



# 1.1 Start your 3D Engines

## Steps:

Step 1: Make a course folder and new project

Step 2: Import assets and open Prototype 1

Step 3: Add your vehicle to the scene

Step 4: Add an obstacle and reposition it

Step 5: Locate your camera and run the game

Step 6: Move the camera behind the vehicle

Step 7: Customize the interface layout

Example of project by end of lesson



**Length:** 70 minutes

**Overview:** In this lesson, you will create your very first game project in Unity Hub. You will choose and position a vehicle for the player to drive and an obstacle for them to hit or avoid. You will also set up a camera for the player to see through, giving them a perfect view of the scene. Throughout this process, you will learn to navigate the Unity Editor and grow comfortable moving around in 3D Space. Lastly, you will customize your own window layout for the Unity Editor.

**Project Outcome:** You will have a vehicle and obstacle positioned on the road and the camera set up perfectly behind the vehicle. You will also have a new custom Unity layout, perfectly optimized for editing.

**Learning Objectives:** By the end of this lesson, you will be able to:

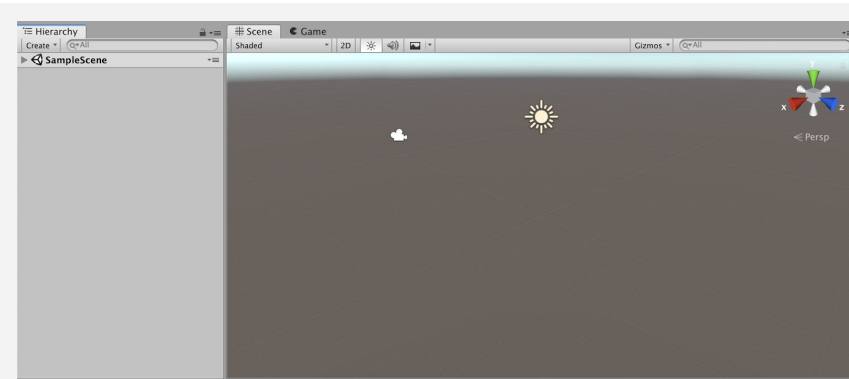
- Create a new project through Unity Hub
- Navigate 3D space and the Unity Editor comfortably
- Add and manipulate objects in the scene to position them where you want
- Position a camera in an ideal spot for your game
- Control the layout of Unity Editor to suit your needs

## Step 1: Make a course folder and new project

The first thing we need to do is create a folder that will hold all of our course projects, then create a new Unity project inside it for *Prototype 1*.

1. On your **desktop** (or somewhere else you will remember),  
Right-click > create **New Folder**, then name it "Create with Code"
2. Open **Unity Hub** and click **New**
3. Name the project "Prototype 1", select the correct **version of Unity**, set the location to the new "**Create with Code**" folder, and select the **3D** template
4. Click **Create Project**, then wait for Unity to open

- **Don't worry:** Unity might take a while to open, so just give it some time

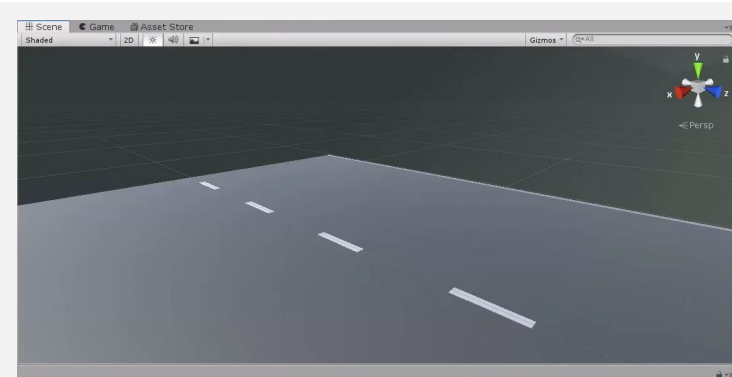


## Step 2: Import assets and open Prototype 1

Now that we have an empty project open, we need to import the assets for *Prototype 1* and open the scene

1. Click on one of the links to access the *Prototype 1* starter files, then **download** and **import** them into Unity
2. In the **Project** window, in *Assets > Scenes >* double-click on the **Prototype 1 scene** to open it
3. Delete the **Sample Scene** without saving
4. **Right-click + drag** to look around at the start of the road

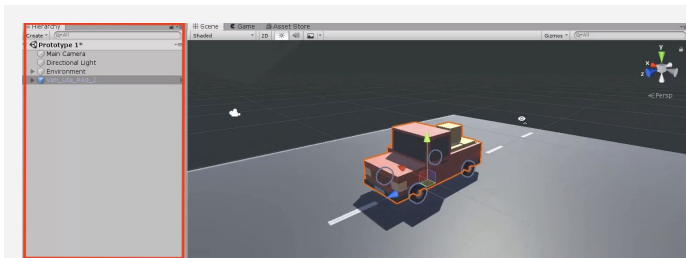
- **Warning:** You're free to look around, but don't try moving yet
- **Warning:** Be careful playing with this interface, don't click on anything else yet
- **New Concept:** Project Window



## Step 3: Add your vehicle to the scene

Since we're making a driving simulator, we need to add our own vehicle to the scene.

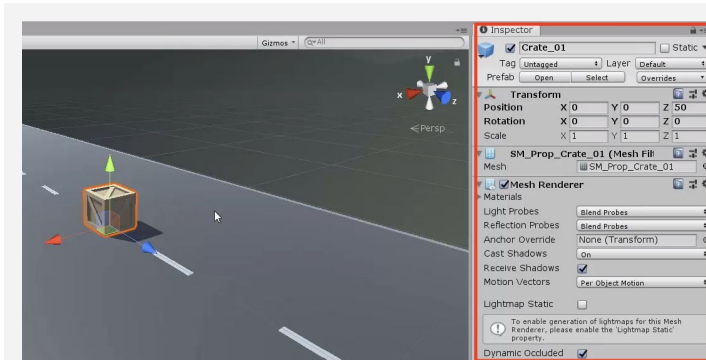
1. In the **Project Window**, open *Assets > Course Library > Vehicles*, then drag a vehicle into the **Hierarchy**
  2. **Hold right-click + WASD** to fly to the vehicle, then try to rotate around it
  3. **Press F** in the Scene view to focus on it, then use the **scroll wheel** to zoom in and out and **hold the scroll wheel** to pan
  4. Press F to focus on it, **hold alt+left-click** to rotate around it perfectly
  5. If anything goes wrong, press **Ctrl/Command+Z** to Undo until it's fixed
- **New:** Hierarchy
  - **New: Undo** (Cmd/Ctrl + Z) and **Redo** (Cmd+Shift+Z / Ctrl+Y)
  - **Warning:** Mouse needs to be in scene view for F/focus to work
  - **New Technique:** Scroll Wheel for Zoom and Pan



## Step 4: Add an obstacle and reposition it

The next thing our game needs is an obstacle! We need to choose one and position it in front of the vehicle.

1. Go to *Course Library > Obstacles* and **drag an obstacle** directly into **scene view**
  2. In the Inspector for your obstacle, in the top-right of the Transform component, click the *Gear Icon > Reset Position*
  3. In the **Inspector**, change the **XYZ Location** to **0,0,25**
  4. In the hierarchy, *Right-click > Rename* your two objects as "Vehicle" and "Obstacle"
- **New Concept:** XYZ location, rotation and scale
  - **New Concept:** Inspector

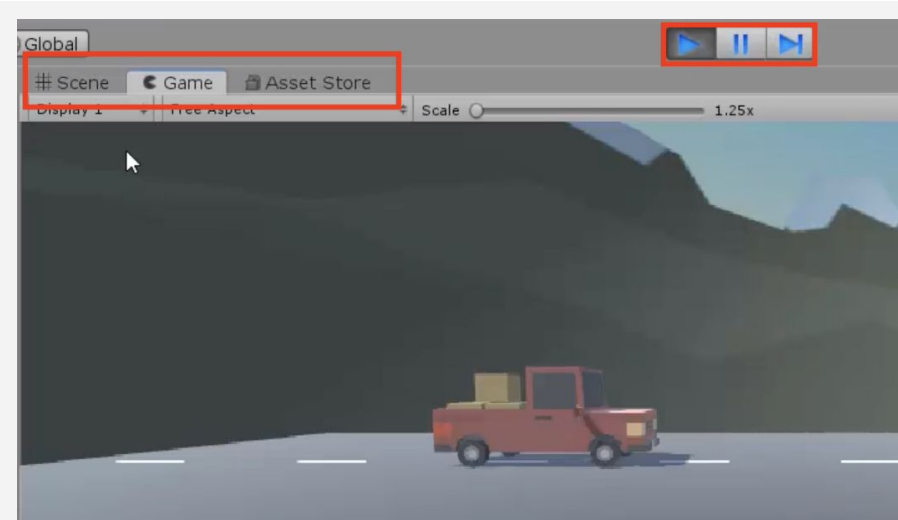


## Step 5: Locate your camera and run the game

Now that we've set up our vehicle and obstacle, let's try running the game and looking through the camera.

1. Select the **Camera** in the hierarchy, then **press F** to focus on it
2. Press the **Play button** to run your Game, then press Play again to **stop** it

- **New Concept:** Game View vs Scene View
- **New Technique:** Stop/Play (Cmd/Ctrl + P)

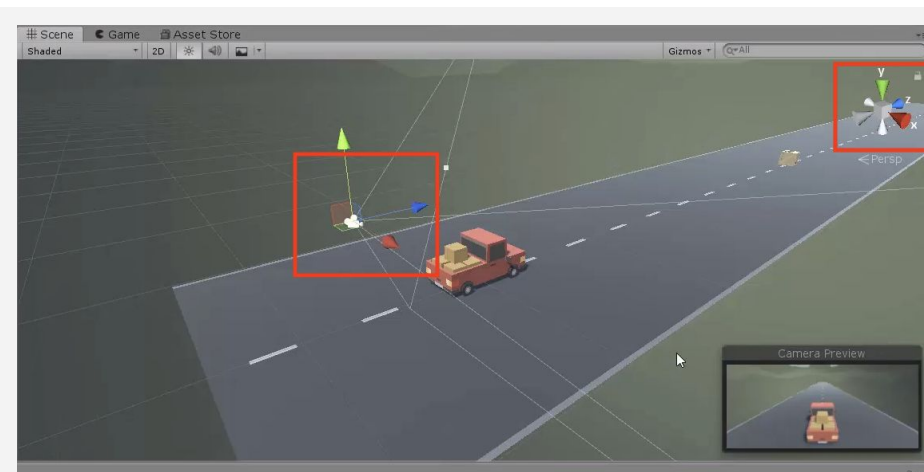


## Step 6: Move the camera behind the vehicle

In order for the player to properly view our game, we should position and angle the camera in a good spot behind the vehicle

1. Use the **Move** and **Rotate** tools to move the camera behind the vehicle looking down on it
2. **Hold Ctrl/Cmd** to move the camera by whole units

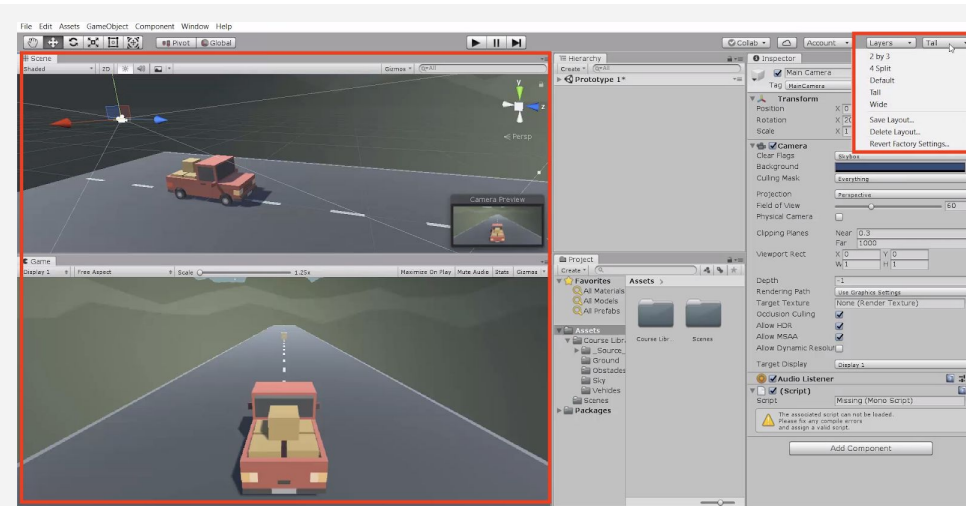
- **New Technique:** Snapping (Cmd/Ctrl + Drag)
- **New Concept:** Rotation on the XYZ Axes



## Step 7: Customize the interface layout

Last but not least, we need to customize the Unity Editor layout so that it's perfect for editing our project.

1. In the top-right corner, change the layout from "Default" to "**Tall**", - **New Concept: Layouts**
2. Move **Game view** beneath Scene view
3. In the **Project** window, click on the little drop-down menu in the top-right and choose "**One-column layout**"
4. In the layout Dropdown, **save a new Layout** and call it "**My Layout**"



## Lesson Recap

### New Functionality

- Project set up with assets imported
- Vehicle positioned at the start of the road
- Obstacle positioned in front of the vehicle
- Camera positioned behind vehicle

### New Concepts and Skills

- Create a new project
- Import assets
- Add objects to the scene
- Game vs Scene view
- Project, Hierarchy, Inspector windows
- Navigate 3D space
- Move and Rotate tools
- Customize the layout

### Next Lesson

- We'll really make this interactive by writing our first line of code in C# to make the vehicle move and have it collide with other objects in the scene