Car Controller Pro (Mobile Ready) Manual

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Thank you for buying the Car Controller Pro asset! Here I'll explain everything you need to know to make a professional car controller in Unity. Developing a racing car game by using this asset is very easy and fast. I made all the necessary assets that you need to make a car 3D model drivable.

I developed this asset by focusing on mobile device platforms so it comes with different touch input methods for controlling a car with mobile device inputs and sensors.

This asset saves you a lot of time and effort and you can focus your time and energy on designing and publishing your racing game. All the scripts are concise and easy to understand. I'll show you how to setup each car with different personality.

If you compare car controller pro with other car controllers on the asset store, you'll realize that it has shorter scripts and it is easier to understand. Some car controller assets on the asset store are developed with bad understanding of wheel physics in Unity. They use so many unnecessary codes and nonsense physic force managements in their scripts. By reading my scripts you'll understand how the Unity wheel physics really work then you can design hundreds of cars with different behavior and properties such as speed, acceleration and handling.

All the assets you've got in this package:

1. Car Controller Pro script for making a car model drivable. Very efficient and easy to expand. It's ready to run on mobile devices.
2. Touch input controllers for mobile devices. Four different methods for getting input from the user are implemented. Keyboard, touch keys, gyroscope(tilt) and touch wheel.
3. Scene manager scripts with loading scene. I implemented a scene manager for going between game scenes. You can use it in any type of games.
4. Camera manager script for changing the camera in play mode.
5. Speedometer script with a nice UI
6. Graphic quality manager script to change the graphic settings in play mode.
7. A nice and optimized racetrack 3D model that runs smoothly on cheap mobile devices.
8. Three high quality and optimized 3D car models with interior.
9. A nice skybox.
10. Two double sided material(shader). One for diffuse and one for transparent objects.
11. This manual. In this manual I'll show you how the Car Controller pro works so you'll be able to expand this script based on your needs.

How to run the demo?

To view the “Car Controller Pro” in action open the “CarSelection” scene from the “Scenes” folder and play it. It shows you 3 cars that you can choose from by clicking the left or right arrows on the screen. Then press the “Start Game” button.

Now the “Loading” scene appears for a few moments. This scene loads the “Main” scene in the background and shows a splash screen and a loading bar to the user. After the loading accomplished the “Main” scene would be shown and you can play with your car in the racetrack.

What are the UI elements?

On the screen there are different UI elements. At top right corner you see speedometer. At the bottom right corner, you see 3 touch buttons. Gas pedal, reverse(brake) pedal and handbrake pedal. On the left side of the screen you see a yellow button. This is the button that you can

click or touch it to change the controller type. By default, it is on the keyboard mode so you can control the car by the keyboard arrow keys. Also, the Space key is the handbrake in this mode. If you click on it one time it turns to the button mode. In this mode you can use the left and right arrow buttons on the screen to control the car. If you click it again it turns to Gyro. In this mode you can control the car by tilting your mobile device. Clicking one more time on it turns it to wheel. In this mode you can use the on-screen steering wheel controller to control the car.

At the top of yellow button, you see a camera button. By clicking it multiple times you can cycle through cameras in the play mode.

At the top left corner of the screen you see exit button. By clicking it you'll go back to the car selection screen.

Next to it is the "Restart" button. You can restart the game by clicking it.

The next button is the "Graphic" button. By clicking it you can change the graphic settings. It has 3 mode: Low, medium and high.

How to add a new drivable car?

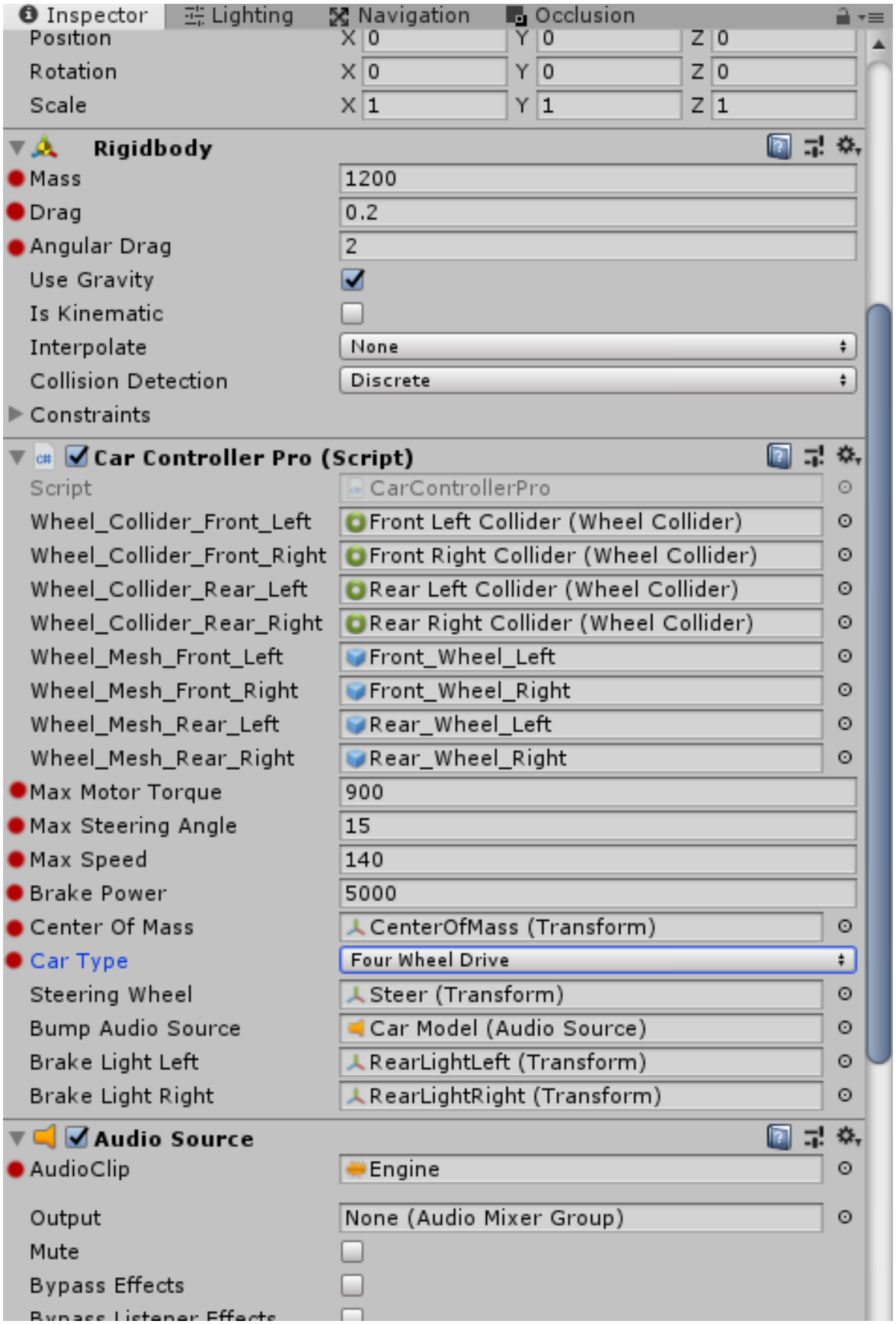
Before importing your car 3D model into Unity, you should check if your car dimensions are realistic. The Unity physics engine work in meter system so 1 unit is equal to 1 meter. Also, you need to provide a mesh that roughly match your car silhouette. We use it as a mesh collider and hide it so it won't be rendered. Also, your car should have a separate steering wheel mesh from other interior parts.

In this video I'll show you how to add a new drivable car.

Click here and watch it.

How to setup each car with different personality?

By changing some properties of the car, you can change its behavior. In racing games each car should has a different speed, acceleration, handling and so on. In the Car Controller Pro, you can set these properties easily.


Inspector
Lighting
Navigation
Occlusion
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1
Rigidbody
Mass 1200
Drag 0.2
Angular Drag 2
Use Gravity
Is Kinematic
Interpolate None
Collision Detection Discrete
Constraints
Car Controller Pro (Script)
Script CarControllerPro
Wheel_Collider_Front_Left Front Left Collider (Wheel Collider)
Wheel_Collider_Front_Right Front Right Collider (Wheel Collider)
Wheel_Collider_Rear_Left Rear Left Collider (Wheel Collider)
Wheel_Collider_Rear_Right Rear Right Collider (Wheel Collider)
Wheel_Mesh_Front_Left Front_Wheel_Left
Wheel_Mesh_Front_Right Front_Wheel_Right
Wheel_Mesh_Rear_Left Rear_Wheel_Left
Wheel_Mesh_Rear_Right Rear_Wheel_Right
Max Motor Torque 900
Max Steering Angle 15
Max Speed 140
Brake Power 5000
Center Of Mass CenterOfMass (Transform)
Car Type Four Wheel Drive
Steering Wheel Steer (Transform)
Bump Audio Source Car Model (Audio Source)
Brake Light Left RearLightLeft (Transform)
Brake Light Right RearLightRight (Transform)
Audio Source
AudioClip Engine
Output None (Audio Mixer Group)
Mute
Bypass Effects

On the root of the car prefab you'll see:

- Mass

  Changing the car mass affects its acceleration
- Drag

  Changing the car drag affects its acceleration
- Angular Drag

  Changing the car angular drag affects its handling. If you want a drifting car decrease its value. If you want prevent the car from drifting increase it.
- Max Motor Torque

  This the power applied to the car when user press the gas pedal. Higher values increase the car acceleration and responsiveness.
- Max Steering Angle

  This property set the max tire angles. Higher values make the car more sensitive to steering.
- Max Speed

  Here you can set the maximum car speed.
- Brake Power

  This is the brake power applied to the car when user press the brake button.
- Center of Mass

  It defines the center of mass of the car. By changing its position, you can prevent the car from roll over.
- Car Type

  Here you can define where the forces apply to the car. Front wheel drive, Rear wheel drive, Four-wheel drive. To make

the car more responsive I recommend to select Four-wheel drive mode.

- Audio Clip
  Here you can change the engine sound file.

What are the main scripts?

CarControllerPro.cs

This is the most important script in this package and should be placed at the root of your car game object. It defines the characteristics and behavior of the car.

GameManager.cs

This is the main script that handles the different inputs. It also manages the UI elements and object creation.

AutoCam.cs

Defines the camera settings.

Inside script files you can see more explanation in the comment sections.

For any question contact me:

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