EXOA

TOUCH CAMERA PRO - MANUAL

08/11/2021

Latest online Version is accessible here

INTRODUCTION

Touch Camera PRO is a really easy to use mobile and desktop camera controller with perspective switching!
It's working on both desktop and mobile devices! It supports translation, rotation around center, rotation around point, Zoom In/Out on both perspective and top down orthographic modes.
Other features : scene boundaries, object focusing, object following, camera reset in initial place.

HOW TO INSTALL

If these free packages were not downloaded automatically, you will need to install all of them from the asset store :

- DOTween (HOTween v2)
- Lean Touch

BASIC USE

1. Add both prefabs TouchCamera & TouchCameraInputs inside your scene

2. If you want to add boundaries to your camera, fill the CameraBoundaries component on the TouchCamera gameObject with a another gameObject (having a collider, see demos)

3. Edit parameters on the CameraPerspective & CameraTopDown components if needed.

COMPONENTS & PARAMETERS

Camera Mode Switcher

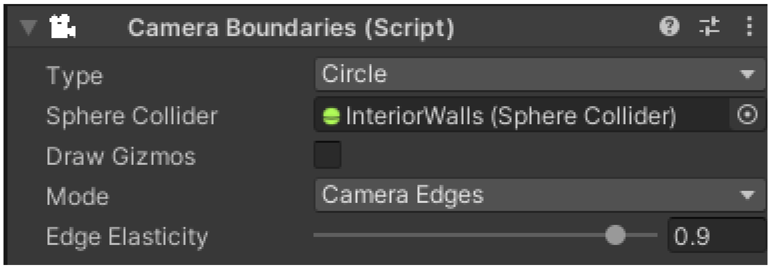
☑ Camera Mode Switcher (Script)

This component is needed only if you need to have two camera modes on your camera.

You can add a perspective camera mode (CameraPerspective) and an orthographic camera mode (CameraTopDownOrtho or CameraIsometricOrtho) and use the perspective switch feature thanks to CameraModeSwitcher.

With 2 camera modes you need to specify which one is the default one by checking "default mode".

Camera Boundaries



Camera Boundaries (Script)

Type: Circle

Sphere Collider: InteriorWalls (Sphere Collider)

Draw Gizmos: □

Mode: Camera Edges

Edge Elasticity: 0.9

Boundaries are meant to restrict your camera's position in the scene. Two shape types are supported, Rectangle and Circle. For Rectangle, you will have to fill the box collider field and for a circle, you will have to fill the sphereCollider field. Make sure that your sphere collider Y position is on the ground.

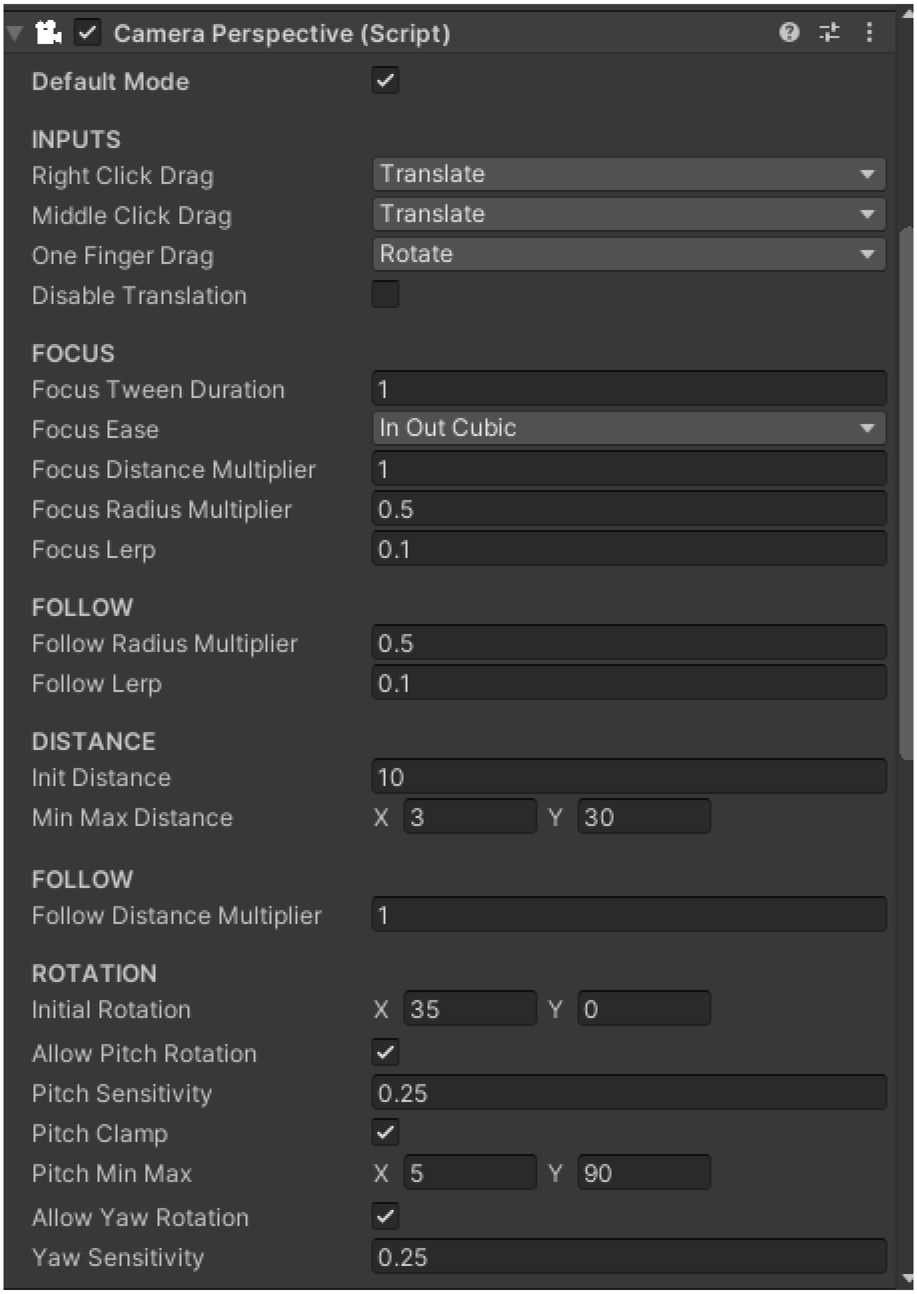
You can check the "draw gizmo" option to see how the boundaries are in the end calculated based on your collider.

The next important option is the boundary mode. "Camera Center" will restrict the camera view center on the ground inside the boundaries. "Camera Edges" will restrict the edges of the camera view projected on the ground inside the boundaries.

The second mode works great when the camera looks down (60°-90°) (top down or isometric modes) all four corners will be restricted. For the perspective mode, if you allow the camera to have an angle < 60° (Pitch Rotation) then only the bottom corners of the camera will be restricted in the boundaries.

The first mode (Camera Center) is calculated before the camera applies the movement, whereas the Edge Mode is calculated only after the camera has moved, as it's based on the frustum final state. This is why we apply an elastic effect in that case.

Camera Perspective



Camera Perspective (Script)

Default Mode	☑
INPUTS	
Right Click Drag	Translate
Middle Click Drag	Translate
One Finger Drag	Rotate
Disable Translation	☐
FOCUS	
Focus Tween Duration	1
Focus Ease	In Out Cubic
Focus Distance Multiplier	1
Focus Radius Multiplier	0.5
Focus Lerp	0.1
FOLLOW	
Follow Radius Multiplier	0.5
Follow Lerp	0.1
DISTANCE	
Init Distance	10
Min Max Distance	X 3 Y 30
FOLLOW	
Follow Distance Multiplier	1
ROTATION	
Initial Rotation	X 35 Y 0
Allow Pitch Rotation	☑
Pitch Sensitivity	0.25
Pitch Clamp	☑
Pitch Min Max	X 5 Y 90
Allow Yaw Rotation	☑
Yaw Sensitivity	0.25

Inputs: here you can specify what the mouse buttons are doing and also what one finger drag is doing on mobile. Two fingers drag will always be dedicated to zoom and rotate (pinch and twist) as it is the default behaviour with 2 fingers.

Focus: When you call the FocusCameraOnGameObject() feature, you can specify here the duration of the animation and the kind of easing. The distance and radius multipliers help to be closer or not from the game object while focusing.

Distance: This is specifying the default distance of the camera from the ground. You can also clamp that distance with a min/max value.

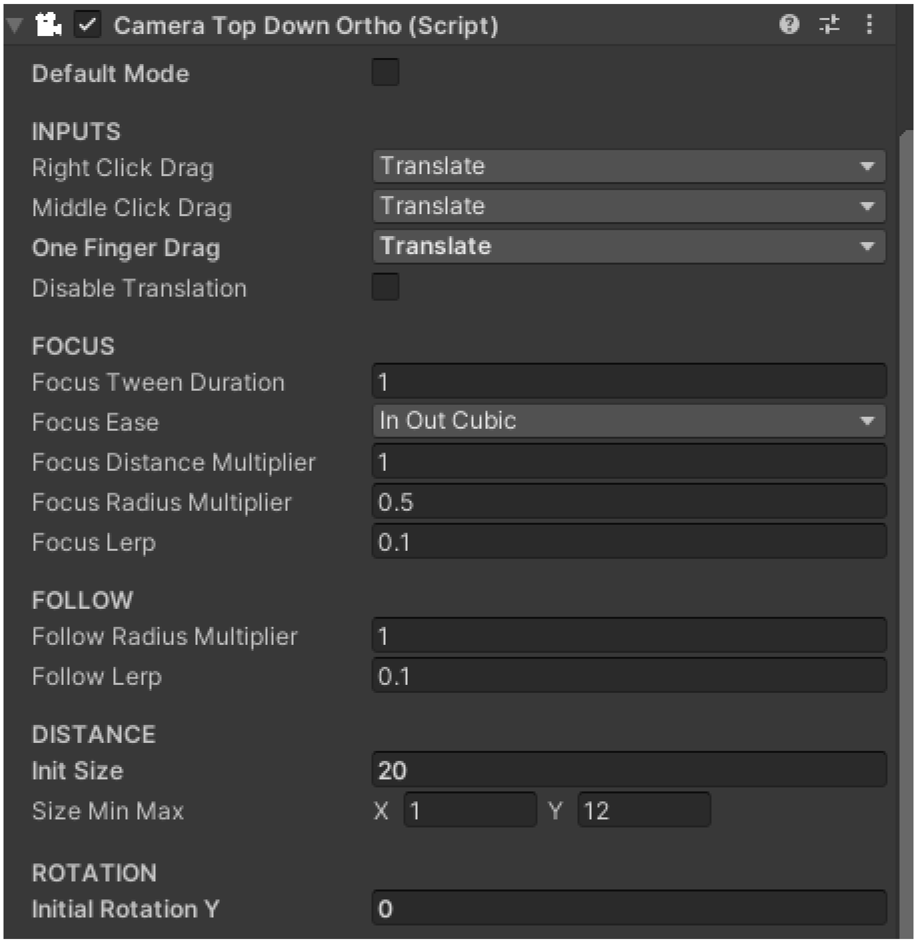
The distance changes when the user zooms in/out using the mouse scrollwheel or the pinch gesture.

Follow: Specifies how far the camera should be from the object we are following. This value will be multiplied by the object bounding box size.

Rotation: Yaw rotation is the rotation around the world Y axis, so there is no clamping as the camera can rotate all around Y.

The pitch rotation is around the X axis. 0° means that the camera is parallel to the ground, and 90° means that the camera is looking straight to the ground. I do not recommend to put the minimum pitch at 0° as that will cause issues with raycasting on the ground to move the camera.

Camera Top Down Ortho



Camera Top Down Ortho (Script)

Default Mode	□
INPUTS	
Right Click Drag	Translate
Middle Click Drag	Translate
One Finger Drag	Translate
Disable Translation	□
FOCUS	
Focus Tween Duration	1
Focus Ease	In Out Cubic
Focus Distance Multiplier	1
Focus Radius Multiplier	0.5
Focus Lerp	0.1
FOLLOW	
Follow Radius Multiplier	1
Follow Lerp	0.1
DISTANCE	
Init Size	20
Size Min Max	X 1 Y 12
ROTATION	
Initial Rotation Y	0

Inputs: here you can specify what the mouse buttons are doing and also what one finger drag is doing on mobile. Two fingers drag will always be dedicated to zoom and rotate (pinch and twist) as it is the default behaviour with 2 fingers.

Focus: When you call the FocusCameraOnGameObject() feature, you can specify here the duration of the animation and the kind of easing. The distance and radius multipliers help to be closer or not from the game object while focusing.

Distance: This is specifying the default distance of the camera from the ground. You can also clamp that distance with a min/max value.

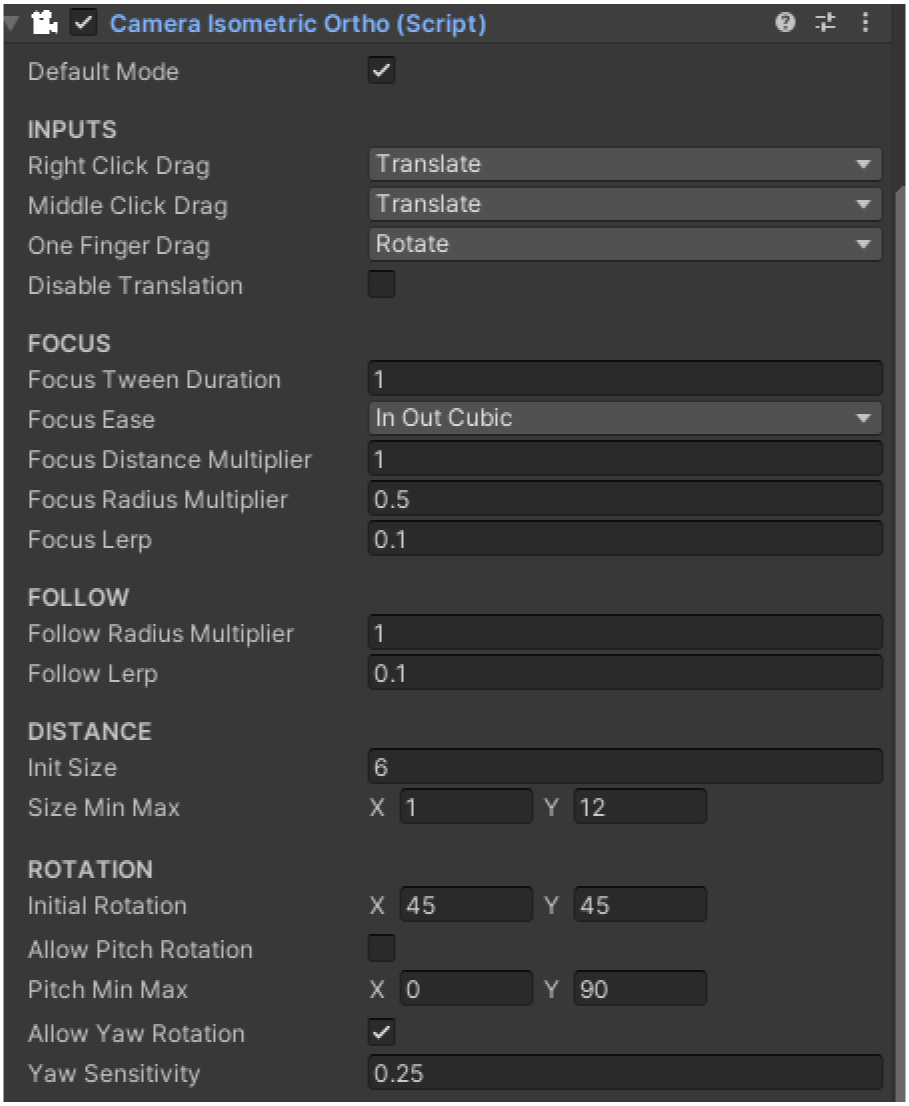
The distance changes when the user zooms in/out using the mouse scrollwheel or the pinch gesture.

In orthographic mode, the camera doesn’t move on his Z axis while zooming, so this is why we are using the camera size here instead of an actual distance.

Follow: Specifies how far the camera should be from the object we are following. This value will be multiplied by the object bounding box size.

Rotation: the only setting here is to set the initial world Y rotation (Yaw)

Camera Isometric Ortho



☑ Camera Isometric Ortho (Script)

Default Mode	☑
INPUTS	
Right Click Drag	Translate
Middle Click Drag	Translate
One Finger Drag	Rotate
Disable Translation	☐
FOCUS	
Focus Tween Duration	1
Focus Ease	In Out Cubic
Focus Distance Multiplier	1
Focus Radius Multiplier	0.5
Focus Lerp	0.1
FOLLOW	
Follow Radius Multiplier	1
Follow Lerp	0.1
DISTANCE	
Init Size	6
Size Min Max	X 1 Y 12
ROTATION	
Initial Rotation	X 45 Y 45
Allow Pitch Rotation	☐
Pitch Min Max	X 0 Y 90
Allow Yaw Rotation	☑
Yaw Sensitivity	0.25

Inputs: here you can specify what the mouse buttons are doing and also what one finger drag is doing on mobile. Two fingers drag will always be dedicated to zoom and rotate (pinch and twist) as it is the default behaviour with 2 fingers.

Focus: When you call the FocusCameraOnGameObject() feature, you can specify here the duration of the animation and the kind of easing. The distance and radius multipliers help to be closer or not from the game object while focusing.

Distance: This is specifying the default distance of the camera from the ground. You can also clamp that distance with a min/max value.

The distance changes when the user zooms in/out using the mouse scrollwheel or the pinch gesture.

In orthographic mode, the camera doesn't move on his Z axis while zooming, so this is why we are using the camera size here instead of an actual distance.

Follow: Specifies how far the camera should be from the object we are following. This value will be multiplied by the object bounding box size.

Rotation: Yaw rotation is the rotation around the world Y axis, so there is no clamping as the camera can rotate all around Y.

The pitch rotation is around the X axis. 0° means that the camera is parallel to the ground, and 90° means that the camera is looking straight to the ground. I do not recommend to put the minimum pitch at 0° as that will cause issues with raycasting on the ground to move the camera.

SWITCHING PERSPECTIVE

There are two ways to switch perspective in the demos, by pressing the “Space bar” or by clicking the camera icon. To change the key you can edit Inputs.cs in the ChangePlanMode() function.

The other way is done by triggering an event as follow :

```
CameraEvents.OnRequestButtonAction?.Invoke( CameraEvents.Action.SwitchPerspective, true);
```

If you only need one mode in your scene you can remove either the “CameraPerspective” or “CameraTopDownOrtho” component on the camera and check “default mode” on the one you keep.

FOCUSING ON A GAME OBJECT

In the demos, clicking on a cube will trigger a focus on that object. Check out the “FocusOnClick.cs” script to see how it’s done.

You basically just have to trigger an event like so :

```
CameraEvents.OnRequestObjectFocus?.Invoke(gameObject);
```

FOLLOWING A GAME OBJECT

In the demos, clicking on a moving cube will trigger a follow on that object. Check out the “FocusOnClick.cs” script to see how it’s done.

You basically just have to trigger an event like so :

```
CameraEvents.OnRequestObjectFollow?.Invoke(gameObject, focusOnFollow);
```

The focusOnFollow parameter is a boolean. A value at false, is to follow only the position of the object, keeping the same distance you control with inputs. Setting “true” would also lock the distance regarding the object size on screen. You can control the focus multiplier on the camera’s component properties.

RESET THE CAMERA POSITION

The new “Camera Reset” feature, helps to put the camera back in its initial position and rotation. In the demos it is done by clicking the “R” icon.

CameraEvents.OnRequestButtonAction?.Invoke(CameraEvents.Action.ResetCamera, true);

On the “camera perspective” component, you have a “init rotation” parameter to set the rotation x and y at start and triggering the ResetCamera event.

To change the camera default position/rotation/distance for the reset feature, you can now use this :

CameraModeSwitcher.Instance.SetResetValues(Vector3 offset, Quaternion rotation, float distance, float size);

There is also a SetResetValues(..) on each individual camera script. You can check the demo scene “Change_Reset_Position” for an example.

SIMULATING FINGERS TWIST AND PINCH

Thanks to Lean Touch, you can simulate the finger inputs. Pressing ALT + CLick on the ground will place a virtual “fingers center point” then holding the Ctrl key + clicking and dragging will let you simulate the pinch (scale) and twist (rotation) around a point on screen.

SHORTCUTS

SWITCH PERSPECTIVE

Press "Space Bar", or press the top right "camera" button

IN TOP DOWN ORTHOGRAPHIC MODE

Mouse Wheel : Zoom In/out

Left/Right/Middle Mouse Button Press & Drag : Drag Camera

IN PERSPECTIVE MODE

Mouse Wheel : Zoom In/out

Left/Middle Mouse Button Press & Drag : Drag Camera

Right Mouse Button Press & Drag : Rotate Around Center

TOUCH SIMULATION IN BOTH MODES

Alt+Left Mouse Button Click : Set the center point of the simulated fingers

Alt+Left Mouse Button Press & Drag : Drag Camera

Ctrl+Left Mouse button Press & Drag : Two fingers simulation for Pinch (Zoom In/Out) and Twist (Rotate around fingers center point)

DEMOS

Android and PC Demos are accessible here

ROADMAP

- Integrate with the New Input System from Unity
- Add a “Free Camera” system not focused on the ground.

OTHER PLUGINS

- Home Designer
- Floor Map Designer
- Level Designer
- Touch Camera Pro
- Assets Manager Pro
- Packages Manager Free
- Tutorial Engine

SUPPORT

Please post your questions and issues on the new forum : http://support.exoa.fr/

You can still contact me for anything else at contact@exoa.fr, but sometimes emails fall into my spam box and I don't notice them (especially if you use a custom domain name).