



UNREAL
ENGINE

HOUR 1

Your First Project:
Learning the UE4 Editor Interface

INTRODUCTION

In this lecture, you will create your first project, learn to navigate the Editor interface, and learn to move around a Level in the Editor and playtest the default map.



LECTURE GOALS AND OUTCOMES

Goals

The goals of this lecture are to

- Learn to create a new project
- Learn the Level Editor interface
- Learn how to navigate a Level in the Viewport
- Learn to playtest a Level

Outcomes

By the end of this lecture you will be able to

- Create a new project
- Understand the Level Editor interface
- Navigate a Level in the Viewport
- Playtest a Level



CREATING A NEW PROJECT

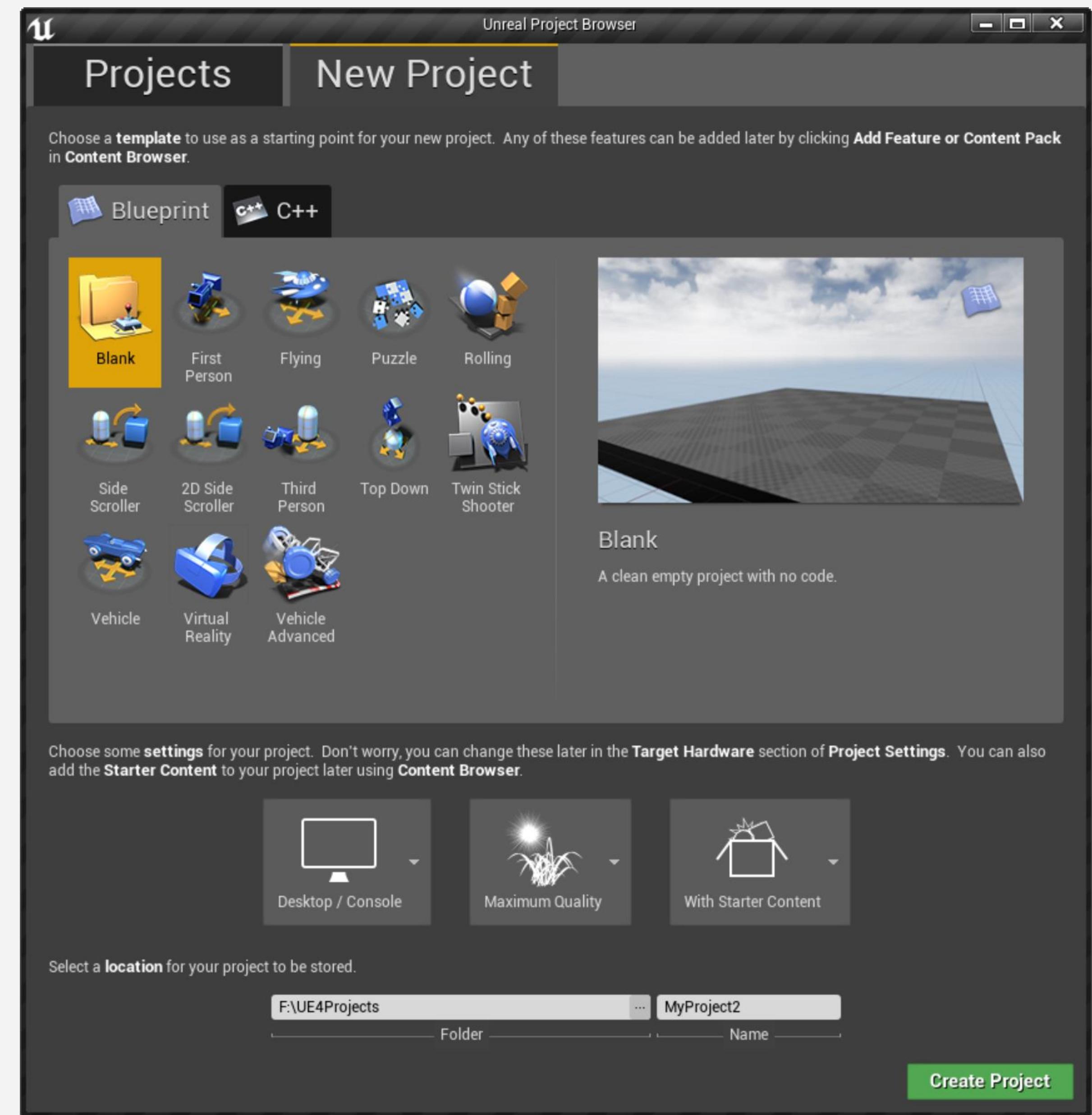
Level Editor



PROJECT BROWSER

When you launch UE4, it opens the Project Browser.

- The Projects tab shows you all the projects you are currently working on.
- The New Project tab is used for creating new projects based on existing common Game Mode templates.

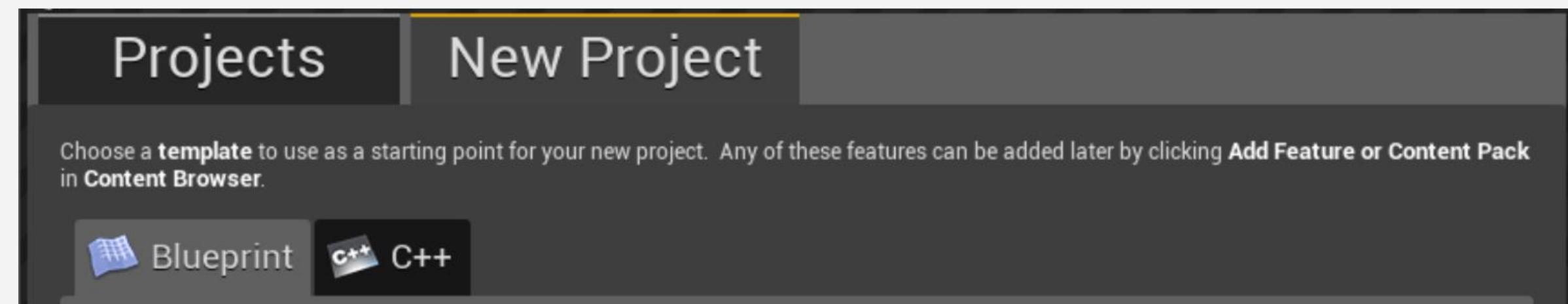




NEW PROJECT TAB

From the Project Browser, you can create a Blueprint-based project or a C++-based project.

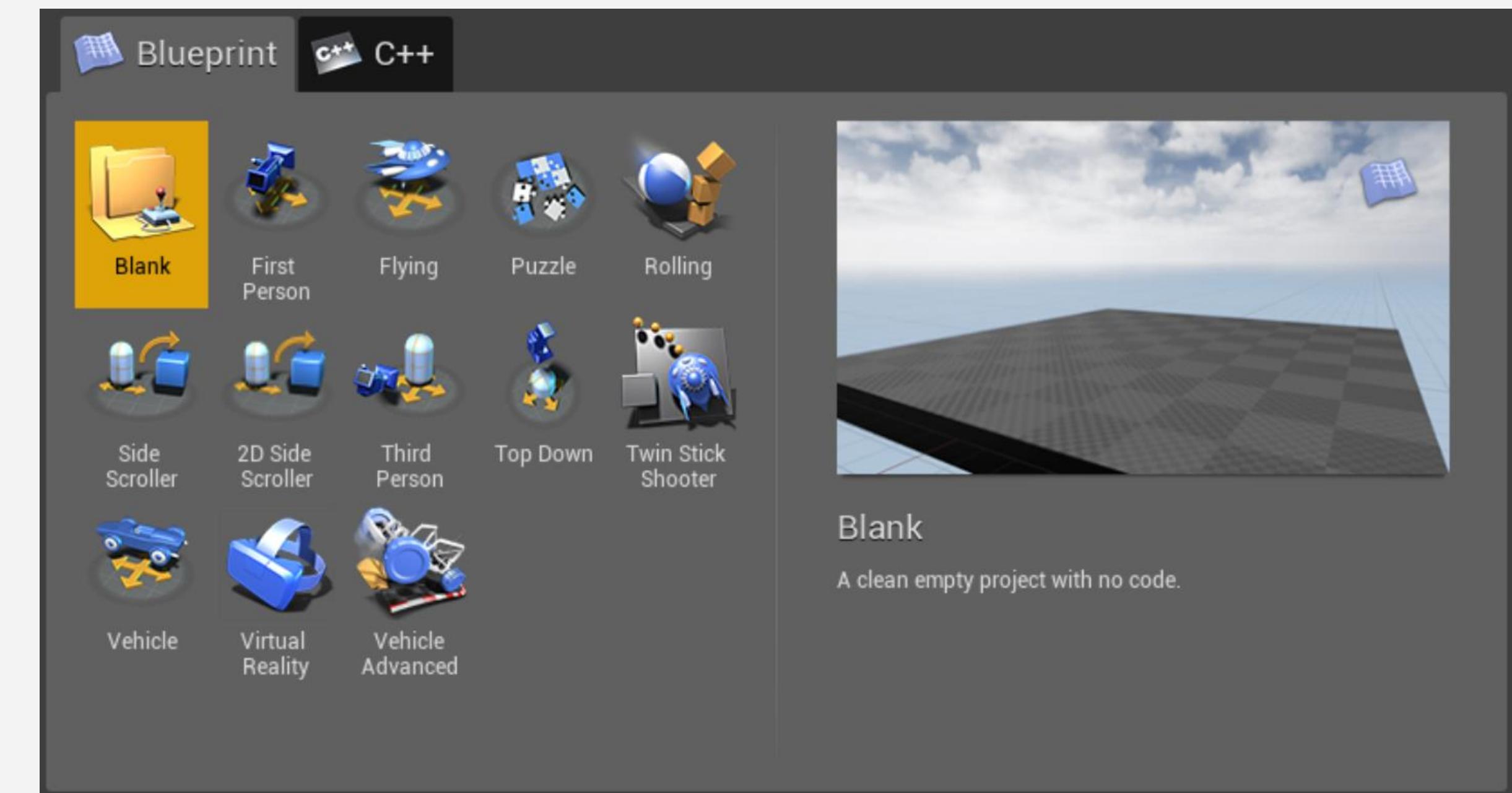
- Blueprint is the visual scripting environment used to script functionality for a game project.
- C++-based projects allow users to program functionality in the traditional manner of writing code.





GAME MODE TEMPLATES

Game Mode templates are common game types built around the Gameplay Framework. There are templates for both Blueprint- and C++-based projects.





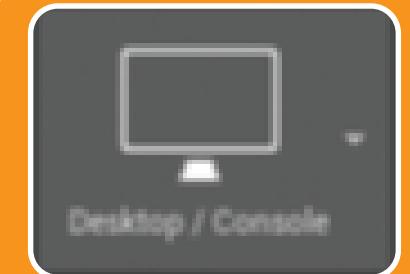
PROJECT SETTINGS

The Project Settings tab allows you to select base project settings, such as target hardware and graphics quality, and to include some basic assets to work with.

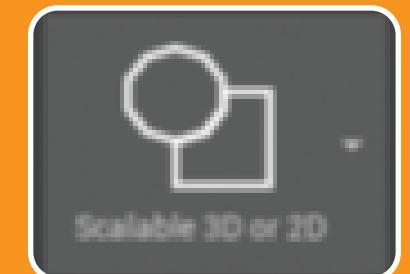
Choose some **settings** for your project. Don't worry, you can change these later in the **Target Hardware** section of **Project Settings**. You can also add the **Starter Content** to your project later using **Content Browser**.

Select a **location** for your project to be stored.

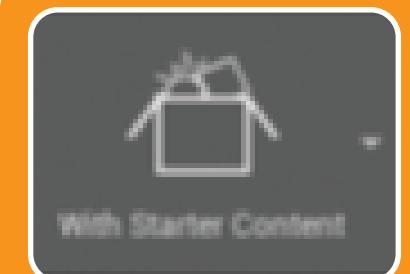
F:\UE4Projects ... MyProject2 Folder Name **Create Project**



Target hardware: You can choose either Desktop/Console or Mobile/Tablet.



Target graphics: You can choose between Maximum Quality and Scalable 3D or 2D. These options change the project's default settings for content development.



Starter content: You can add basic assets to your project to work with.



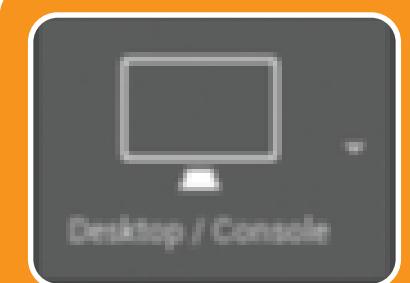
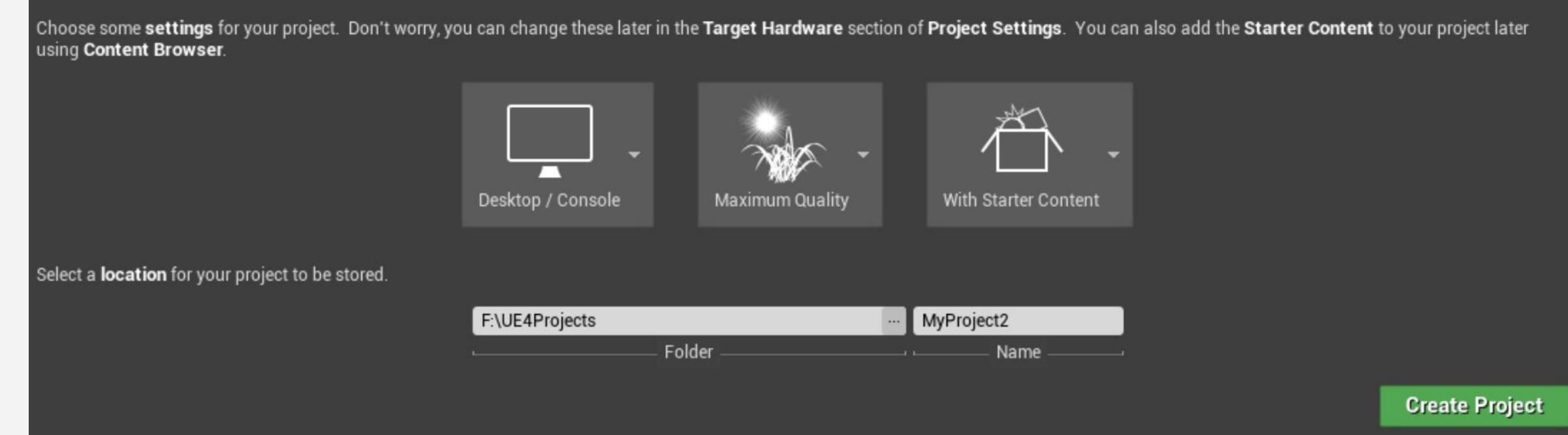
SAVING YOUR PROJECT

Once you have made your desired selections, you need to name your project.

Ensure the folder you choose is on a drive with ample storage space.

Press Create Project to save your project to the hard drive.

Note: Project locations can be changed by closing the Editor, moving the project folder, and then relaunching the Editor and opening the project from its new location.



Target hardware: You can choose either Desktop/Console or Mobile/Tablet.



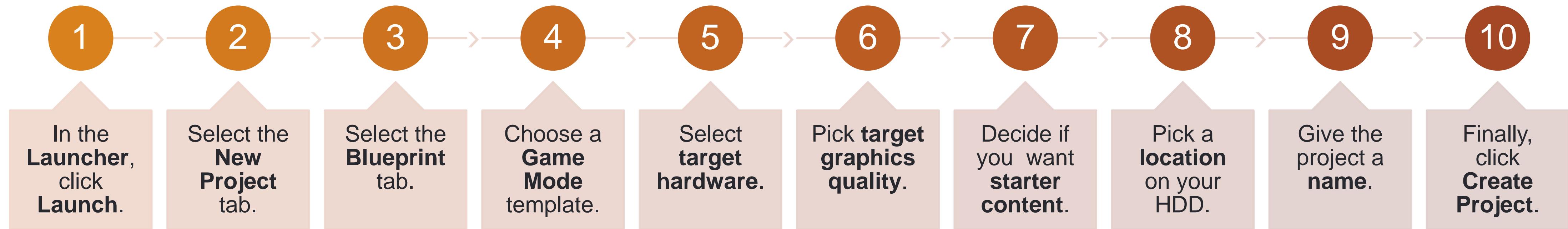
Target graphics: You can choose between Maximum Quality and Scalable 3D or 2D. These options change the project's default settings for content development.



Starter content: You can add basic assets to your project to work with.



Creating a New Project



Process for creating a new Level



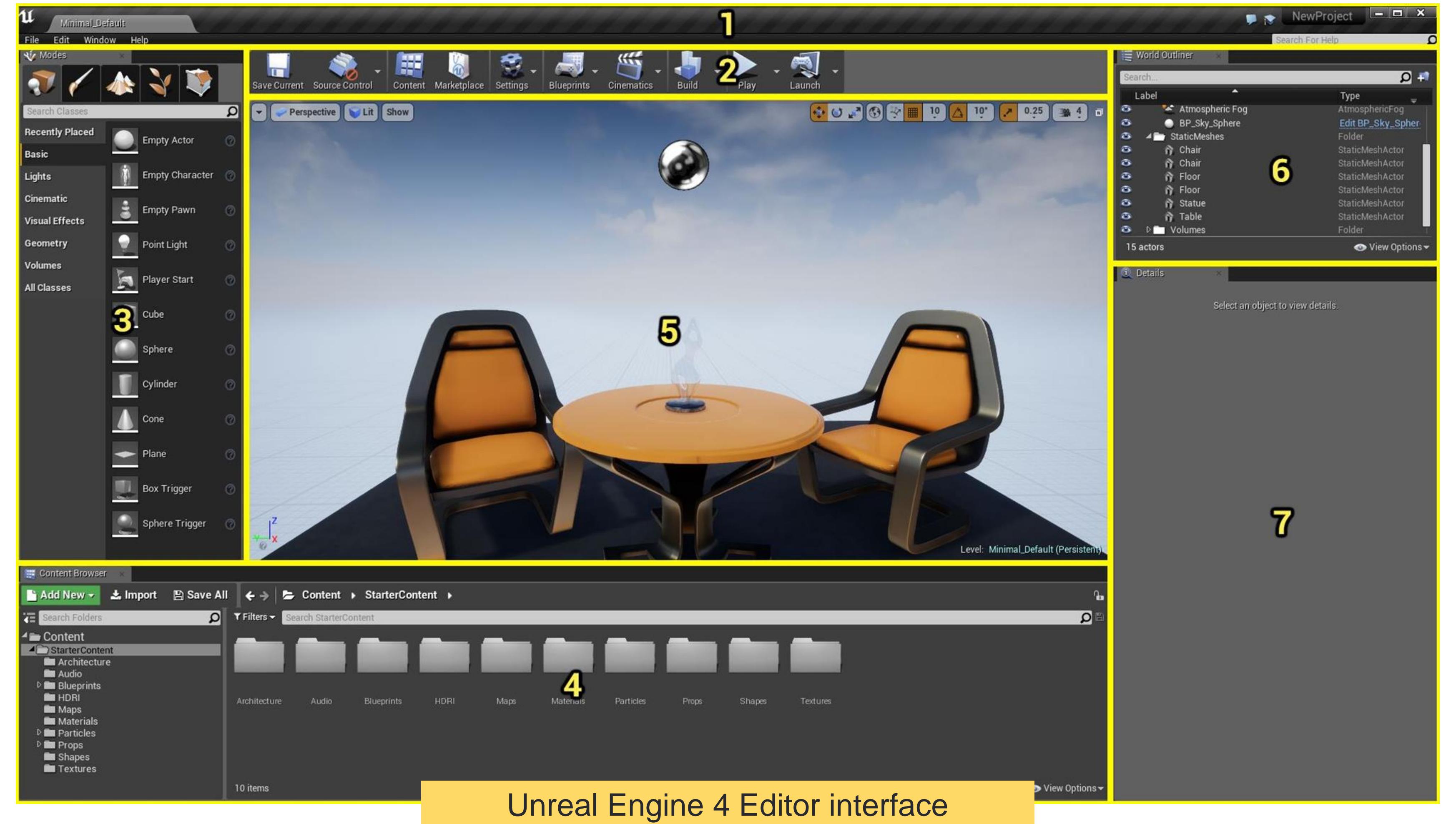
Exercise: Create a New Project

Create a new Blueprint project using the following:

- Third Person template
- Desktop/Console
- Maximum Quality
- With Starter Content

MAIN INTERFACE

Level Editor



UNREAL ENGINE 4 EDITOR INTERFACE

The main UE4 Editor interface, referred to as the Level Editor, is primarily used for world and Level building and for asset placement.

1. Menu bar
2. Level Editor toolbar
3. Modes panel
4. Content Browser panel
5. Viewport panel
6. World Outliner panel
7. Details panel



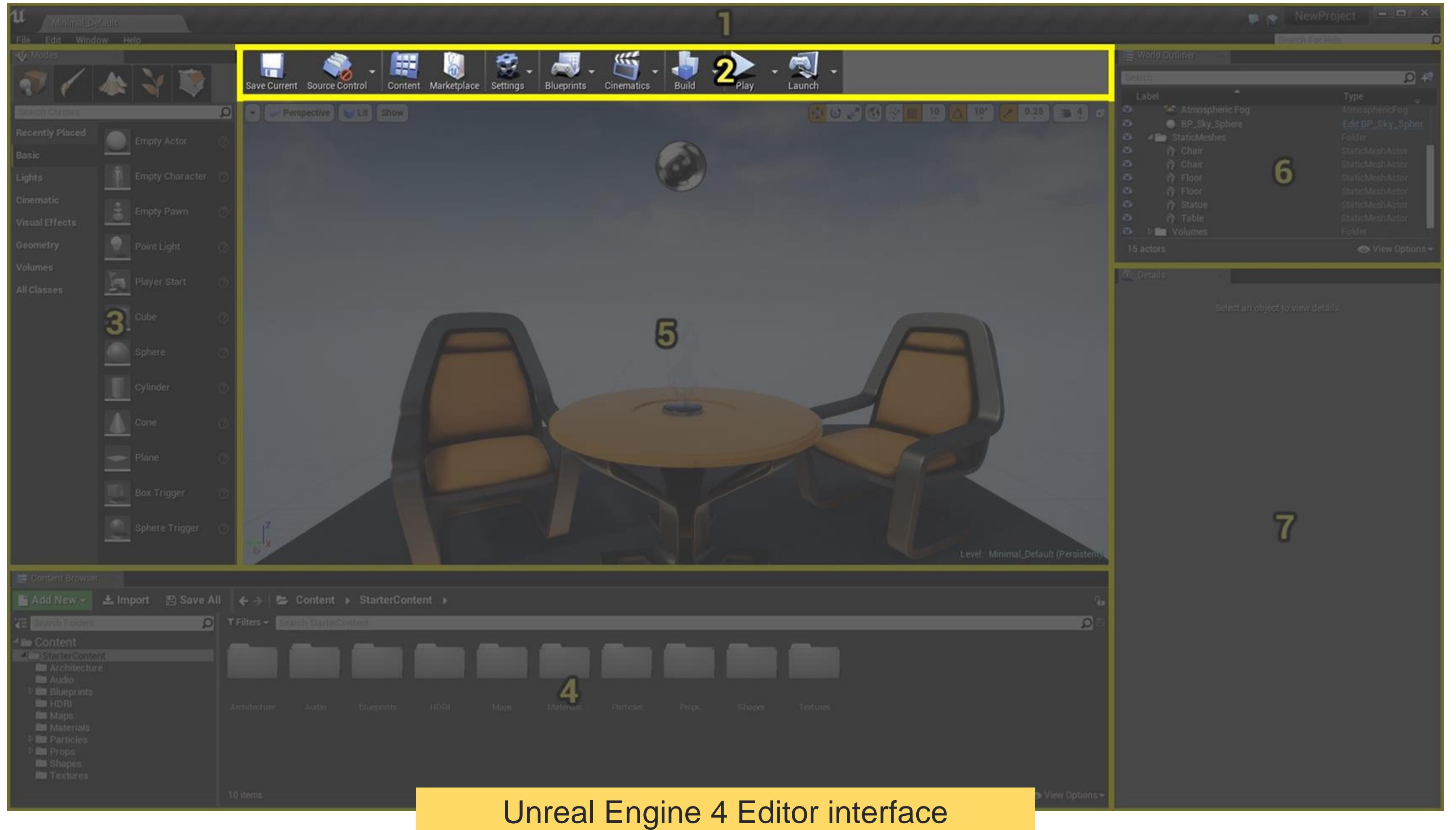


1. MENU BAR

The menu bar consists of File, Edit, Window, and Help menus.

- **File** contains operations for loading and saving projects and Levels.
- **Edit** has your standard copy and paste operations, as well as Editor preferences and project settings.
- **Window** opens Viewports and other panels.
- **Help** contains links to external resources, such as online documentation and tutorials.





2. TOOLBAR

The Level Editor toolbar provides quick access to commonly used tools and operations, such as

- Saving the current Level
- Building precalculated lighting for static Actors
- Changing Editor display properties
- Playtesting the current Level





3. MODES PANEL

The Modes panel displays the various editing modes. It allows for specific editing interfaces for working with different types of Actors.





MODES PANEL

The Modes panel allows you to change the current focus of the Editor. You can select a specialized task, such as

- Placing new Actors in a Level
- Painting vertex color data on meshes
- Creating and editing Landscapes
- Applying foliage to a Level
- Creating BSP brushes and volumes



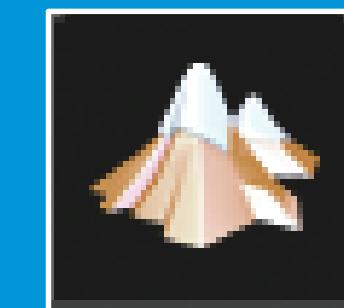
Place mode

Contains default classes that can be placed in a Level as Actors (for example, Point Light class, Static Mesh class, Box Trigger class).



Paint mode

Used for painting vertex color data on Static Mesh Actors.



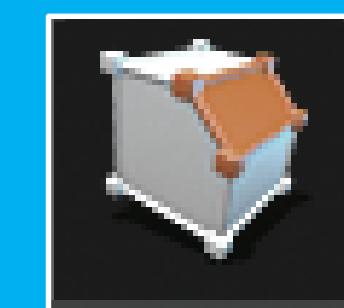
Landscape mode

Used for creating and editing Landscape Terrain Actors.



Foliage mode

Used for painting instanced Foliage Actors in a Level.



Geometry Editing mode

Used for editing BSP Brush Actors on the vertex edge face Level.



4. CONTENT BROWSER

The Content Browser is the primary area for creating, importing, organizing, viewing, and modifying content assets within the Unreal Editor.

It also provides the ability to manage content folders and perform other useful operations on assets, such as renaming, moving, copying, and viewing references.

The Content Browser can search for and interact with all assets in the game.

Note: Once an asset is placed in a Level, it's referred to as an Actor.



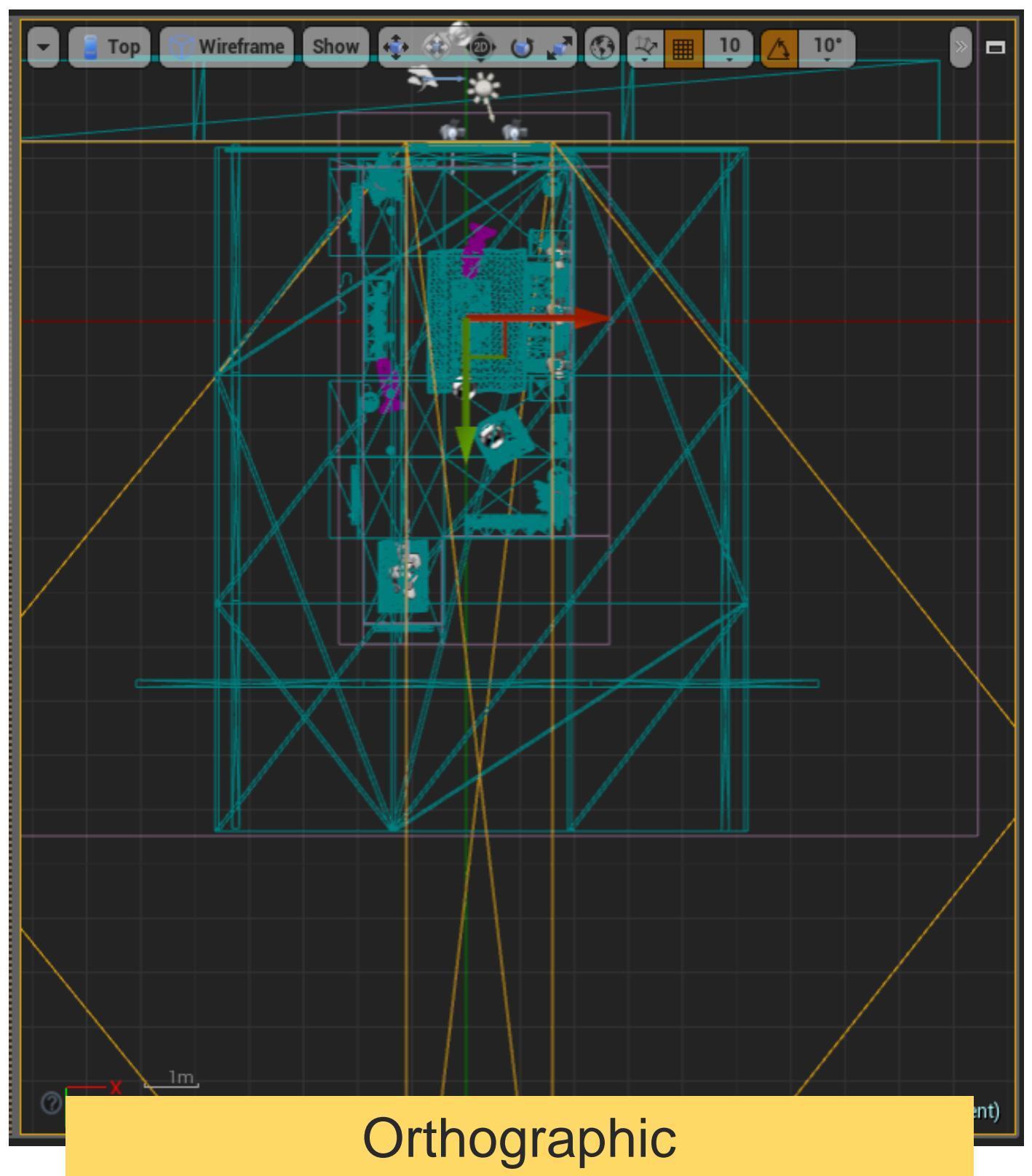
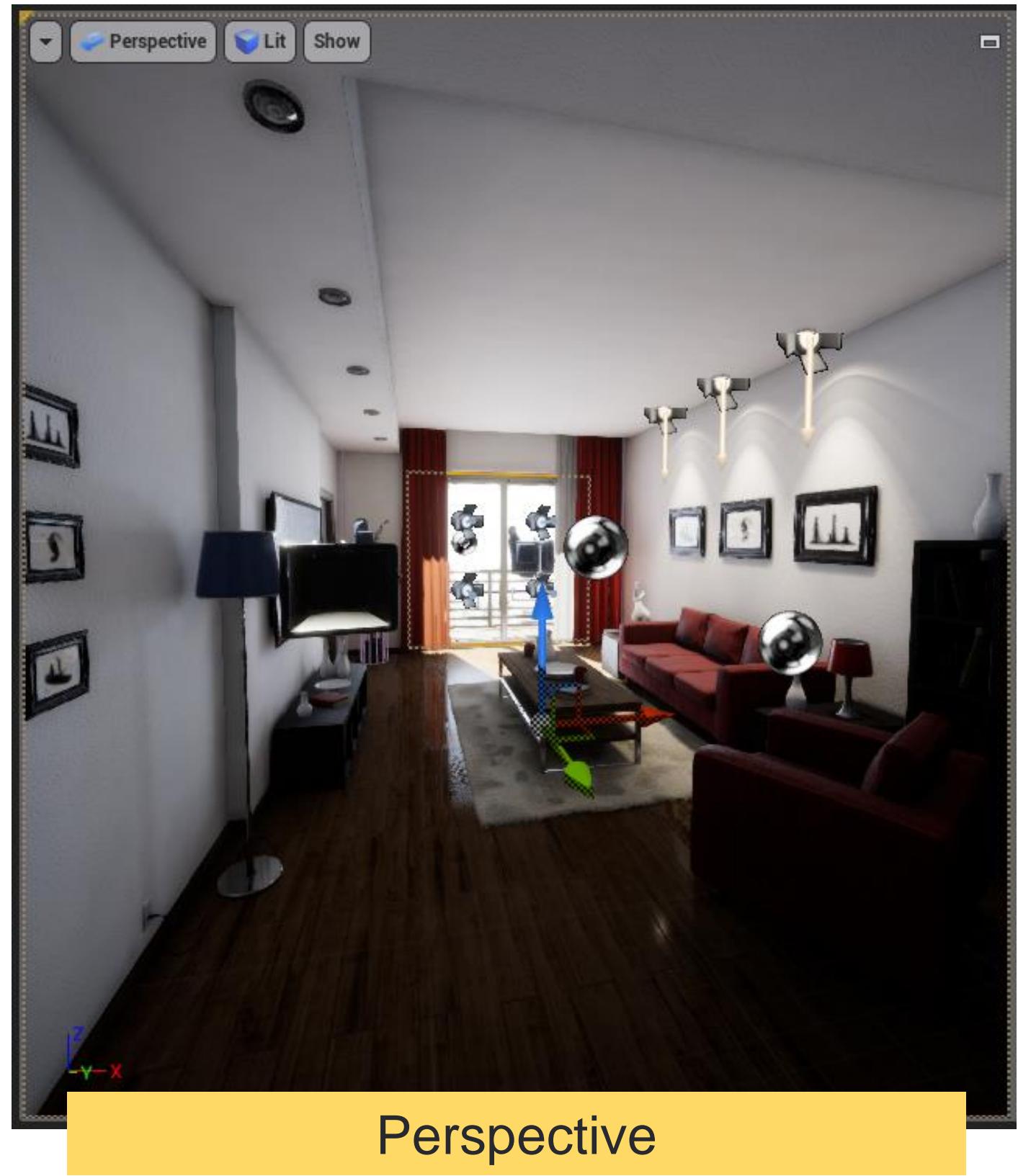


5. VIEWPORTS

The Viewports are your window into the worlds you create in Unreal. They can be navigated just as you would in a game, or they can be used in a more schematic design sense, as you would for an architectural blueprint.

The Unreal Editor Viewports contain a variety of tools and visualizers to help you see exactly the data you need.





Perspective Viewports

Perspective Viewports display the world in 3D with vanishing points.

Orthographic Viewports

Orthographic Viewports show the world in a 2D schematic view.

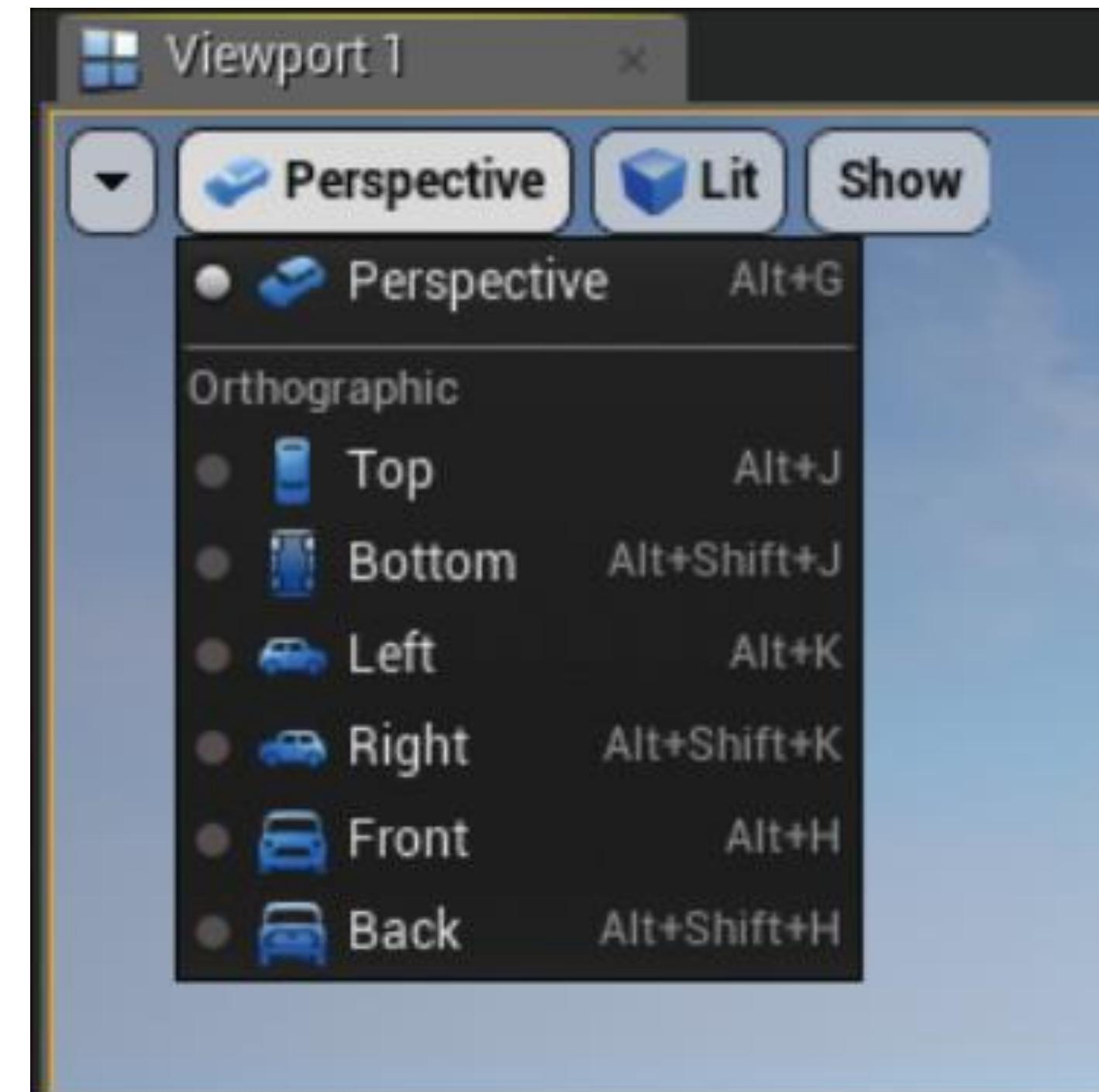




VIEWPORT TYPES

There are seven standard Viewport types: one perspective and six orthographic.

- Perspective (Alt+G)
- Top (Alt+J)
- Bottom (Alt+Shift+J)
- Left (Alt+K)
- Right (Alt+Shift+K)
- Front (Alt+H)
- Back (Alt+Shift+H)



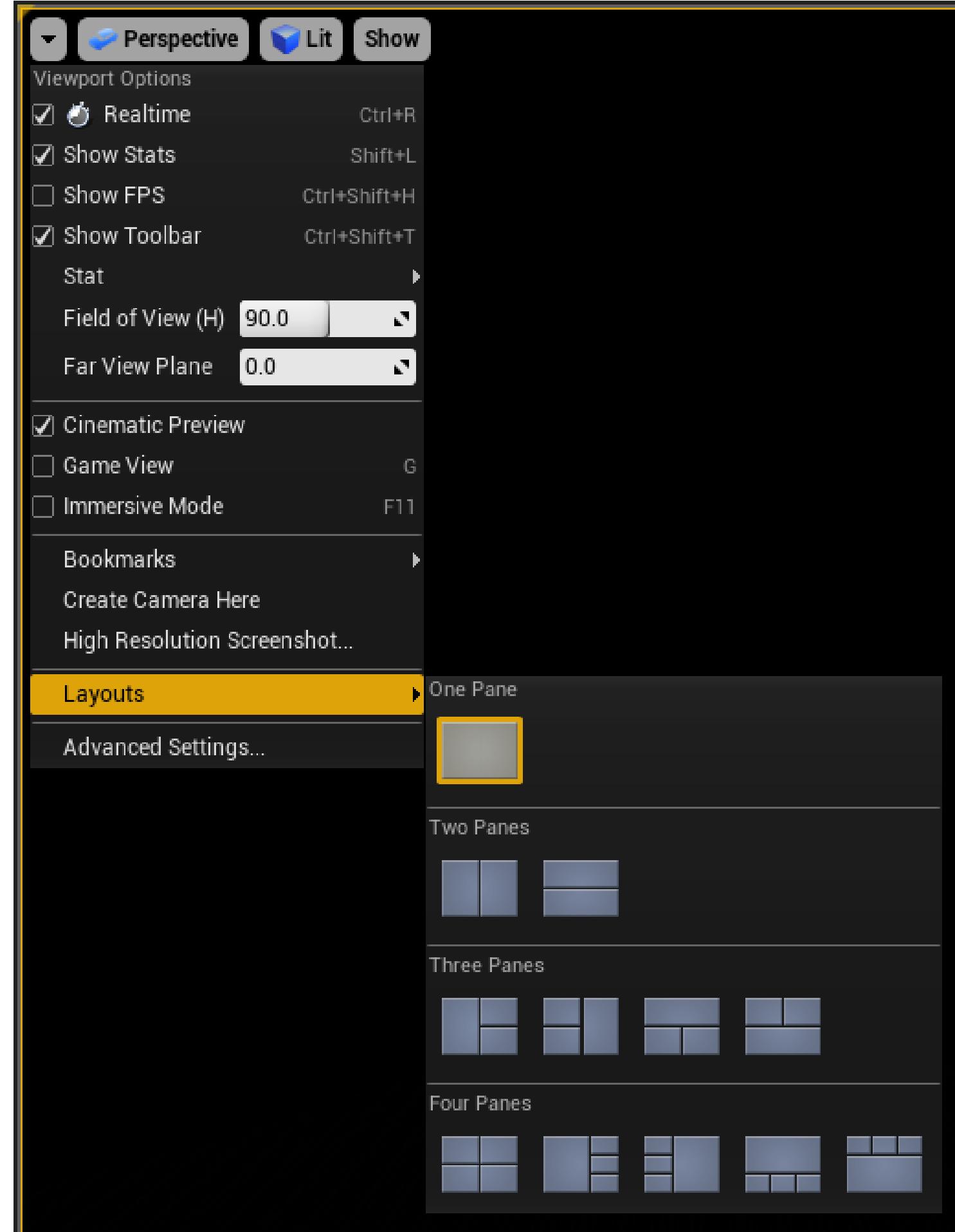


VIEWPORT LAYOUT

By default, the Viewport panel displays a single-pane perspective view.

You can easily change it to a two-, three-, or four-pane layout by clicking the Viewport drop-down menu, selecting Layouts, and left-clicking on the desired format.

Note: You can change each pane in the Viewport panel to a different view mode at any time.

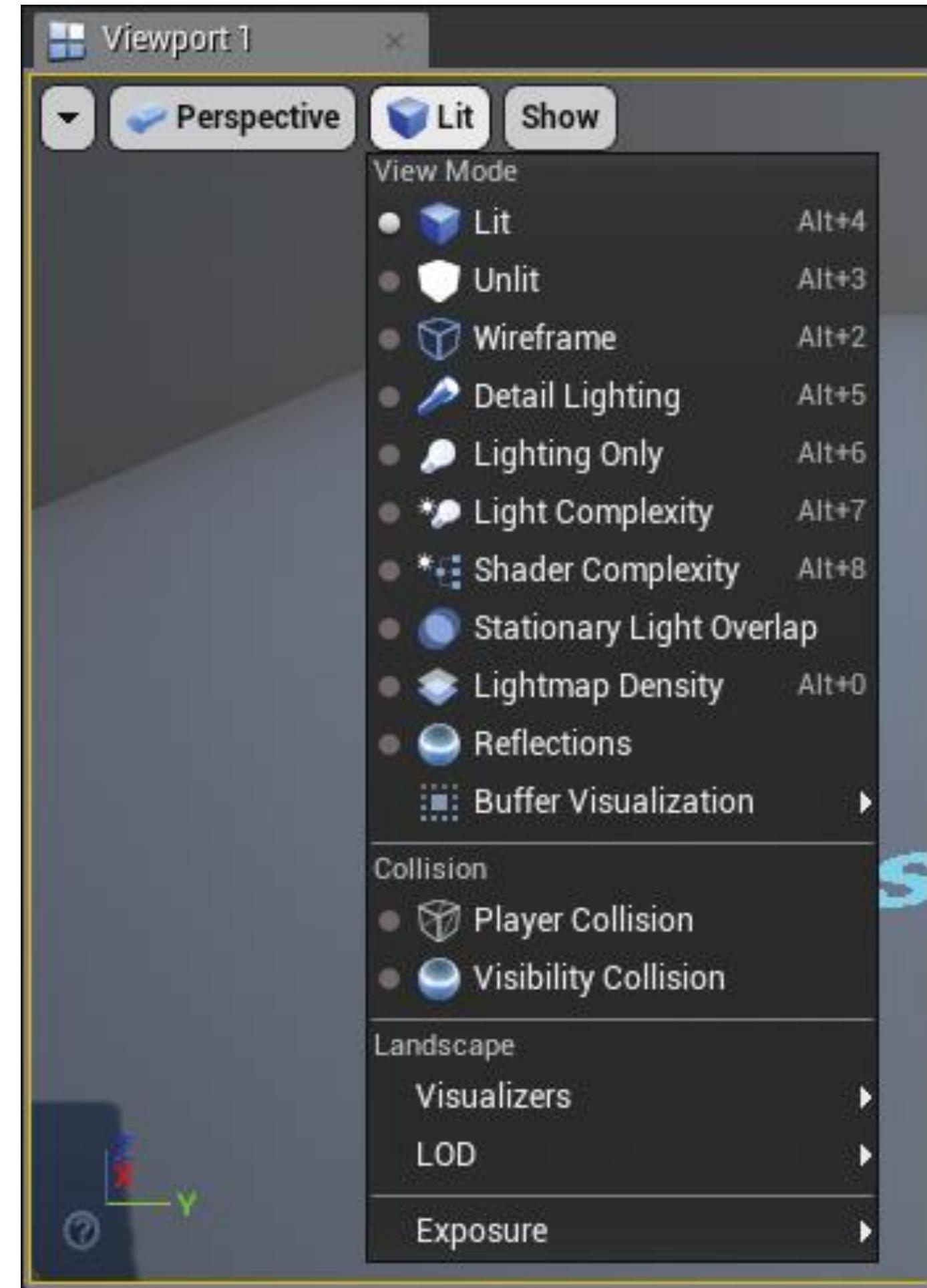




VIEW MODES

View modes change the visual display of the Level in a Viewport.

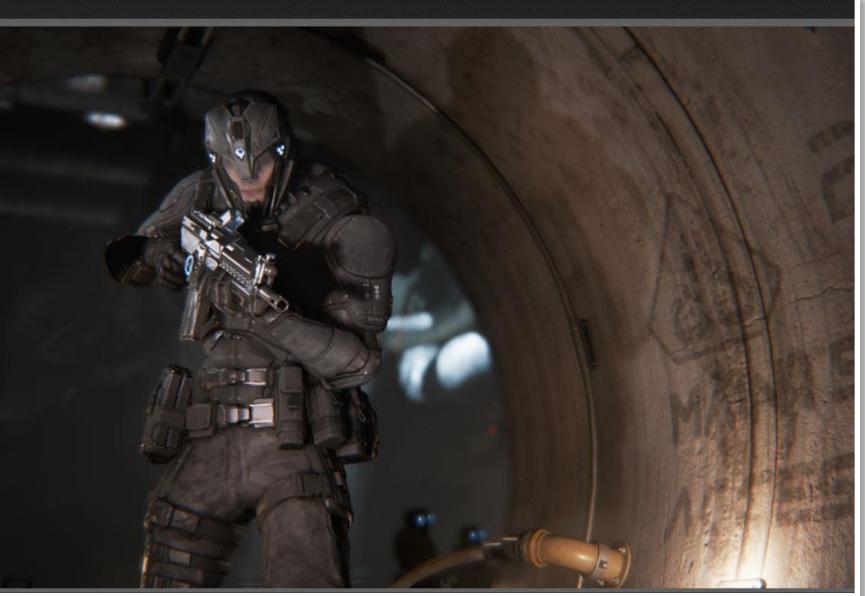
More than 13 different view modes, along with other visualization tools, are available. You can use them to get feedback on a Level and to debug and troubleshoot many potential issues.



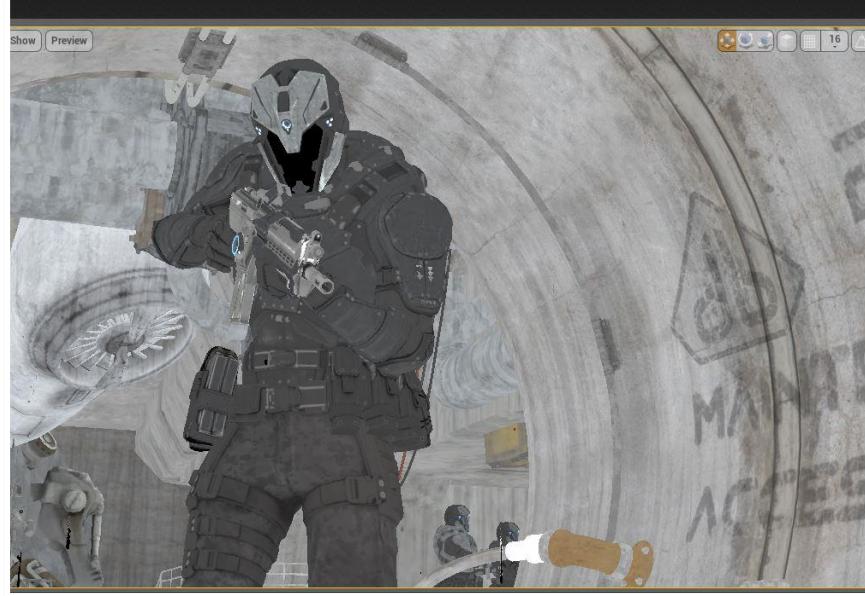


VIEW MODES

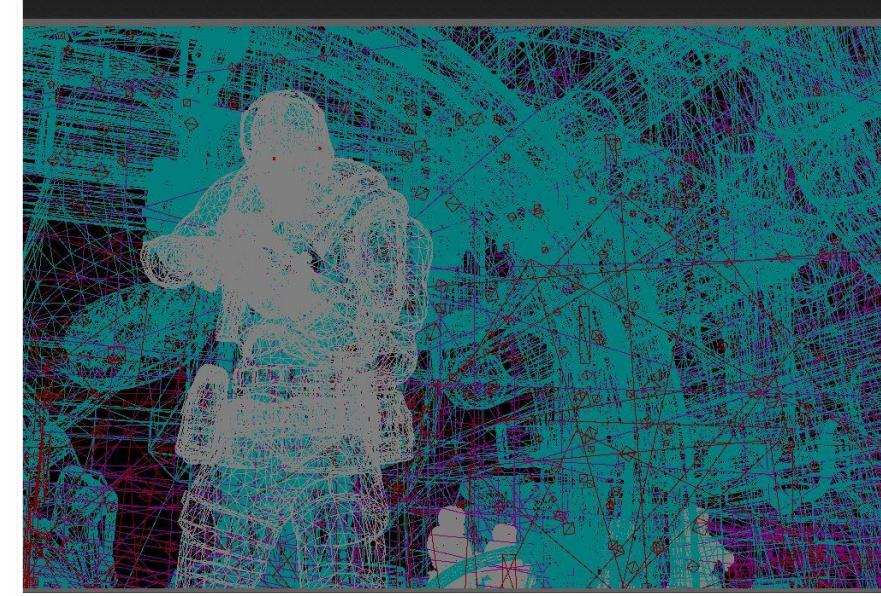
View modes and visualizers can provide important feedback on the state of a Level.



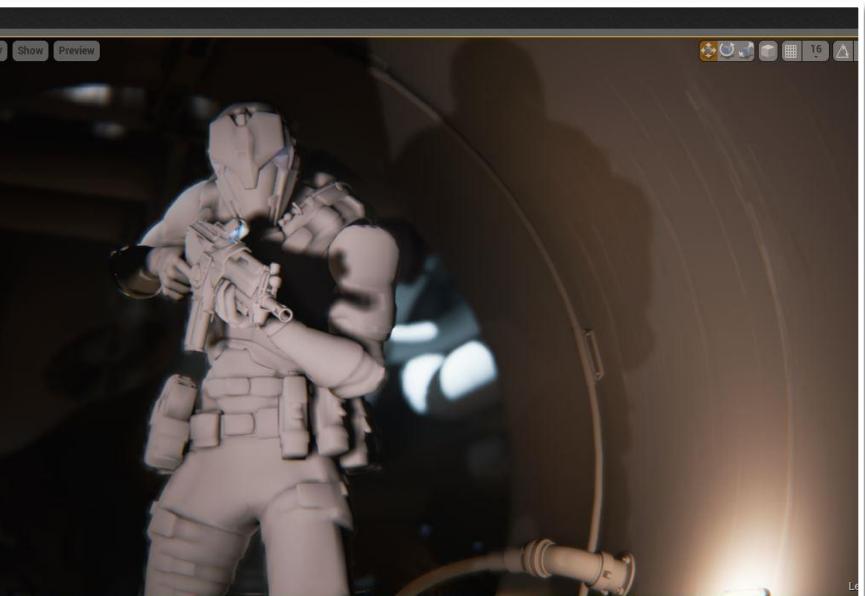
Lit



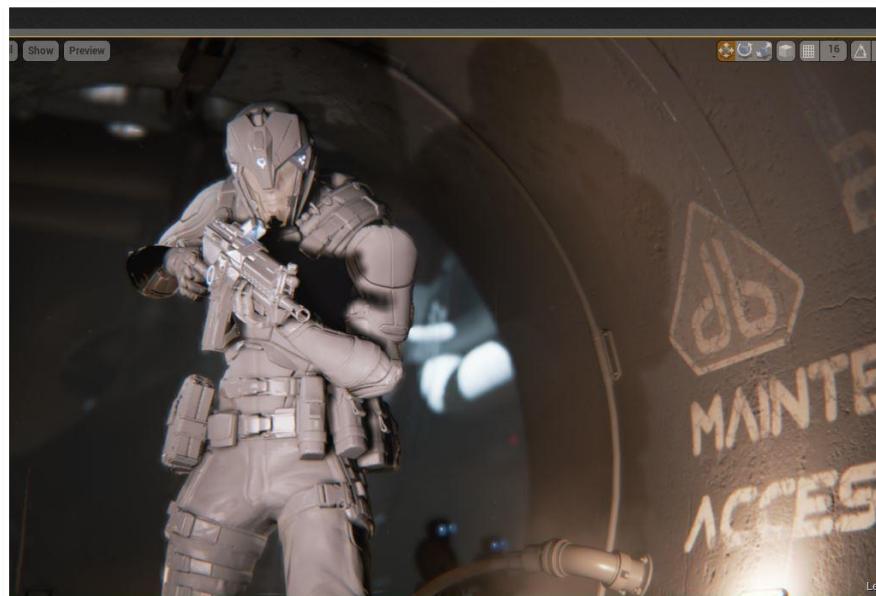
Unlit



Wireframe



Lighting Only



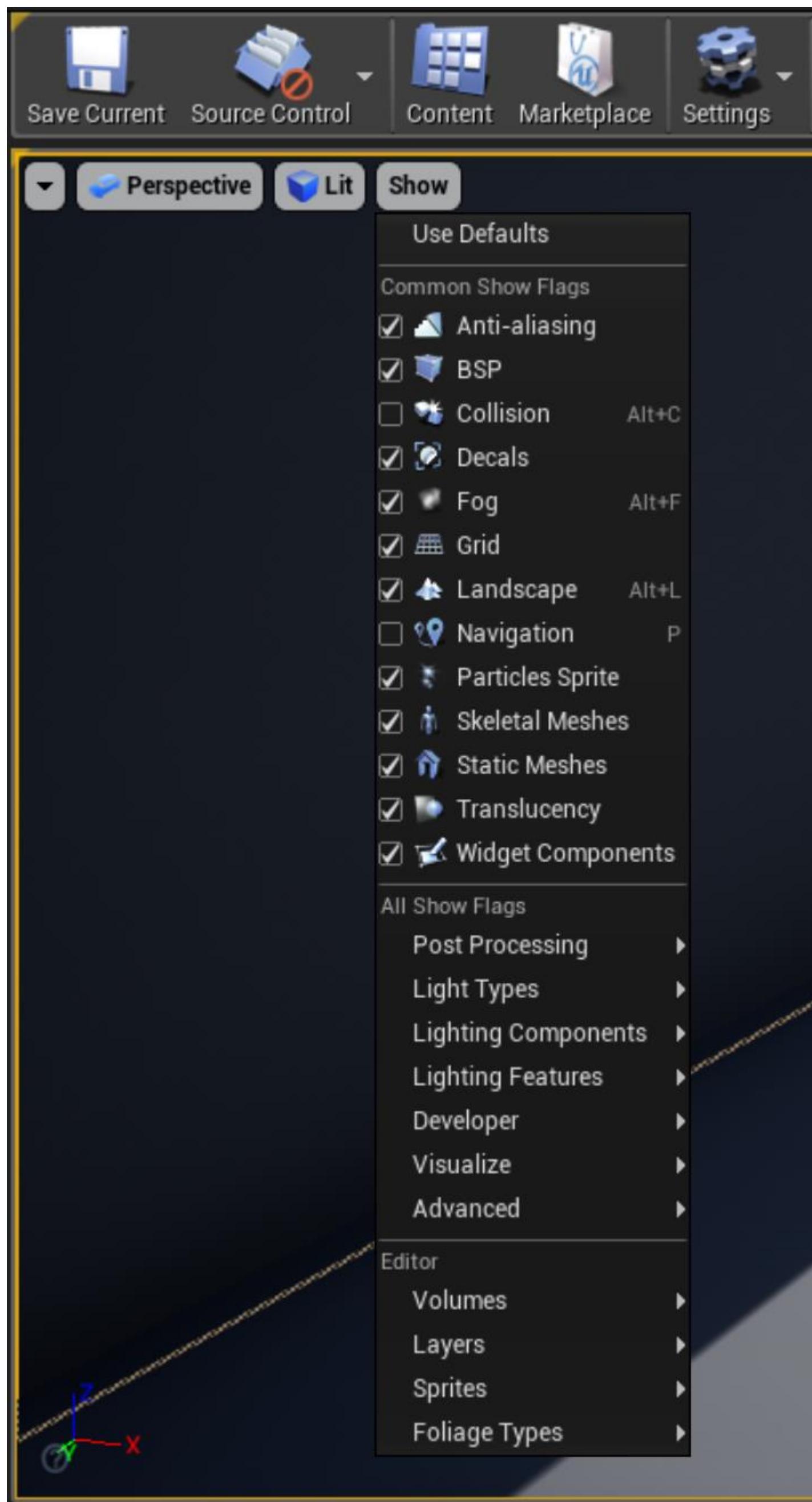
Detail Lighting



SHOW FLAGS

Like view modes, show flags help display relevant information directly within the Level Viewport. For example, they can be used to display

- Actor collision hulls
- Bounding boxes
- Static Meshes



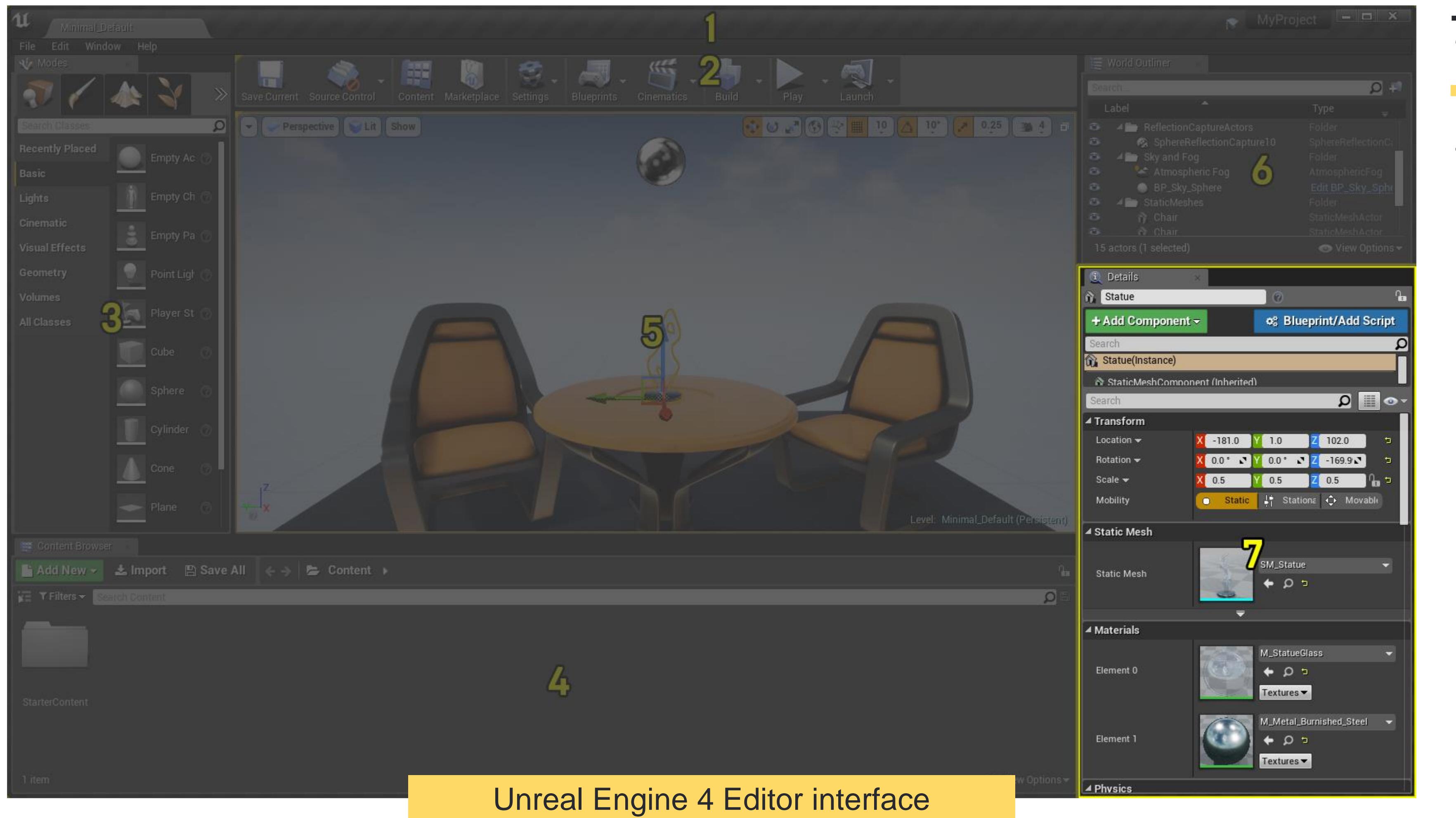


6. WORLD OUTLINER

The World Outliner panel displays all the Actors within the current Level in a hierarchical tree view.

You can select an Actor simply by clicking its name in the World Outliner panel. The selected Actor's properties will show up in the Details panel (7).





7. DETAILS PANEL

The Details panel displays all the editable properties for a selected Actor.

Common properties include

- The name of the Actor
- Transform edit boxes for moving, rotating, and scaling the Actor
- Rendering display properties

Some properties that appear depend on the class of Actor currently selected.



NAVIGATING A SCENE

Viewport Navigation



Navigating a Scene in the Perspective Viewport

Unlike in other 3D applications, which are set up for focusing and orbiting around a single asset as it's being built, the Unreal Engine Viewport movement controls are designed for set-dressing large game Levels, where moving through large areas quickly is key.

Control	Action
Left-click+drag	Moves the Viewport camera forward and backward and rotates left and right.
Right-click+drag	Rotates the Viewport camera in place without forward or backward movement.
Left-click+right-click+drag	Moves the Viewport camera up and down in the world.
Ctrl+Alt+click+drag	Creates a marquee selection box.
Hold RMB+WASD keys	Moves you through the Level as you would in a typical first-person shooter.



Orbiting, Dolly, and Track Viewport Controls

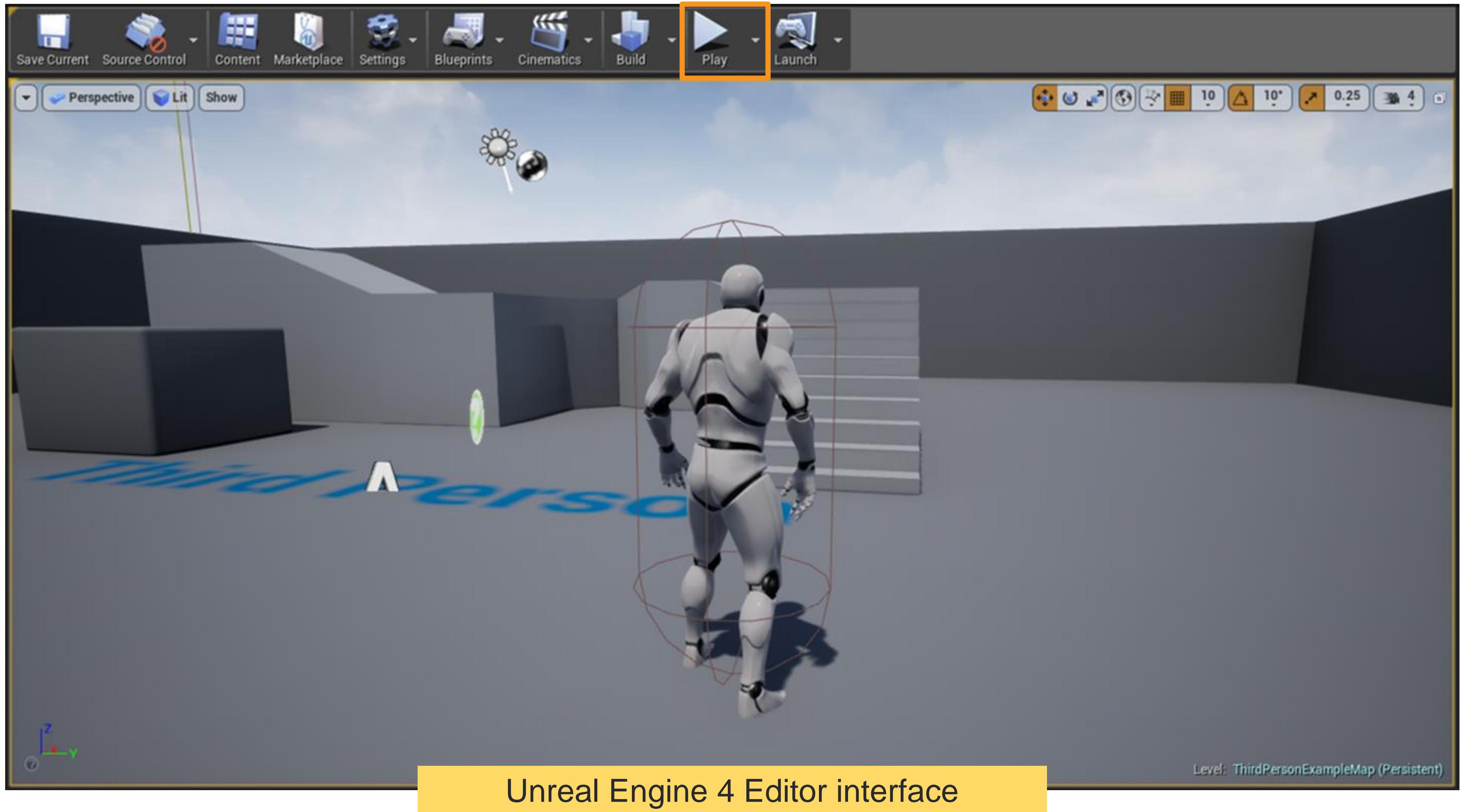
You can still work with Actors the same way as you do in traditional 3D applications.

Control	Action
F key	Focuses the Viewport camera on the selected Actor in the Viewport.
Alt+LMB+drag	Tumbles the Viewport around a single pivot or point of interest.
Alt+RMB+drag	Dollies (zooms) the camera toward and away from a single pivot or point of interest.
Alt+middle-click+drag	Tracks the camera left, right, up, and down in the direction of mouse movement.

PLAYTESTING A LEVEL

Play in Editor (PIE)



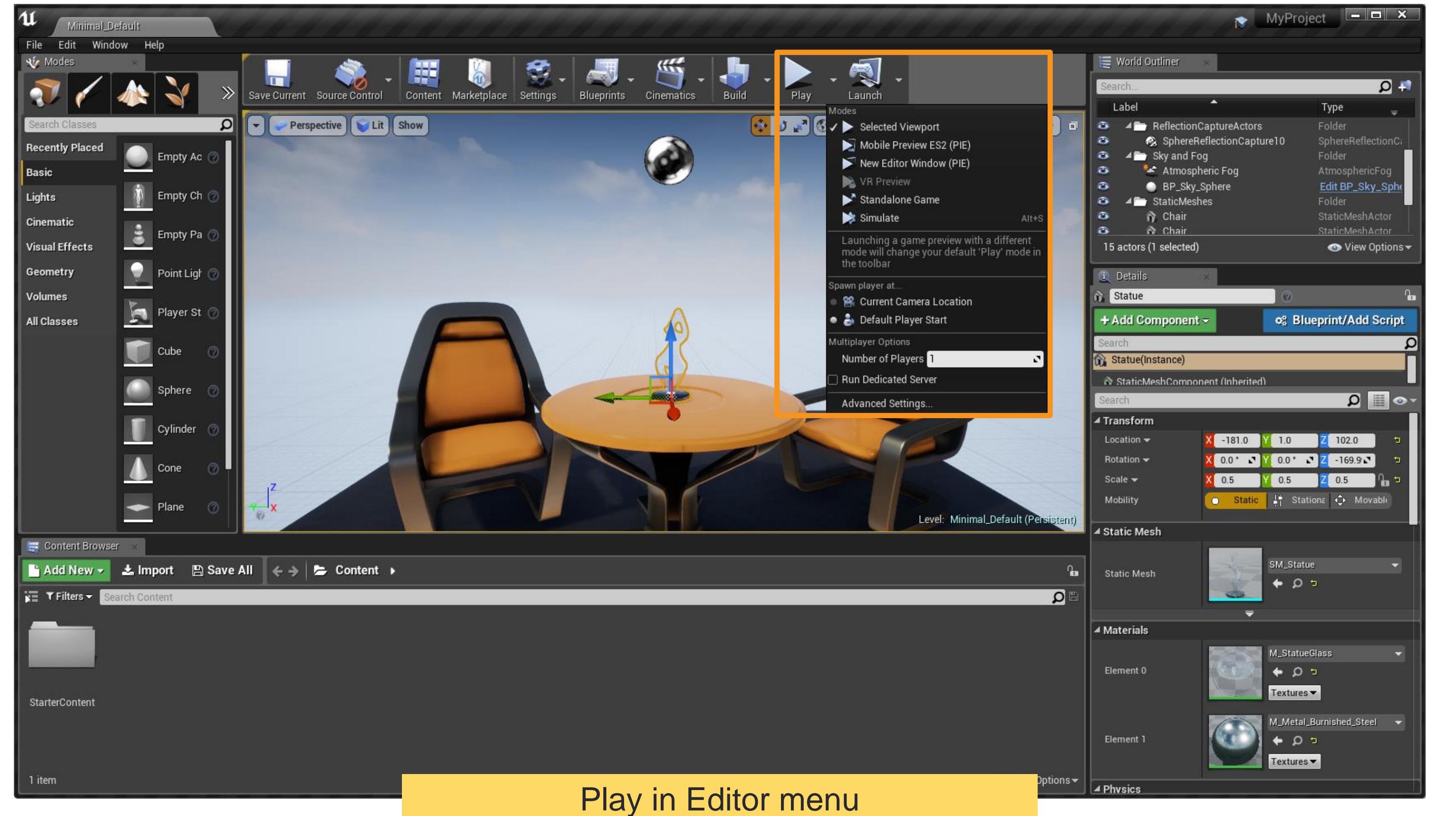


PLAY IN EDITOR (PIE)

Play in Editor (PIE) refers to a collection of options that allows you to playtest a Level without having to compile or package content beforehand.

The PIE preview options are found on the Level Editor toolbar, under the Play button.





Play in Editor menu

PLAY IN EDITOR (PIE)

There are a few different ways to playtest a Level. You can click the Play icon to play your Level or click the drop-down arrow to the right of the Play icon and choose one of the Play modes.

By default, UE4 uses the Selected Viewport option.

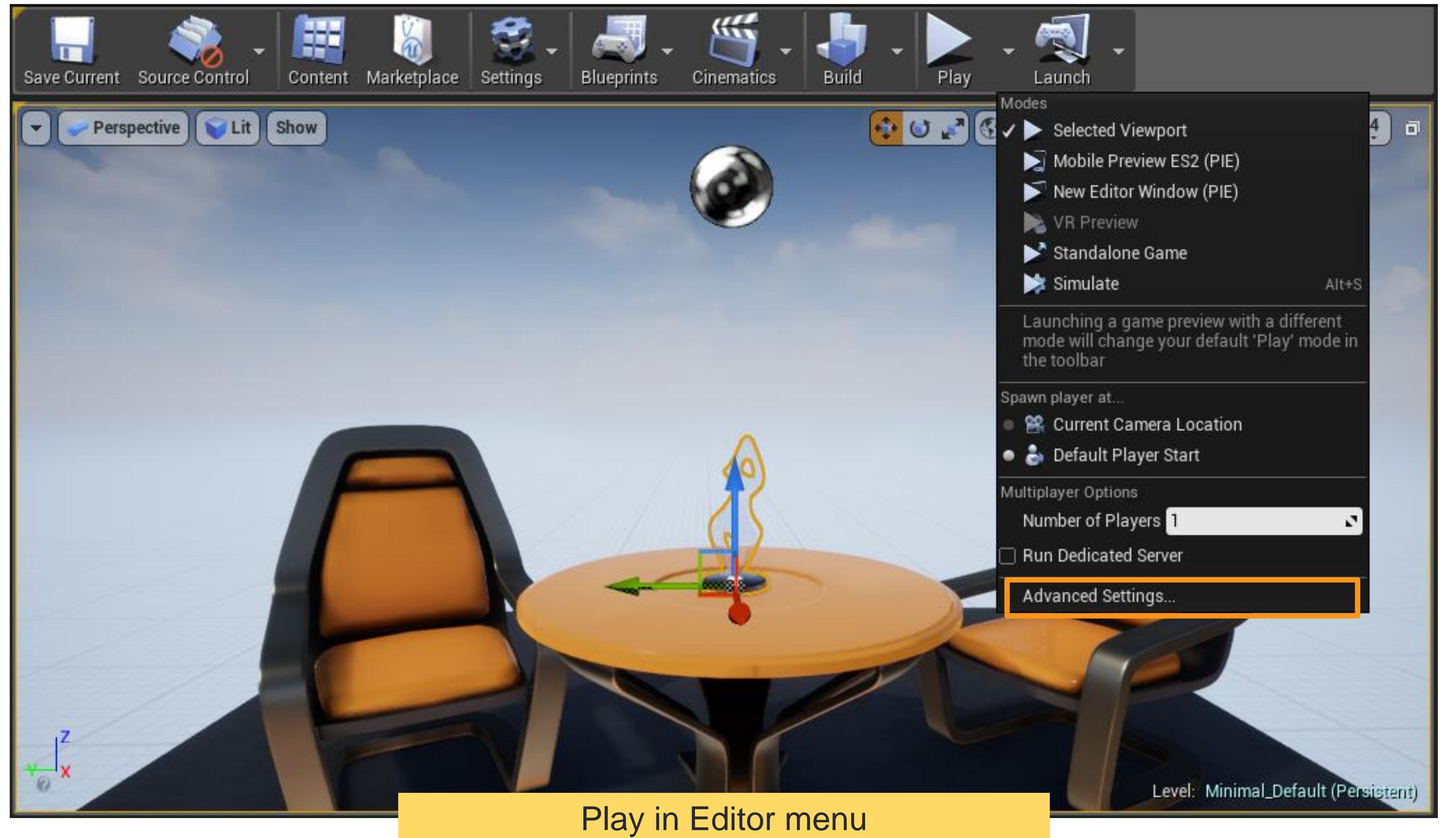




NEW EDITOR WINDOW (PIE)

The New Editor Window option changes the preview play icon and launches a preview of the Level in a new window.





ADVANCED SETTINGS

At some point, you may need to preview the Level in the resolution or aspect ratio of the target platform.





Advanced Play in Editor Settings

Level Editor - Play
Set up window sizes and other options for the Play In Editor (PIE) feature

Play in Editor

- Game Gets Mouse Control
- Show Mouse Control Label
- Mouse Control Label Position
- Viewport Gets HMDControl
- Auto Recompile Blueprints
- Enable Sound
- Stream Sub-Levels during Play in Editor

Play in New Window

New Window Size	Window Width	Window Height
	1280	720
New Window Position	Common Window Sizes	
	0	0
Left Position Top Position		
Always center window to screen		

Play in Standalone Game

Standalone Window Size	Window Width	Window Height
	1280	720
Common Window Sizes		

Multiplayer Options

- Number of Players
- Server Game Options
- Run Dedicated Server
- Route 1st Gamepad to 2nd Client
- Use Single Process
- Create Audio Device for Every Player

Play on Device

- Build Game Before Launch
- Only Build Code Projects



Exercise: Use Play in Editor (PIE)

Playtest the default map of the Third Person Game Mode template.

- Playtest the Level in Selected Viewport mode.
- Change to playtest the Level in New Editor Window (PIE) mode.
- Use Advanced Settings to change the resolution.