

A Comprehensive Guide for Beginners



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INTRODUCTION

Unreal Engine 5 is a powerful tool that can help you create stunning games with advanced graphics and physics. It is designed to provide developers with advanced tools and technologies to create next-generation games. With the ability to create realistic environments, stunning graphics, and advanced physics, *Unreal Engine 5* is the future of game development.

In this book, you will learn how to use *Unreal Engine 5* to create your own games from scratch. You will start by learning the basics of the engine, including how to install it and navigate the interface. You will then learn how to create and manage levels, assets, actors, components, collisions, and lighting.

The book will also cover more advanced topics such as Blueprint visual scripting and the types of content you can use. You will learn how to find and import resources from the asset store, use templates, and learn advanced tools.

By the end of this book, you will have a solid understanding of *Unreal Engine 5* and be able to create your own games with confidence. Whether you are a beginner or an experienced developer looking to learn a new tool, this book is for you.



CHAPTER 1:

GETTING STARTED



Download & Install Unreal Engine 5

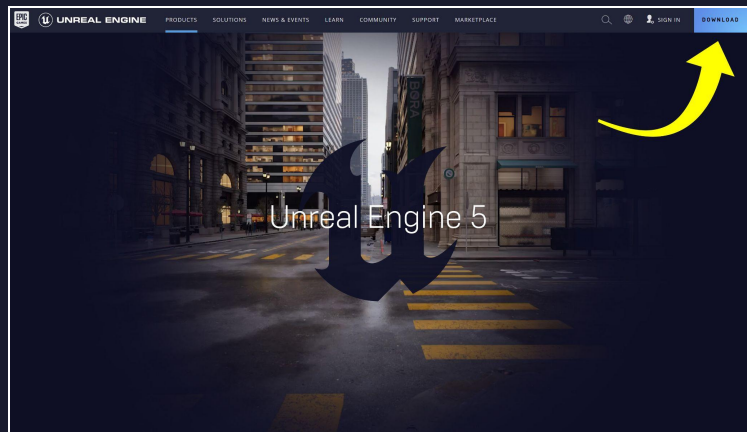
Downloading the Epic Games Launcher

This section covers how to get Unreal Engine 5 installed as well as making sure you have the right kind of license to allow you to be able to use UE5 for free and to get free access to some of the assets we'll use later in the book. If you already have Unreal Engine 5 installed, you can skip this step and move on to the next section, "Creating Your First UE5 Project."

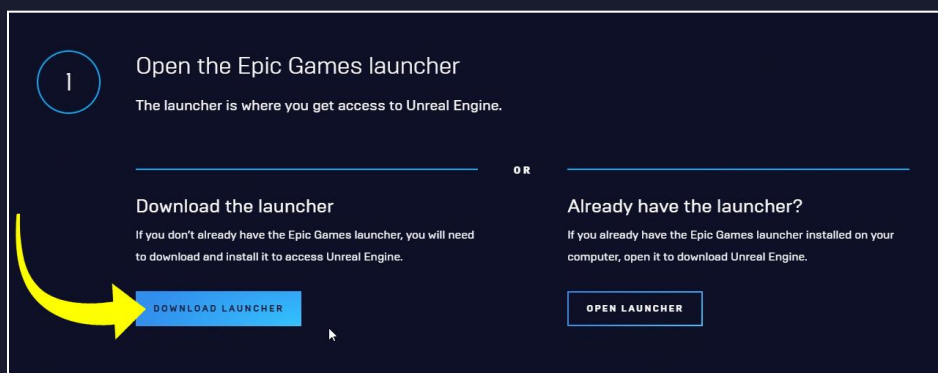
To begin, you need to download the Epic Games Launcher, which is the platform used to download, access and manage Unreal Engine.

- Go to the official Unreal Engine website which you can access using this URL:
<https://www.unrealengine.com/en-US/unreal-engine-5>

- Click the "Download" Button

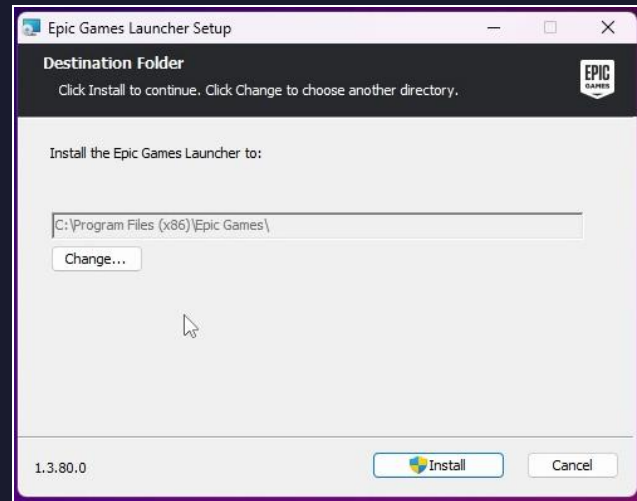


- On the download page, click on the "Download Now" button to start the process. Depending on your browser, you may encounter a warning message indicating potential risks. You can safely proceed by clicking on "Keep" or a similar option.

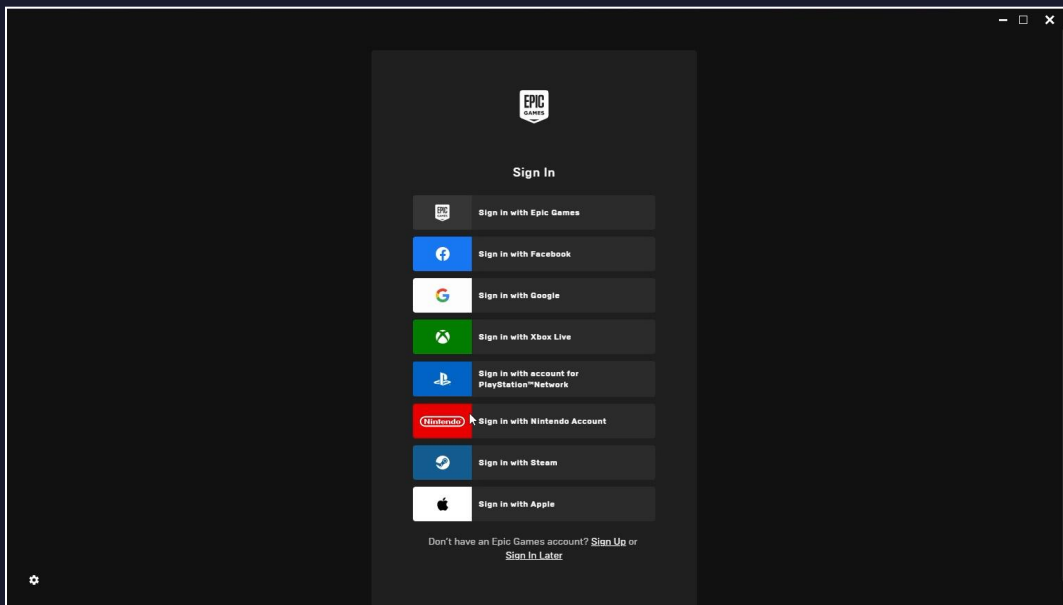


- The setup file for the Epic Games Launcher will now download.
- Locate the downloaded file and double-click on it to initiate the installation process.
- The setup wizard will appear. Choose a suitable installation location for the Epic Games Launcher.

- Click on the "Install" button to begin the installation process. Throughout the installation, you may encounter a few prompts asking for your permission to proceed. Simply click on "Yes" to continue.

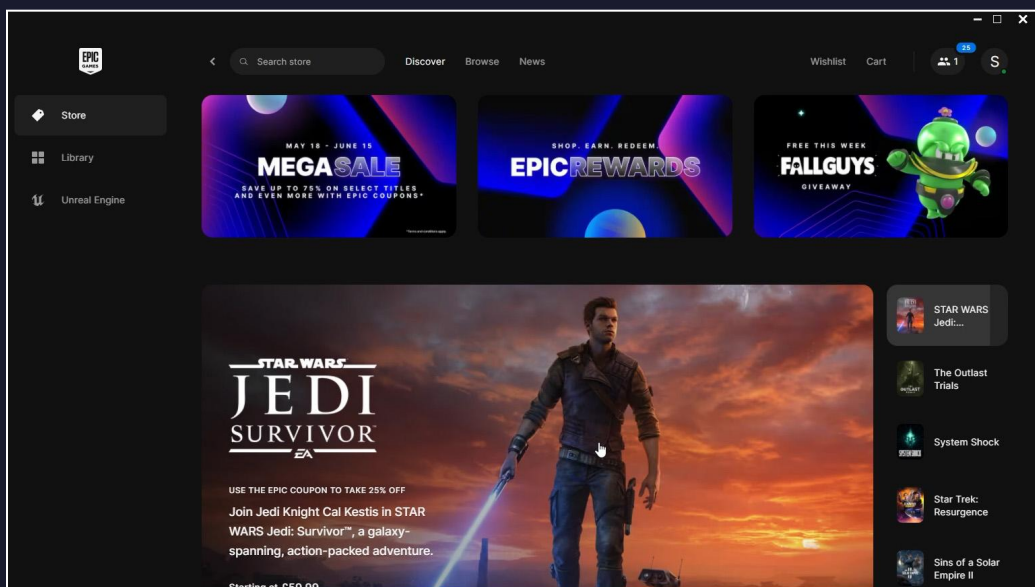


- Once the installation is complete, the Epic Games Launcher will automatically open. It may also search for and install any available updates.
- After the updates are installed, you will be greeted by the Epic Games Launcher splash screen where you will be prompted to sign in.



Note: If you don't have an Epic Games account, now is the time to create one. Having an account will enable you to access various assets used in this tutorial series. When creating your account you will be asked what type of license you would like to use. For the purposes of following the exercises in this book and with the aim of making games, I recommend choosing the “Publishing” license. If you already have an account, or now that you have created one, you can continue below.

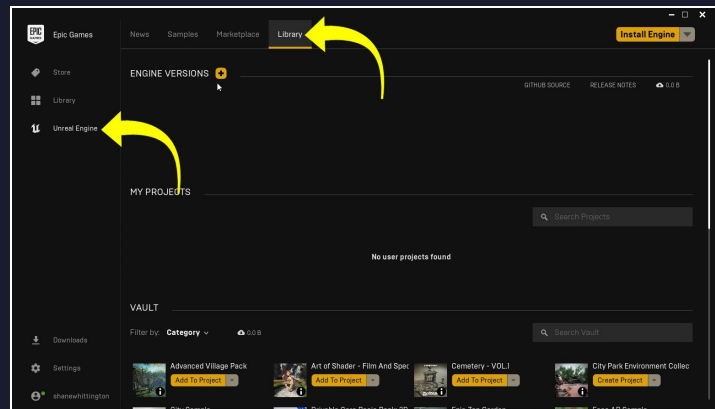
- Enter your account credentials and sign in to the Epic Games Launcher. If you have enabled two-factor authentication, follow the necessary steps to verify your account and complete the login process. You should now be in the Epic Games Launcher.



Installing Unreal Engine 5

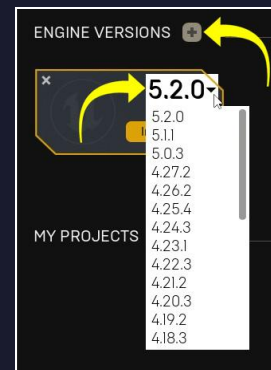
Now that you have access to the Epic Games Launcher, you can proceed to install Unreal Engine.

- On the left-hand side of the Epic Games Launcher, locate and click on "Unreal Engine" to access the Unreal Engine hub.
- In the Unreal Engine hub, in the top-right corner, you'll find an option labelled "Install Engine." However, this option doesn't allow you to choose the specific version you want to install.



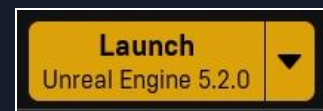
Instead, navigate to the "Library" tab where you'll have more control over which version of Unreal Engine you would like to install.

- Click on the "+" icon in the Library tab to add a new engine version.
- Select the desired version of Unreal Engine. For this book, I chose the latest version available, which was 5.2.
- Read and accept the terms and conditions, then choose the installation location.
- Click on the "Install" button to start the installation process.

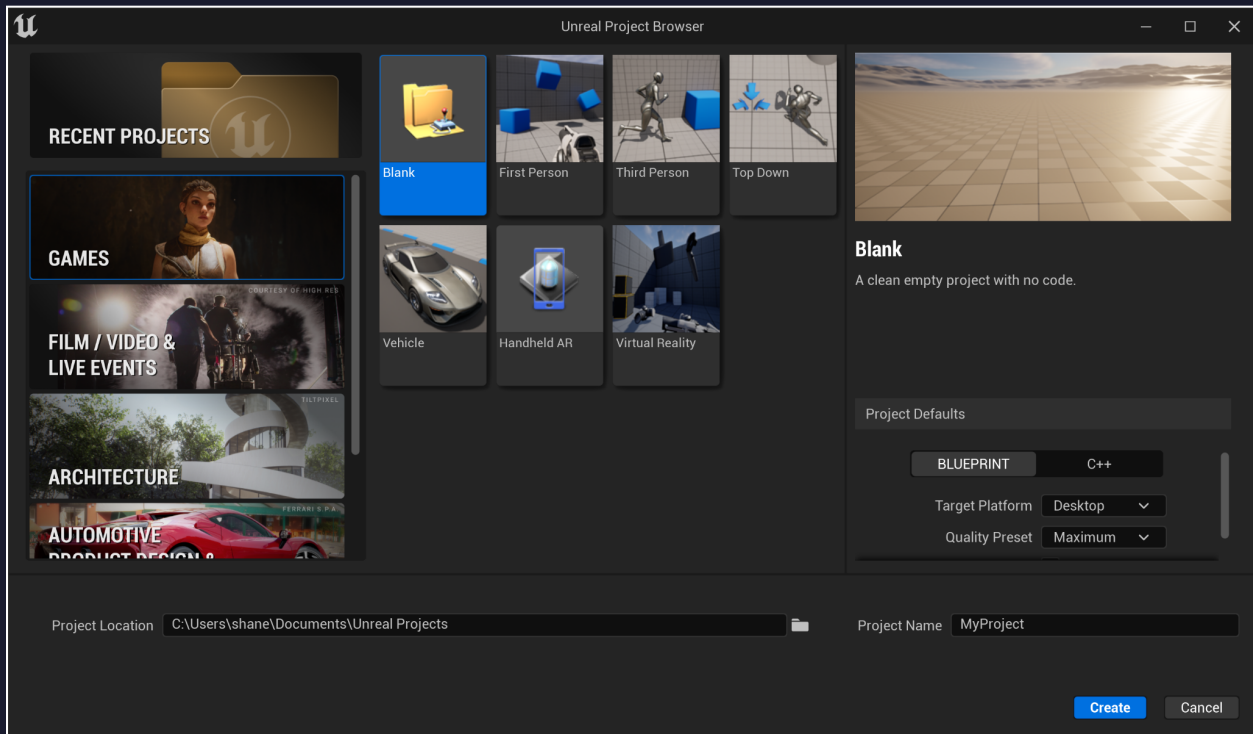


Keep in mind that this is a large download (the download size was approximately 22 gigabytes for me). It may take a significant amount of time to complete, so feel free to take a break and return when it's finished.

- Once the download and installation are complete, the Unreal Engine hub may display a message indicating that the project files are not associated. Click on the "Fix" button to allow the Unreal Engine project files to open with Unreal Engine.
- To launch Unreal Engine, click on the "Launch" button. At this stage, the engine may perform further installations or configurations as needed. Let the process run in the background until it's finished.



- Once the installation and configuration are complete, the Unreal Engine splash screen will appear, indicating that the engine is opening. This process may take a while, especially during the first launch, as it needs to compile shaders and perform other initialisation tasks.
- Be patient as the engine loads until you reach the "New Projects" or "Open Recent Projects" screen.



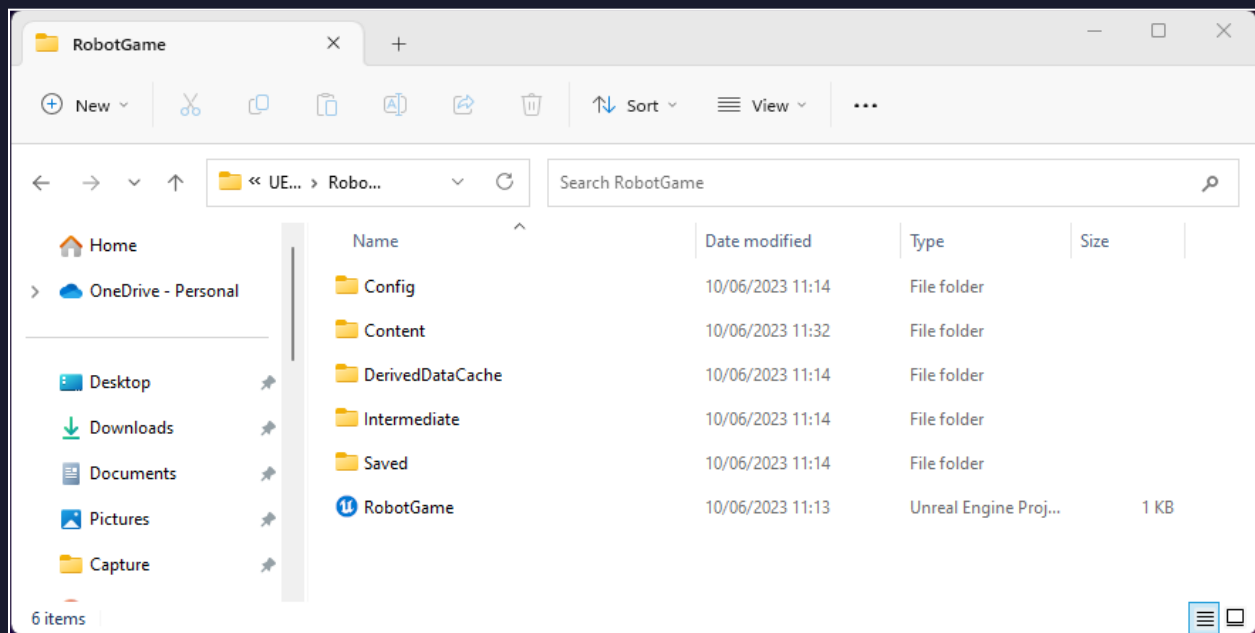
Congratulations! Unreal Engine is now installed and open on your computer and you're ready to create a new project in the next step!

Creating Your First UE5 Project

In this section you will create your first project in Unreal Engine 5. Before you actually create the project though, it's probably a good idea to discuss what a project actually is...

An Unreal Engine project holds all of the components of your game or application. It consists of folders and assets, such as Blueprints, Materials, 3D Assets, animations, and more, that bring your creation to life. The project structure organises and connects these elements, providing a cohesive environment for the development of your game.

Each UE5 project consists of a folder which will be named whatever you choose to name your project when you create it. Within this folder are other folders which organise all of the assets within your game as well as a .uproject file which you can use to open your project.



Okay, now that you know what a project is, it's time to make one!

Launching the Unreal Project Browser

Now that we have Unreal Engine installed, let's explore how to create a new project. If you followed along with the previous section, UE5 should already be open and will be displaying the Unreal Project Browser window but if you skipped that step, you can follow the instruction below to get access.

- Launch Unreal Engine. The Unreal Project Browser will open automatically.

The Project Browser serves as the gateway to various project-related options, including creating new projects, opening existing ones, and managing projects.

Create A New Project

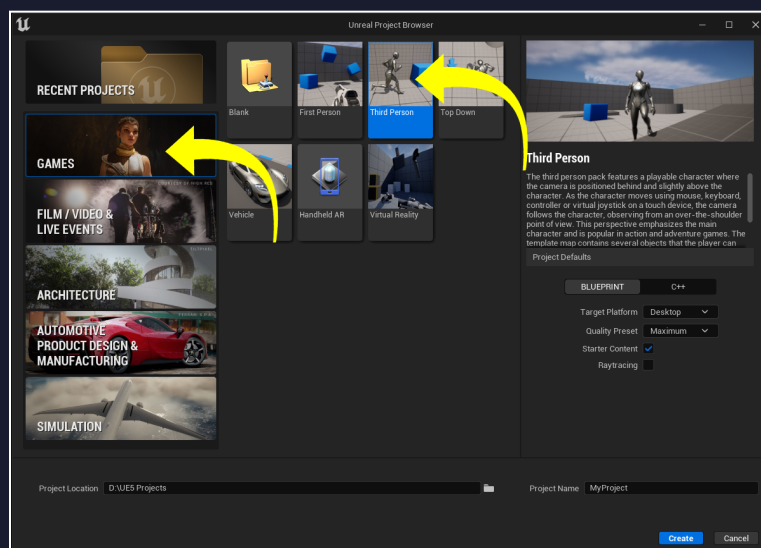
In the Project Browser, you'll find different categories listed on the left hand side of the window. For this tutorial, we will focus on the "Games" category.

- Click on the "Games" tab.

Within the Games tab, you'll see a selection of project templates. These templates provide a starting point for different types of games, featuring pre-built assets, levels, characters, and basic logic.

- Select the template that suits your project's requirements. In our case, we'll choose the "Third Person" project template.

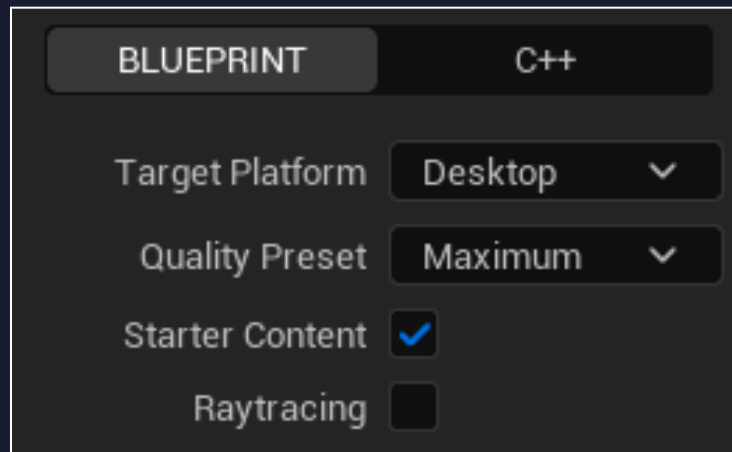
Next you'll need to make some decisions about the configuration of the Third Person project you're creating.



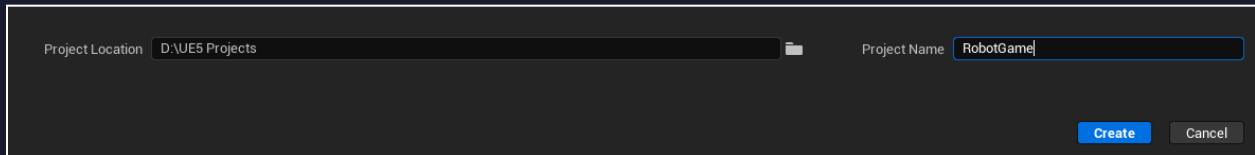
Configuring Project Defaults

Now it's time to configure the project defaults. Here, you'll make choices regarding coding method, target platforms, quality presets, and additional content.

- Choose between two scripting options: Blueprint or C++. Since this tutorial focuses on beginners, we'll opt for Blueprint, a visual scripting language that offers accessibility and ease of use.
- Select your target platform, either "Desktop" or "Mobile." For simplicity, we'll choose "Desktop" as our target platform.
- Regarding the quality preset, choose "Maximum" if you're developing for a computer or game console, or "Scalable" if you're targeting mobile devices. For this tutorial, choose "Maximum."
- Enable Starter Content. This provides additional assets, such as meshes, effects, sounds, and materials, which can be helpful for learning and experimentation.
- Keep Ray Tracing turned off. As this book is designed to be accessible to everyone (and not everyone has a GPU capable of RayTracing), Ray Tracing won't be covered



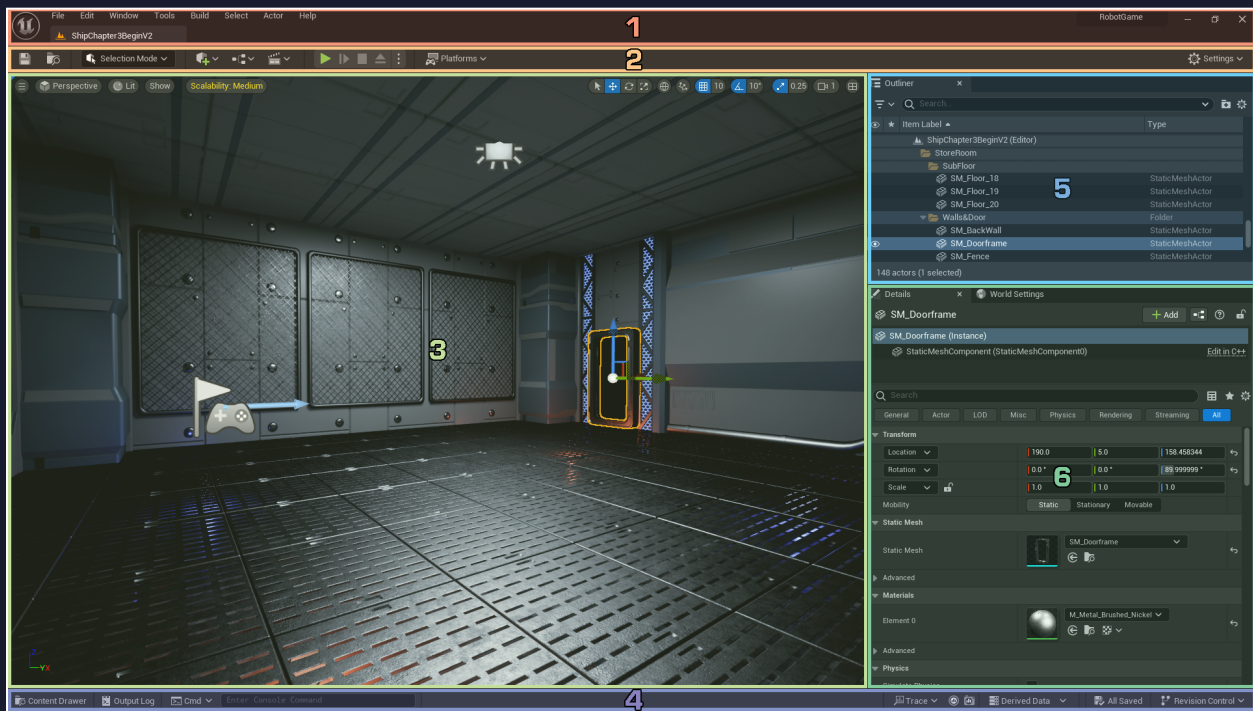
- Name your project by typing in the Project Name box. For example, let's call it "RobotGame" (Note: You cannot include spaces in the project name)
- Select a suitable project location by clicking on the folder icon to the right of the Project Location box. You can choose an existing folder or create a new one.
- Click on the "Create" button to initiate the project creation process. Unreal Engine will copy necessary files, set up the project in the specified location, and automatically open the level editor upon completion.



And that's it! You have now successfully created a project and Unreal Engine is now ready and waiting for you to begin developing your game. The interface can be a little daunting for beginners though, so in the next section we'll take a look at what each part of the interface is and what it does.

Take a Look Around: Getting to Know the UE5 User Interface

In this section, we will provide a comprehensive overview of the Unreal Engine 5 Level Editor interface. Understanding each component's purpose and functionality is essential for effectively navigating and utilising the editor. Let's delve into the different elements:



1. Menu Bar & Tab Bar

At the top of the interface, you'll find the Menu Bar, which contains options such as File, Edit, Window, Tools, and Build. Each editor within Unreal Engine features a menu bar specific to its functionalities. Some options, such as File, Edit, and Help, are consistent across all editors, while others are editor-specific, such as Build and Actor.

Just below the Menu Bar, you will find the Tab Bar, displaying the name of the current level or asset being edited. It allows for convenient navigation between different tabs, similar to a web browser. You can dock various tabs along this section for convenient access.

2. Toolbar

The Toolbar, located below the Menu Bar, contains a collection of commands that offer quick access to frequently used tools and operations. It includes features like saving, mode selection for different editing modes, content shortcuts for adding elements to the level or editing Blueprints, and options for creating cinematic sequences.

3. Viewport

The Viewport panel is a crucial component that provides a visual representation of the world you create in Unreal Engine. It consists of multiple viewports, which can be

maximised to display the world from different perspectives, including orthographic views (Top, Side, Front) and a perspective view.

4. Bottom Toolbar

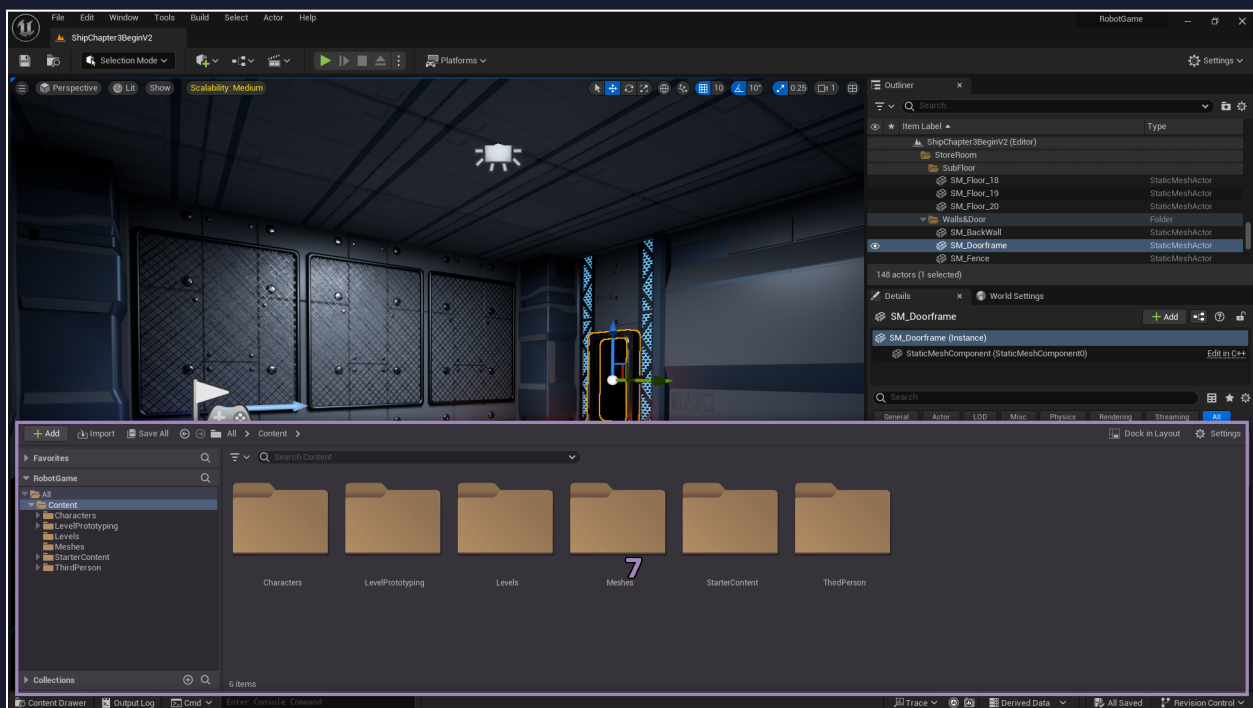
The Bottom Toolbar, situated at the bottom of the interface, provides shortcuts to essential features such as the Command Console, Output Log, and Derived Data functionality. Additionally, it displays the source control status, indicating whether source control is enabled or disabled.

5. Outliner

The Outliner panel presents a hierarchical tree view of all the Actors within the scene. It allows for selecting and modifying Actors directly from the Outliner, providing an organised overview of the scene's structure.

6. Details Panel

The Details Panel, located in the interface, offers comprehensive information, utilities, and functions for the currently selected objects in the viewport. It allows for precise control over object properties, transformations, and provides quick access to additional editing functionalities. The Details Panel serves as a centralised hub for manipulating and fine-tuning selected objects.



7. Content Drawer (Content Browser)

The "Content Drawer" is a specialised instance of the Content Browser which opens and closes as needed to keep your workspace clear. To open it, you can either click the Content Drawer button on the bottom bar of the editor or use the keyboard shortcut **Ctrl + Space Bar**.

The Content Browser is a vital tool for managing project assets. Serving as the central hub for creating, importing, and organising content, it enables you to easily browse and interact with assets. With features like advanced filtering, asset collections, and issue identification, it streamlines asset management in large projects. You'll be using the content browser a lot as you work your way through this book.

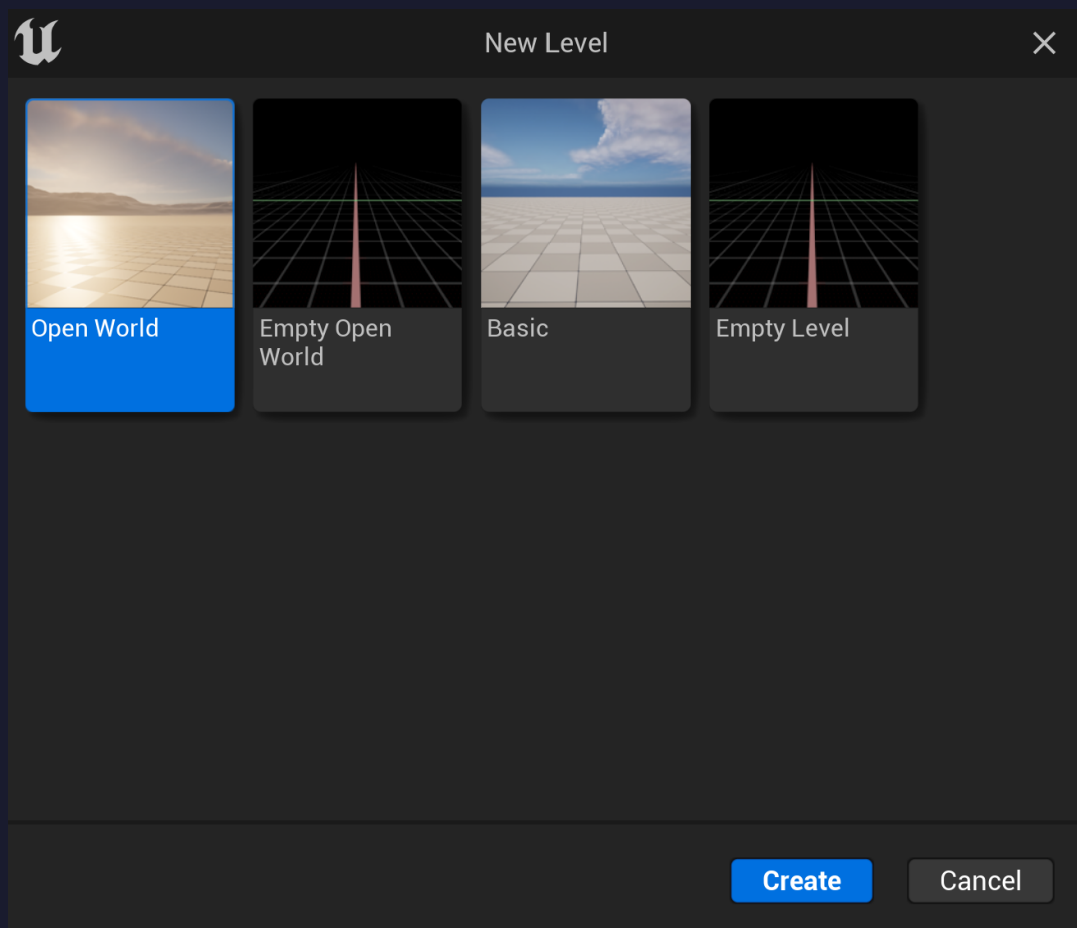
These various components work in harmony to provide a comprehensive and intuitive interface for working with the Level Editor in Unreal Engine 5. Having a basic understanding of what each part of the editor is used for will be useful as you work your way through the exercises in this book and beyond.

Getting Around in 3D Space: Viewport Controls

Instructions go here.

CHAPTER 2:

YOUR FIRST LEVEL





Create a New Empty Level

Instructions go here.