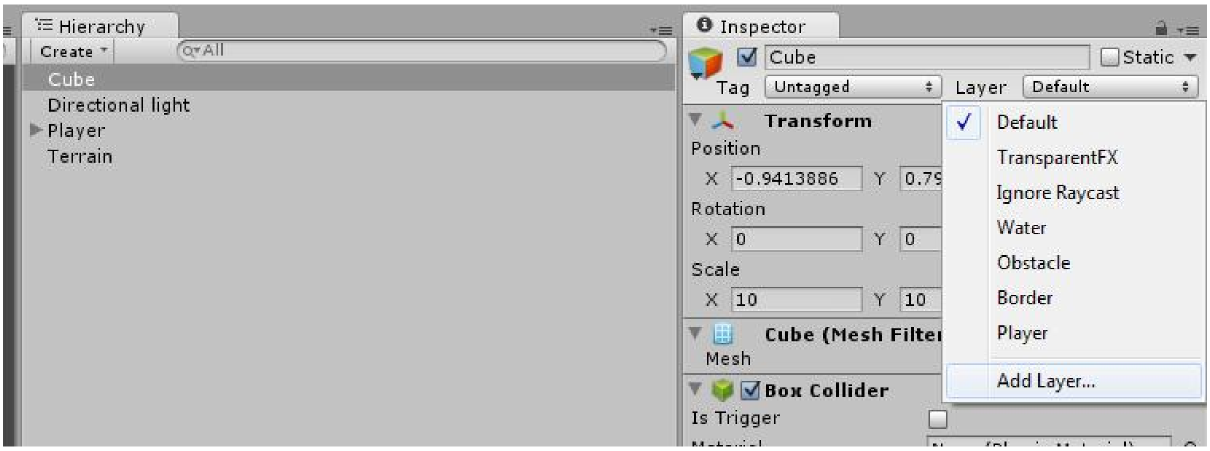




10. Now that we have the player running around looking awesome we can add some obstacles. Add a normal Cube to the scene and change its scale to (10, 10, 1).



11. Add layers to project. I added Obstacle, Border and Player.



☑ Cube

Tag Untagged

Layer Default

Position

X -0.9413886 Y 0.79

Rotation

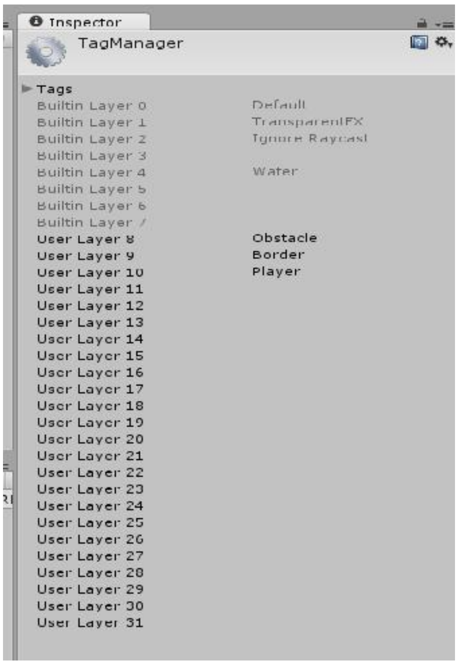
X 0 Y 0

Scale

X 10 Y 10

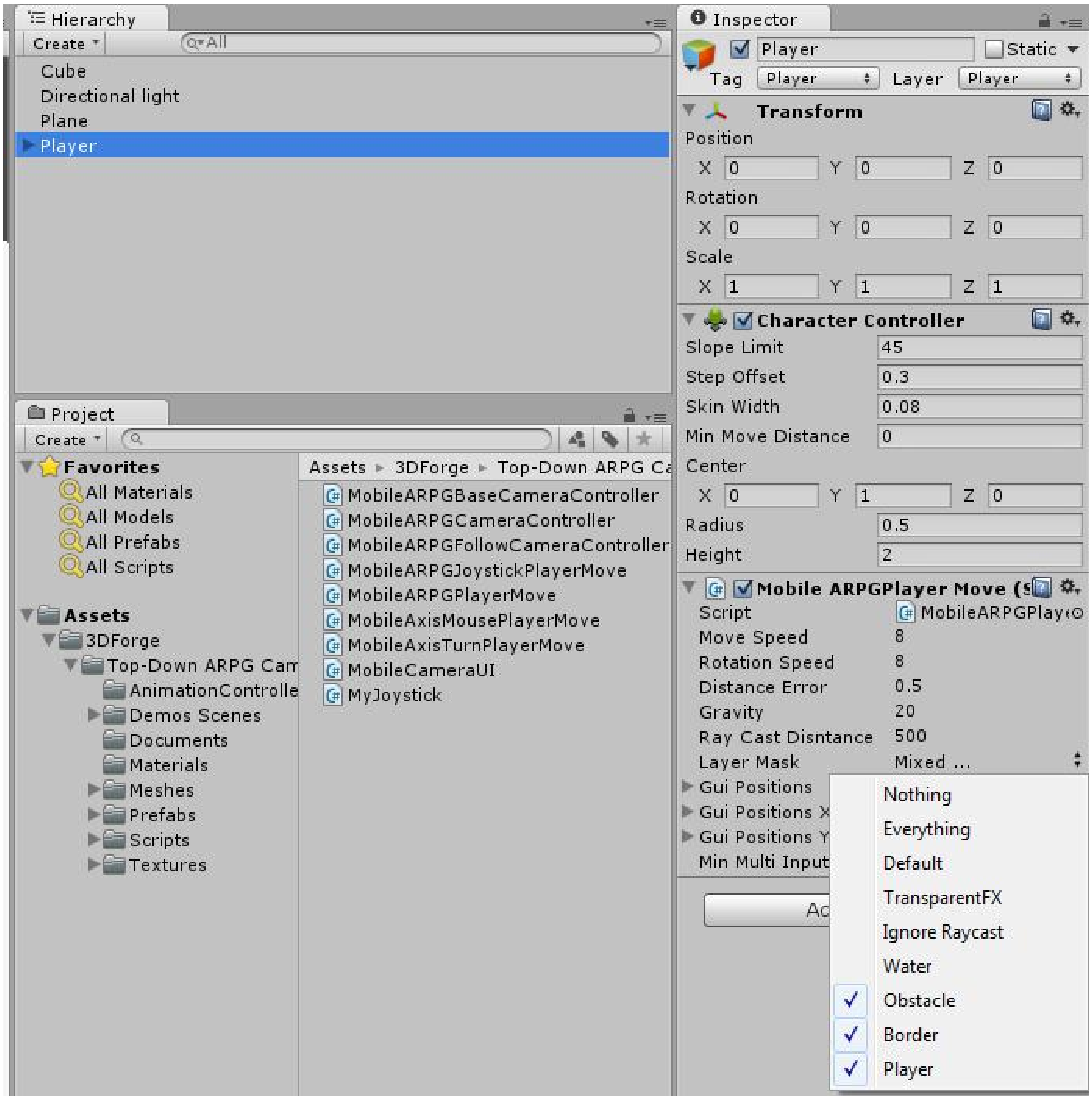
Mesh

Is Trigger □



Builtin Layer 0	Default
Builtin Layer 1	TransparentFX
Builtin Layer 2	Ignore Raycast
Builtin Layer 3	
Builtin Layer 4	Water
Builtin Layer 5	
Builtin Layer 6	
Builtin Layer 7	
User Layer 8	Obstacle
User Layer 9	Border
User Layer 10	Player
User Layer 11	
User Layer 12	
User Layer 13	
User Layer 14	
User Layer 15	
User Layer 16	
User Layer 17	
User Layer 18	
User Layer 19	
User Layer 20	
User Layer 21	
User Layer 22	
User Layer 23	
User Layer 24	
User Layer 25	
User Layer 26	
User Layer 27	
User Layer 28	
User Layer 29	
User Layer 30	
User Layer 31	

12. Now set the cube’s layer to Obstacle.
13. On the player look at the MobileARPGPlayerMove script then on the LayerMask variable check the layers you wish the touch event need to ignore.



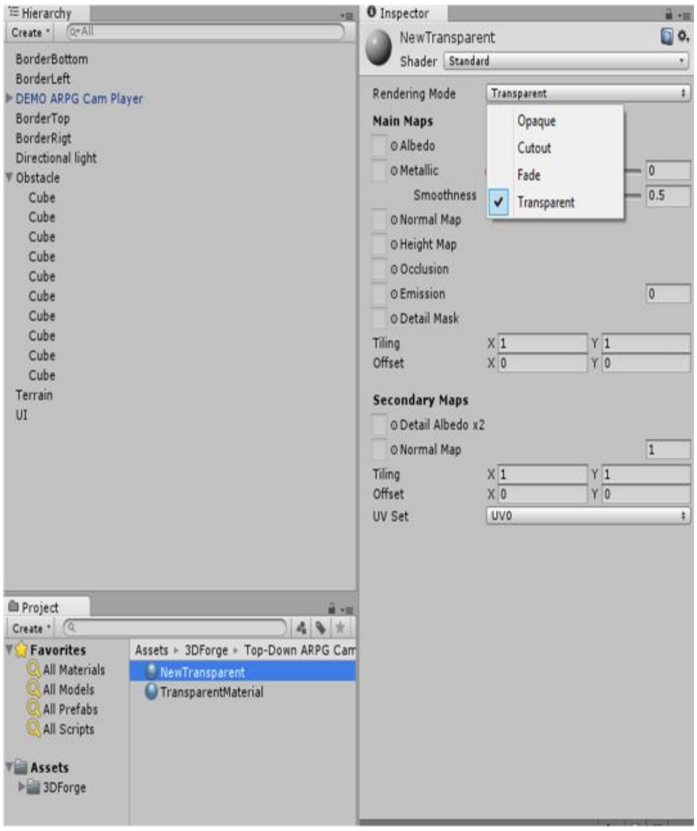
☑ Player □ Static
Tag Player Layer Player

Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

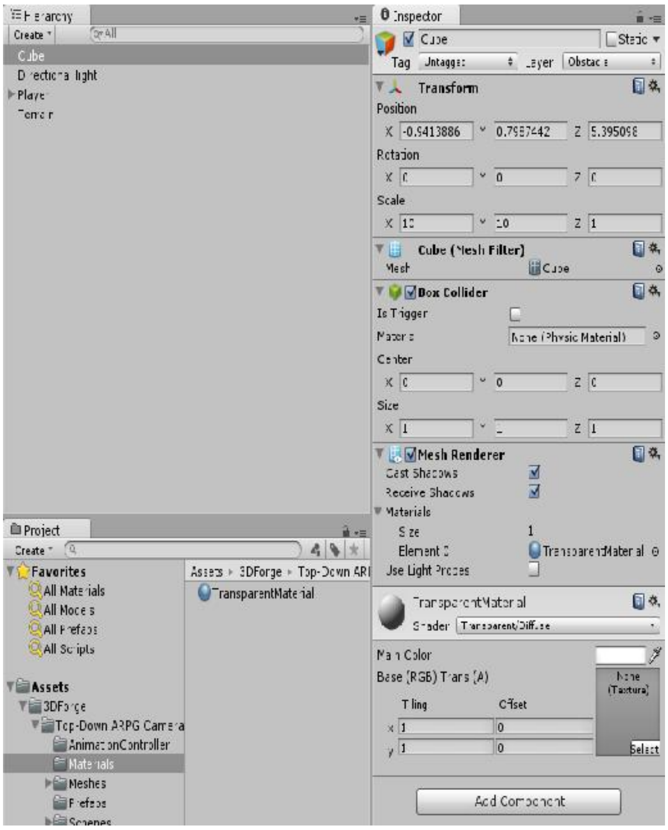
☑ Character Controller
Slope Limit 45
Step Offset 0.3
Skin Width 0.08
Min Move Distance 0
Center X 0 Y 1 Z 0
Radius 0.5
Height 2

☑ Mobile ARPGPlayer Move (S
Script MobileARPGPlay
Move Speed 8
Rotation Speed 8
Distance Error 0.5
Gravity 20
Ray Cast Disntance 500
Layer Mask Mixed ...
Gui Positions
Gui Positions X
Gui Positions Y
Min Multi Input

14. We can also set certain objects to go transparent using the layers we created, first we need to change the cubes materials to a material with transparency, create a standard material and set rendering mode to transparent then set the cubes material to the new transparent one.

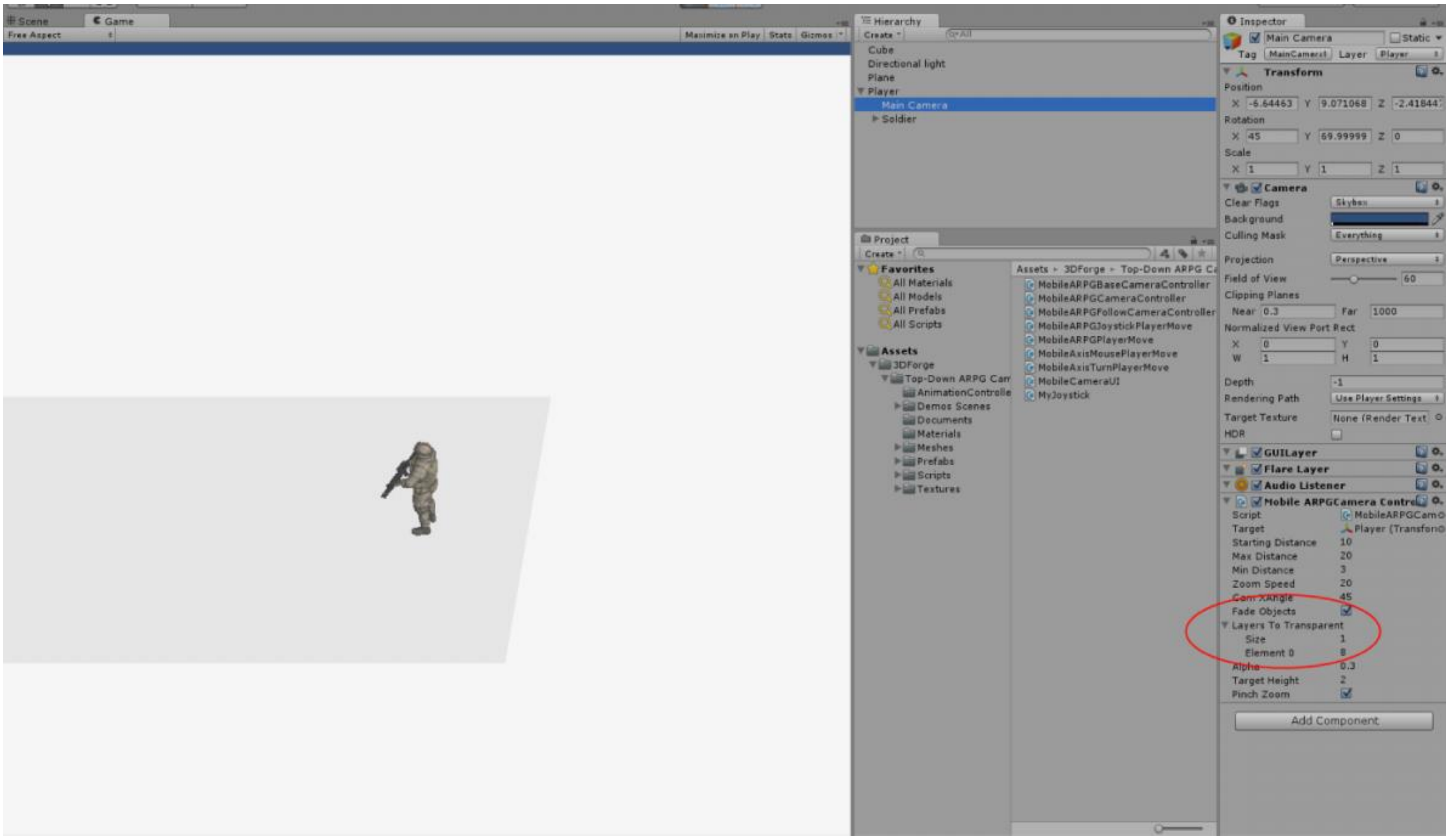


NewTransparent
Shader Standard
Rendering Mode Transparent



Cube
Tag Untagged Layer Obstacle
Mesh Renderer
Materials
Size 1
Element 0 TransparentMaterial
TransparentMaterial
Shader Transparent/Diffuse

15. Now that the cube is setup we need to set the camera layers to test on, click on the Main Camera in the scene then on the script, check the Fade Objects variable. On the Layers to Transparent variable change the size to 1 and set Element 0’s value to 8 (Obstacle layer).



☑ Main Camera ☐ Static

Tag MainCamera Layer Player

Transform

Position X -6.64463 Y 9.071068 Z -2.41844

Rotation X 45 Y 69.99999 Z 0

Scale X 1 Y 1 Z 1

☑ Camera

Clear Flags Skybox

Background

Culling Mask Everything

Projection Perspective

Field of View 60

Clipping Planes Near 0.3 Far 1000

Normalized View Port Rect X 0 Y 0 W 1 H 1

Depth -1

Rendering Path Use Player Settings

Target Texture None (Render Text

HDR ☐

☑ GUILayer

☑ Flare Layer

☑ Audio Listener

☑ Mobile ARPGCamera Contro

Script MobileARPGCam

Target Player (Transform

Starting Distance 10

Max Distance 20

Min Distance 3

Zoom Speed 20

Cam XAngle 45

Fade Objects ☑

Layers To Transparent

Size 1

Element 0 8

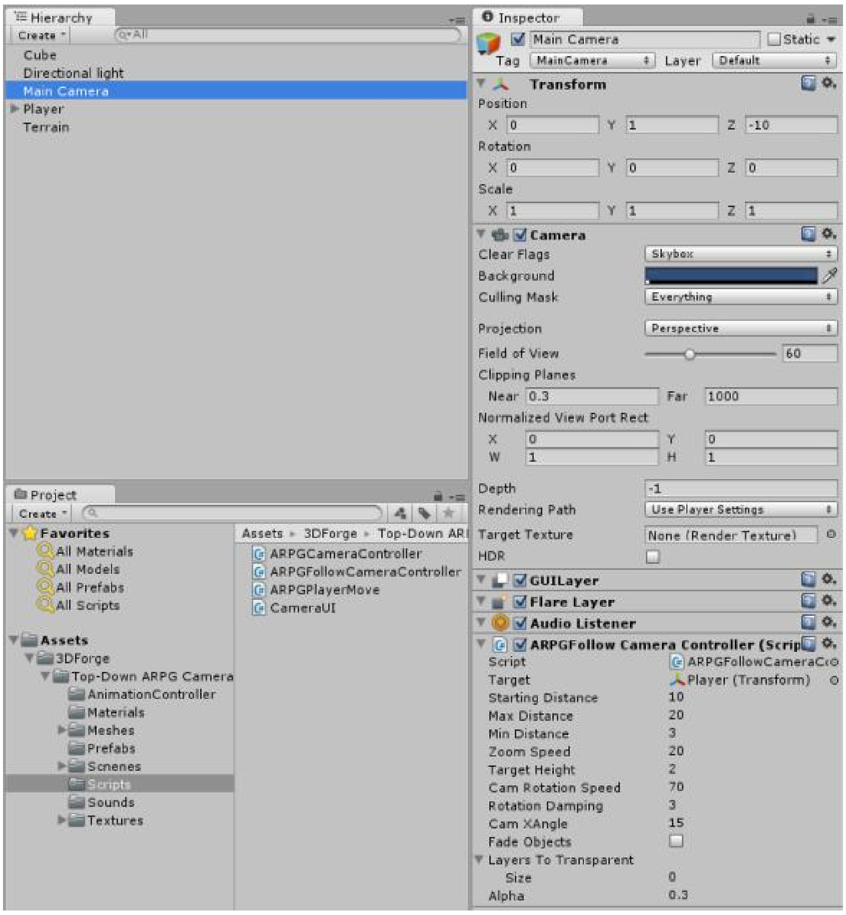
Alpha 0.3

Target Height 2

Pinch Zoom ☑

Add Component

16. This setup was for the normal top-down ARPG camera, if you want to use the follow camera you just keep the Main Camera on the root.



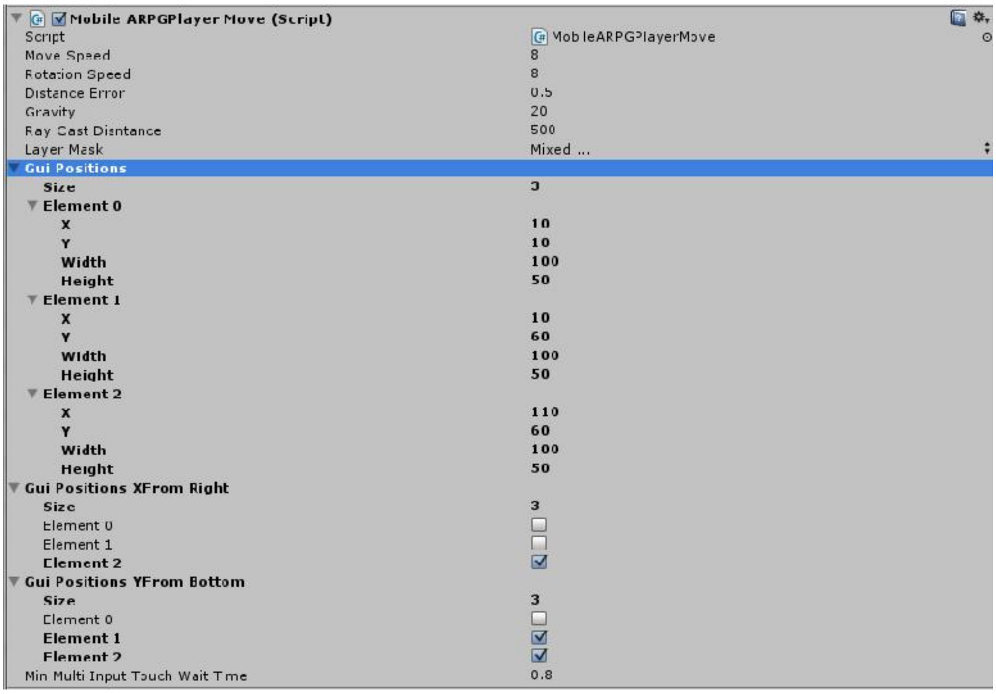
Main Camera □ Static
Tag MainCamera Layer Default

Transform
Position X 0 Y 1 Z -10
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

☑ Camera
Clear Flags Skybox
Background
Culling Mask Everything
Projection Perspective
Field of View 60
Clipping Planes Near 0.3 Far 1000
Normalized View Port Rect X 0 Y 0 W 1 H 1
Depth -1
Rendering Path Use Player Settings
Target Texture None (Render Texture)
HDR □

☑ GUILayer
☑ Flare Layer
☑ Audio Listener
☑ ARPGFollow Camera Controller (Scrip
Script ARPGFollowCameraCo
Target Player (Transform)
Starting Distance 10
Max Distance 20
Min Distance 3
Zoom Speed 20
Target Height 2
Cam Rotation Speed 70
Rotation Damping 3
Cam XAngle 15
Fade Objects □
Layers To Transparent
Size 0
Alpha 0.3

17. If you have GUI with interaction then to make sure the character doesn't move when you interact with the GUI we set their positions on the "MobileARPGPlayerMove.cs". Let's say you have 3 GUI positions A = (10, 10, 100, 50), B = (10, Screen.height-60, 100, 50) and C = (Screen.width-110, Screen.height-60, 100, 50). On the player object containing the script we set the values for parameters GUI Positions, Gui Positions X From Right and Gui positions Y From Bottom. See image!

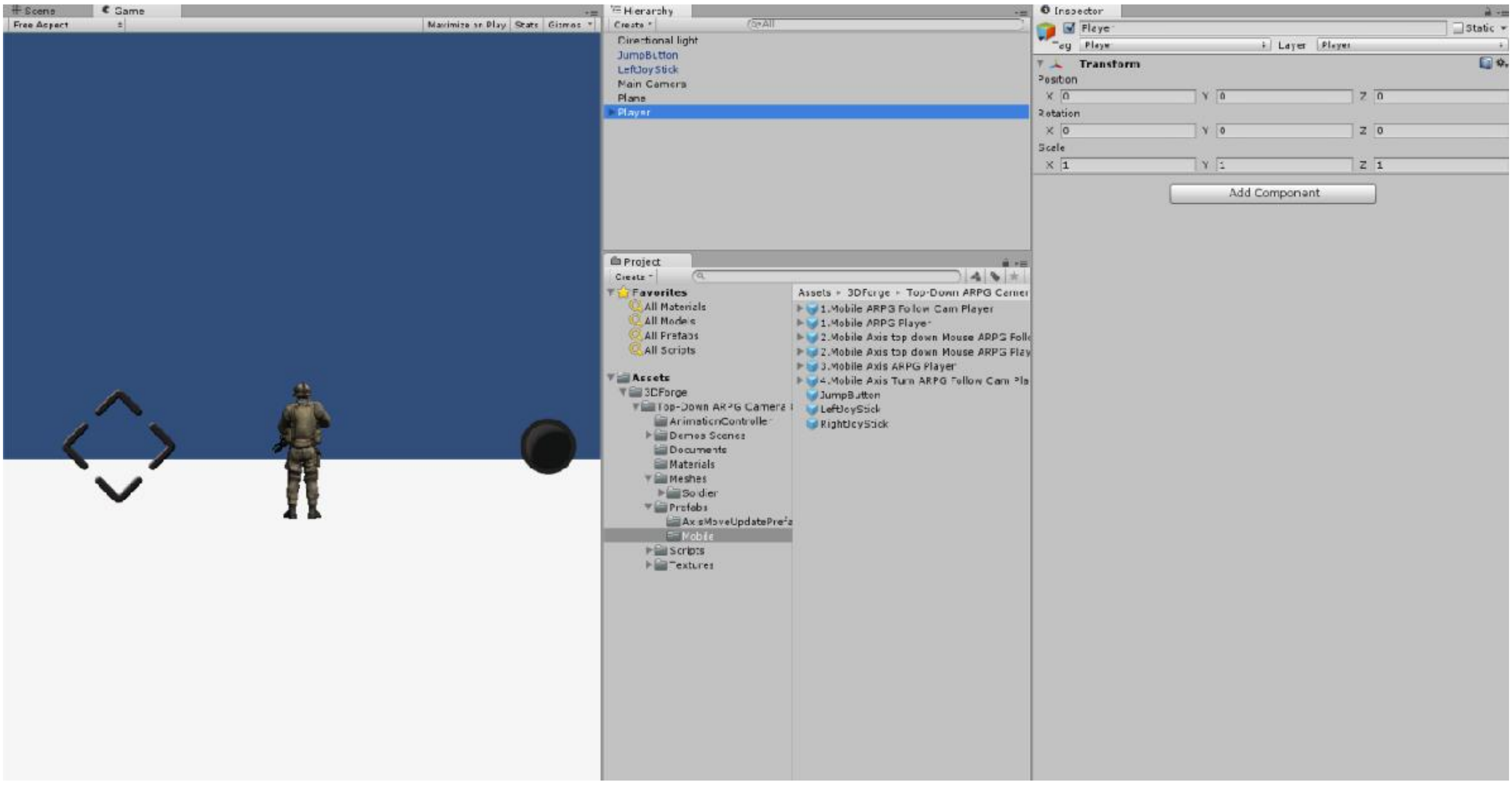


☑ Mobile ARPGPlayer Move (Script)
Script MobleARPGPlayerMove
Move Speed 8
Rotation Speed 8
Distance Error 0.5
Gravity 20
Ray Cast Distance 500
Layer Mask Mixed ...
Gui Positions
Size 3
Element 0
X 10
Y 10
Width 100
Height 50
Element 1
X 10
Y 60
Width 100
Height 50
Element 2
X 110
Y 60
Width 100
Height 50
Gui Positions XFrom Right
Size 3
Element 0 □
Element 1 □
Element 2 ☑
Gui Positions YFrom Bottom
Size 3
Element 0 □
Element 1 ☑
Element 2 ☑
Min Multi Input Touch Wait Time 0.8

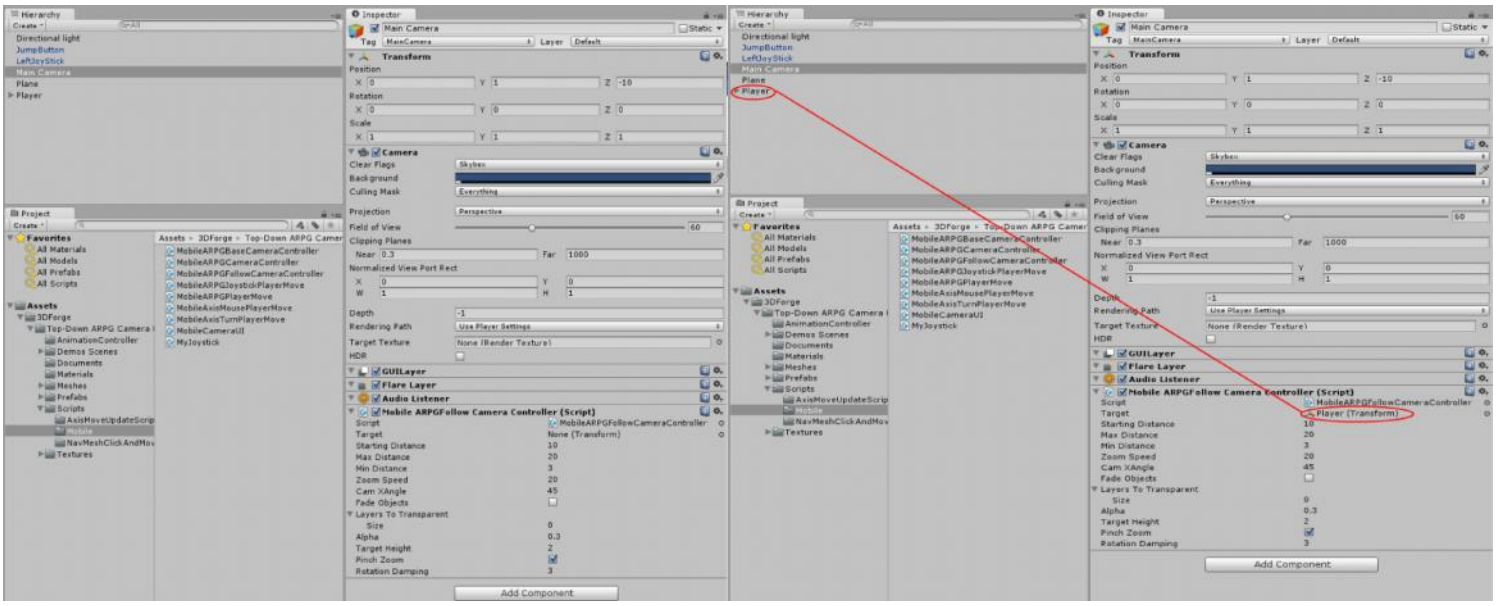
Setup 2

Setup guide for joystick move and turn with the follow camera.

1. Create a new scene and add a plane/terrain to the scene.
2. Create empty GameObject and move its position to (0, 0, 0).
3. Add your toon/character to the scene and move its position to (0, 0, 0).
4. Add your toon/character that is in the scene as a child object of the GameObject we added.
5. Keep the mainCamera outside in root hierachy .
6. Now we can rename the GameObject and set its tag and layer (See Setup 1.11) as player.
7. Add the left joystick prefab and the jumpButton prefab (Optional don’t need jump button). Prefabs can be found in Assets/3dForge/Top-Down ARPG Camera Controller/Prefabs/Mobile



8. Now we can add the scripts, let's start with the player move script. You can find the scripts under Assets/3DForge/ Top-Down ARPG Camera & Controller/Scripts/Mobile. We add the MobileAxisTurnPlayerMove.cs to the player (Parent) object. The Character Controller will be added automatically. Make sure the Character Controller is positioned correctly.
9. We then add the "MobileARPGFollowCameraController.cs" to the Main Camera as we are building follow camera. We can then set the target variable to the player game object.



☑ Main Camera □ Static
Tag MainCamera Layer Default

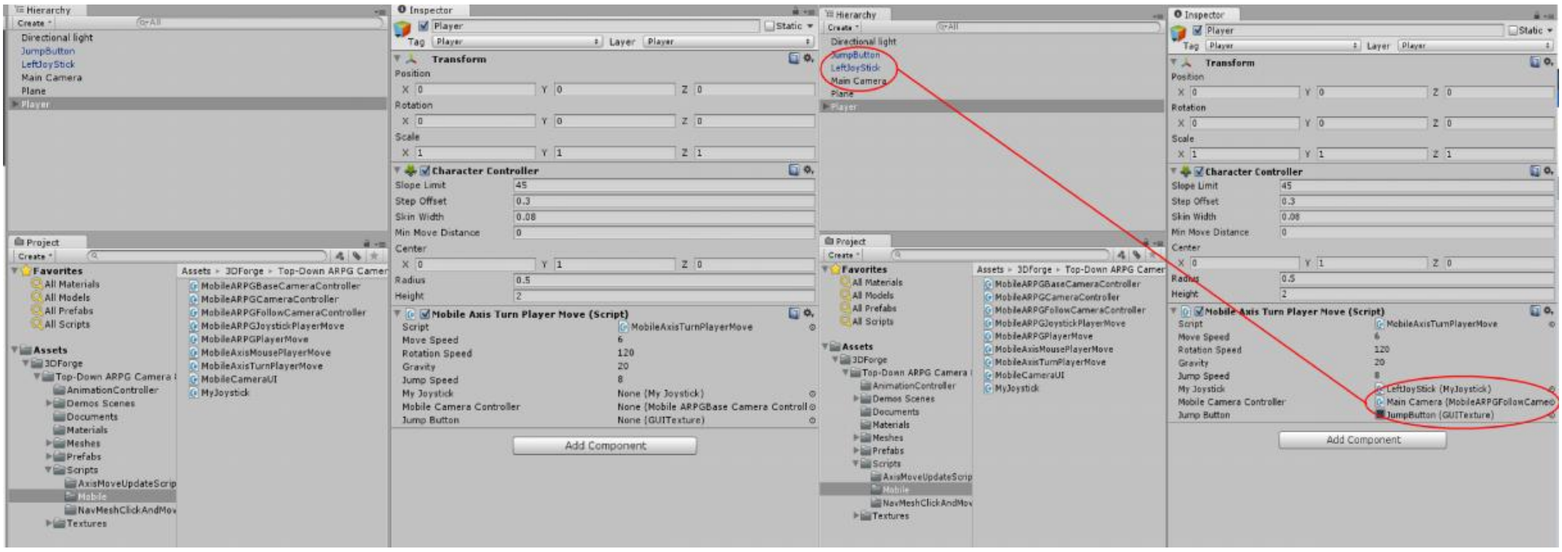
Transform
Position X 0 Y 1 Z -10
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

☑ Camera
Clear Flags Skybox
Background
Culling Mask Everything
Projection Perspective
Field of View 60
Clipping Planes Near 0.3 Far 1000
Normalized View Port Rect X 0 Y 0 W 1 H 1
Depth -1
Rendering Path Use Player Settings
Target Texture None (Render Texture)
HDR □

☑ GUILayer
☑ Flare Layer
☑ Audio Listener
☑ Mobile ARPGFollow Camera Controller (Script)
Script MobileARPGFollowCameraController
Target None (Transform)
Starting Distance 10
Max Distance 20
Min Distance 3
Zoom Speed 20
Cam XAngle 45
Fade Objects □
Layers To Transparent
Size 0
Alpha 0.3
Target Height 2
Pinch Zoom ☑
Rotation Damping 3

☑ Mobile ARPGFollow Camera Controller (Script)
Script MobileARPGFollowCameraController
Target Player (Transform)
Starting Distance 10
Max Distance 20
Min Distance 3
Zoom Speed 20
Cam XAngle 45
Fade Objects □
Layers To Transparent
Size 0
Alpha 0.3
Target Height 2
Pinch Zoom ☑
Rotation Damping 3

10. Now we add the mainCamera, jumpButton and LeftJoyStick to the player move script.



☑ Player □ Static
Tag Player Layer Player

Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1

☑ Character Controller
Slope Limit 45
Step Offset 0.3
Skin Width 0.08
Min Move Distance 0
Center X 0 Y 1 Z 0
Radius 0.5
Height 2

☑ Mobile Axis Turn Player Move (Script)
Script MobileAxisTurnPlayerMove
Move Speed 6
Rotation Speed 120
Gravity 20
Jump Speed 8
My Joystick None (My Joystick)
Mobile Camera Controller None (Mobile ARPGBase Camera Controll
Jump Button None (GUITexture)

☑ Mobile Axis Turn Player Move (Script)
Script MobileAxisTurnPlayerMove
Move Speed 6
Rotation Speed 120
Gravity 20
Jump Speed 8
My Joystick LeftJoyStick (MyJoystick)
Mobile Camera Controller Main Camera (MobileARPGFollowCame
Jump Button JumpButton (GUITexture)

11. See Setup 1 9-16 for the rest.

The rest of the controllers are similar to Setup 2.