

Unreal Engine 4 For Beginners

Combining visual scripting and C++ programming to get the best from of Unreal Engine 4, this book covers Blueprints and C++ in detail to give a sound foundation for game development in Unreal Engine 4. --

If you are really passionate about games and have always wanted to write your own, this book is perfect for you. It will help you get started with programming in C++ and explore the immense functionalities of UE4.

Build optimized, efficient, and real-time applications that are production-ready using Unreal Engine's Material Editor Key Features Create stunning visual effects for 3D games and high-quality graphics Design efficient Shaders for mobile platforms without sacrificing their realism Discover what goes into the structure of Shaders and why lighting works the way it does Book Description Unreal Engine 4 is a powerful game engine, one which has seen a recent boost in widespread adoption thanks to its ease of use and the powerful rendering pipeline that it packs. Seeing as how it's relatively easy to create stunning presentations and visuals, Unreal has quickly become a strong contender in industries where this kind of software had been previously denied entry. With that in mind, this book aims to help you get the most out of Unreal Engine 4 - from creating awe-

inspiring graphics to delivering optimized experiences to your users. This is possible thanks to a mixture of hands-on experience with real materials and the theory behind them. You will immediately know how to create that material that you want to display, and you'll also end up with the knowledge that will let you know how to control it. All of this will be done without losing sight of two key components of any real-time application - optimization, and efficiency. The materials that you create will be light and efficient, and they will vary depending on your target platform. You'll know which techniques can be used in any kind of device and which ones should be kept to high-end machines, giving you the confidence to tackle any material-related task that you can imagine. Hop onboard and discover how!

What you will learn Master Unreal Engine's rendering pipeline for developing real-time graphics Use physically based rendering (PBR) for building materials and lighting solutions Build optimized materials for games targeting multiple platforms Understand Unreal Engine's node and functions for creating desirable effects Design and build production-ready shaders Explore Unreal Engine's Material Editor for building complex materials and textures Who this book is for This book is for developers who want to create their first Shaders in Unreal Engine 4 or wish to take their game to a whole new level by adding professional post-

processing effects. A solid understanding of Unreal is required to get the most from this book.

Get to grips with building the foundations of an RPG using Unreal Engine 4 About This Book Utilize a mixture of C++, Blueprints, and UMG to create a role playing game (RPG) efficiently Create reusable code chunks and elements that can easily be integrated into other games A cost effective, step-by-step guide to building and customizing an entire framework for your RPG Who This Book Is For If you are new to Unreal Engine and always wanted to script an RPG, you are this book's target reader. The lessons assume you understand the conventions of RPG games and have some awareness of the basics of using the Unreal editor to build level. What You Will Learn Program gameplay elements in C++ in Unreal Create custom game data for entities such as players and enemies Create a turn-based combat engine Design menu systems and blueprint logic Create an NPC and dialog system Integrate equipment and items Develop the foundations of a saving and loading system In Detail Now that Unreal Engine 4 has become one of the most cutting edge game engines in the world, developers are looking for the best ways of creating games of any genre in the engine. This book will lay out the foundation of creating a turn-based RPG in Unreal Engine 4. The book starts by walking you through creating a turn-based battle system that can hold commands for

party members and enemies. You'll get your hands dirty by creating NPCs such as shop owners, and important mechanics, that make up every RPG such as a currency system, inventory, dialogue, and character statistics. Although this book specifically focuses on the creation of a turn-based RPG, there are a variety of topics that can be utilized when creating many other types of genres. By the end of the book, you will be able to build upon core RPG framework elements to create your own game experience. Style and approach You will follow a series of lessons detailing the elements that contribute to an RPG. By the end of the book, you will have considerably leveled up your ability to make your own game

This book serves as an introduction to the level design process in Unreal Engine 4. By working with a number of different components within the Unreal Editor, readers will learn to create levels using BSPs, create custom materials, create custom Blueprints complete with events, import objects, create particle effects, create sound effects and combine them to create a complete playable game level. The book is designed to work step by step at the beginning of each chapter, then allow the reader to complete similar tasks on their own to show an understanding of the content. A companion website with project files and additional information is included.

A step-by-step guide that paves the way for

developing fantastic games with Unreal Engine 4

About This Book- Learn about game development and the building blocks that go into creating a game- A simple tutorial for beginners to get acquainted with the Unreal Engine architecture- Learn about the features and functionalities of Unreal Engine 4 and how to use them to create your own games

Who This Book Is For If you are new to game development and want to learn how games are created using Unreal Engine 4, this book is the right choice for you. You do not need prior game development experience, but it is expected that you have played games before. Knowledge of C++ would prove to be useful.

What You Will Learn- Learn what a game engine is, the history of Unreal Engine, and how game studios create games- Explore the Unreal Engine 4 editor controls and learn how to use the editor to create a room in a game level- Understand the basic structures of objects in a game, such as the differences between BSP and static meshes- Make objects interactive using level blueprints- Learn more about computer graphics rendering; how materials and light are rendered in your game- Get acquainted with the Material Editor to create materials and use different types of lights in the game levels- Utilize the various editors, tools, and features such as UI, the particle system, audio, terrain manipulation, and cinematics in Unreal Engine 4 to create game levels

In Detail Unreal Engine 4 is a powerful game

development engine that provides rich functionalities to create 2D and 3D games across multiple platforms. Many people know what a game is and they play games every day, but how many of them know how to create a game? Unreal Engine technology powers hundreds of games, and thousands of individuals have built careers and companies around skills developed using this engine. Learning Unreal Engine 4 Game Development starts with small, simple game ideas and playable projects that you can actually finish. The book first teaches you the basics of using Unreal Engine to create a simple game level. Then, you'll learn how to add details such as actors, animation, effects, and so on to the game. The complexity will increase over the chapters and the examples chosen will help you learn a wide variety of game development techniques. This book aims to equip you with the confidence and skills to design and build your own games using Unreal Engine 4. By the end of this book, you'll have learnt about the entire Unreal suite and know how to successfully create fun, simple games. Style and approach This book explains in detail what goes into the development of a game, provides hands-on examples that you can follow to create the different components of a game, and provides sufficient background/theory to equip you with a solid foundation for creating your own games.

A comprehensive guide with coverage on AudioFX, Particle system, shaders, sequencers, and the latest features of Unreal 4.19 that will take your game development skills to the next level

Key Features

Create a high-performance Combat game using the essential features of Unreal Engine 4.18+. Master the complex competitive features needed in modern games such as Volumetric Lightmaps and Precomputed Lighting on Volumetric Fog, and build an impressive UI. Experience not only VR support for your game but also the inbuilt support of Apple's ARKit and Google's ARCore with UE4's newly released support for these platforms.

Book Description

To make a basic combat game from scratch, you will quickly override existing UE4 classes, and add and implement simple C++ functions while running and building them. These are all discussed as a short summary for new developers and as a quick refresher for experienced developers. Next, you will build a combat player character with expanded controls, create logic for a character, swap weapons, attack and move, bridge over scene changes and transitions, retain data between scenes, and manage the scene-change process. You will then build an intelligent enemy AI and add physics based particles for weapon impacts. You will also get acquainted with cutting-edge features such as Volumetric Lightmaps for precomputed lighting, and Atmospheric and

Volumetric Fog, to build advanced visuals in our ongoing GitHub project. Moving on, you will explore the tools required to build an in-game cut-scene for a more professional gameplay experience and story direction. Along the way, you will implement a solid game UI, including writing a full in-game load and save system that will enable players to resume their game from any point. You will also prepare, build, and work on VR and AR taking them from editor to real-world, building two new projects one in each of these brand new areas of UE4 and integrate classes from the main project into AR! By the end of the book, you will have mastered all major UE features and will be able to bring self-imagined games to life through Unreal Engine 4.18+. What you will learn

The fundamentals of a combat-based game that will let you build and work all other systems from the core gameplay: the input, inventory, A.I. enemies, U.I., and audio Manage performance tools and branching shaders based on platform capabilities in the Material Editor Explore scene or level transitions and management strategies Improve visuals using UE4 systems such as Volumetric Lightmaps, Precomputed Lighting, and Cutscenes Implement audio-to-animation timelines and trigger them from visual FX Integrate Augmented Reality into a game with UE4's brand new ARKit and ARCore support Perform almost any game logic needed via Blueprint Visual Scripting, and know when to implement it in

Blueprint as opposed to C++ Who this book is for
This book is for game developers who want to build high-performance games with amazing UIs. Experience with C++ is required and some knowledge of working with Unreal Engine 4 would be an advantage.

Get to grips with programming techniques and game development using C++ libraries and Visual Studio 2019 Key Features Learn game development and C++ with a fun, example-driven approach Build clones of popular games such as Timberman, Zombie Survival Shooter, a co-op puzzle platformer, and Space Invaders Discover tips to expand your finished games by thinking critically, technically, and creatively Book Description The second edition of Beginning C++ Game Programming is updated and improved to include the latest features of Visual Studio 2019, SFML, and modern C++ programming techniques. With this book, you'll get a fun introduction to game programming by building five fully playable games of increasing complexity. You'll learn to build clones of popular games such as Timberman, Pong, a Zombie survival shooter, a coop puzzle platformer and Space Invaders. The book starts by covering the basics of programming. You'll study key C++ topics, such as object-oriented programming (OOP) and C++ pointers, and get acquainted with the Standard Template Library (STL). The book helps you learn about collision

detection techniques and game physics by building a Pong game. As you build games, you'll also learn exciting game programming concepts such as particle effects, directional sound (spatialization), OpenGL programmable shaders, spawning objects, and much more. Finally, you'll explore game design patterns to enhance your C++ game programming skills. By the end of the book, you'll have gained the knowledge you need to build your own games with exciting features from scratch

What you will learn

- Set up your game development project in Visual Studio 2019 and explore C++ libraries such as SFML
- Explore C++ OOP by building a Pong game
- Understand core game concepts such as game animation, game physics, collision detection, scorekeeping, and game sound
- Use classes, inheritance, and references to spawn and control thousands of enemies and shoot rapid-fire machine guns
- Add advanced features to your game using pointers, references, and the STL
- Scale and reuse your game code by learning modern game programming design patterns

Who this book is for

This book is perfect for you if you have no C++ programming knowledge, you need a beginner-level refresher course, or you want to learn how to build games or just use games as an engaging way to learn C++. Whether you aspire to publish a game (perhaps on Steam) or just want to impress friends with your creations, you'll find this book useful.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. “With his YouTube channel, Mitch’s VR Lab, Mitch has helped thousands of people understand the foundations of locomotion and interaction mechanics with clear and concise UE4 videos. I’m thrilled that he has taken the time to bring all his knowledge and experience in working with Unreal Engine and Virtual Reality to the Unreal® Engine VR Cookbook.... Mitch is uniquely qualified to share this book with the world.” —Luis Cataldi, Unreal Engine Education, Epic Games, Inc. For game developers and visualization specialists, VR is the next amazing frontier to conquer—and Unreal Engine 4 is the ideal platform to conquer it with. Unreal ® Engine VR Cookbook is your complete, authoritative guide to building stunning experiences on any Unreal Engine 4-compatible VR hardware. Renowned VR developer and instructor Mitch McCaffrey brings together best practices, common interaction paradigms, specific guidance on implementing these paradigms in Unreal Engine, and practical guidance on choosing the right approaches for your project. McCaffrey’s tested “recipes” contain step-by-step instructions, while empowering you with concise explanations of the underlying theory and math. Whether you’re creating first-person shooters or relaxation

simulators, the techniques McCaffrey explains help you get immediate results, as you gain “big picture” knowledge and master nuances that will help you succeed with any genre or project. Understand basic VR concepts and terminology Implement VR logic with Blueprint visual scripting Create basic VR projects with Oculus Rift, HTC Vive, Gear VR, Google VR, PSVR, and other environments Recognize and manage differences between seated and standing VR experiences Set up trace interactions and teleportation Work with UMG and 2D UIs Implement character inverse kinematics (IK) for head and hands Define effective motion controller interaction Help users avoid motion sickness Optimize VR applications Explore the VR editor, community resources, and more If you’re ready to master VR on Unreal Engine 4, this is the practical resource you’ve been searching for! Register your product at informit.com/register for convenient access to downloads, updates, and corrections as they become available.

Create responsive and intelligent game AI using Blueprints in Unreal Engine 4 About This Book Understand and apply your Game AI better through various projects such as adding randomness and probability, and introducing movement Configure and debug Game AI logic using multiple methodologies Bridge the gap between your knowledge and Game AI in Unreal Engine 4 Who This Book Is For This

book is for programmers and artists who want to expand their knowledge of Game AI in relation to Unreal Engine 4. You are recommended to have some experience of exploring Unreal Engine 4 prior to this book because we jump straight into Game AI.

What You Will Learn

- Understand the fundamental components of Game AI within Unreal Engine 4
- Skillfully introduce Game AI within Unreal Engine 4
- Configure, customize, and assign Navigation and AI components to your pawn
- Create, debug, and analyze Game AI behavior
- Design responsive Game AI using the Behavior Tree methodology
- Create smart objects designed to interact with AI
- Utilize advanced AI features within your project to maximize the user experience

In Detail

Unreal Engine is a powerful game development engine that provides rich functionalities to create 2D and 3D games. Developers have the opportunity to build cross-platform mobile and desktop games from scratch. This book will show you how to apply artificial intelligence (AI) techniques to your Unreal project using blueprints as your scripting language. You will start with an introduction to AI, and learn how it is applied to gaming. Then you'll jump right in and create a simple AI bot and apply basic behaviors to allow it to move randomly. As you progress, you'll find out how to implement randomness and probability traits. Using NavMesh, you will impart navigation components such as character

movement, MoveTo nodes, settings, and world objects, and implement Behavior Trees. At the end of the book, you will troubleshoot any issues that might crop up while building the game. Style and approach This easy-to-follow project-based guide throws you directly into the excitement of Game AI in an approachable and comprehensive manner. Discover how to create and populate your own video game level using the Unreal game engine. This is a practical hands-on book with clear instructions and lot of code examples. It takes a simple approach, guiding you through different architectural topics using realistic sample projects. Master the basics of Unreal Engine 4 to build stunning video games About This Book Get to grips with the user interface of Unreal Engine 4 and find out more about its various robust features Create dream video games with the help of the different tools Unreal Engine 4 offers Create video-games and fully utilize the power of Unreal Engine 4 to bring games to life through this step-by-step guide Who This Book Is For If you have a basic understanding of working on a 3D environment and you are interested in video game development, then this book is for you. A solid knowledge of C++ will come in handy. What You Will Learn Download both the binary and source version of Unreal Engine 4 and get familiar with the UI Get to know more about the Material Editor and how it works Add a post process

to the scene and alter it to get a unique look for your scene Acquaint yourself with the unique and exclusive feature of Unreal Engine 4—Blueprints Find out more about Static and Dynamic lighting and the difference between various lights Use Matinee to create cut scenes Create a health bar for the player with the use of Unreal Motion Graphics (UMG) Get familiar with Cascade Particle Editor In Detail Unreal Engine 4 is a complete suite of game development tools that gives you power to develop your game and seamlessly deploy it to iOS and Android devices. It can be used for the development of simple 2D games or even stunning high-end visuals. Unreal Engine features a high degree of portability and is a tool used by many game developers today. This book will introduce you to the most popular game development tool called Unreal Engine 4 with hands-on instructions for building stunning video games. You will begin by creating a new project or prototype by learning the essentials of Unreal Engine by getting familiar with the UI and Content Browser. Next, we'll import a sample asset from Autodesk 3ds max and learn more about Material Editor. After that we will learn more about Post Process. From there we will continue to learn more about Blueprints, Lights, UMG, C++ and more. Style and approach This step-by-step guide will help you gain practical knowledge about Unreal Engine through detailed descriptions of all the tools offered by Unreal Engine.

Get started creating video games using Unreal Engine 4 (UE4) and learning the fundamentals of game development. Through hands-on, step-by-step tutorials, you will learn to design engaging environments and a build solid foundation for more complex games. Discover how to utilize the 3D game design software behind the development of immensely popular games for PC, console, and mobile. Beginning Unreal Game Development steers you through the fundamentals of game development with UE4 to design environments that both engage the player and are aesthetically pleasing. Author David Nixon shows you how to script logic, define behaviors, store data, and create characters. You will learn to create user interfaces, such as menus, load screens, and head-up displays (HUDs), and manipulate audio to add music, sound effects, and dialogue to your game. The book covers level editors, actor types, blueprints, character creation and control, and much more. Throughout the book, you'll put theory into practice and create an actual game using a series of step-by-step tutorials. With a clear, step-by-step approach, Beginning Unreal Game Development builds up your knowledge of Unreal Engine 4 so you can start creating and deploying your own 3D video games in no time.

What You Will Learn

- Learn the fundamentals of game design
- Understand how to use Unreal Engine 4
- Design amazing levels for your characters to play

in Script logic to control the behavior of the world you create Who This Book Is For This book is for beginners with no prior game design or programming experience. It is also intended for video game enthusiasts who are brand-new to the world of game development and want to learn how to design a game from scratch using UE4.

Learn to design and build Virtual Reality experiences, applications, and games in Unreal Engine 4 through a series of practical, hands-on projects that teach you to create controllable avatars, user interfaces, and more. Key Features Learn about effective VR design and develop virtual reality games and applications for every VR platform Build essential features for VR such as player locomotion and interaction, 3D user interfaces, and 360 media players Learn about multiplayer networking and how to extend the engine using plugins and asset packs Book Description Unreal Engine 4 (UE4) is a powerful tool for developing VR games and applications. With its visual scripting language, Blueprint, and built-in support for all major VR headsets, it's a perfect tool for designers, artists, and engineers to realize their visions in VR. This book will guide you step-by-step through a series of projects that teach essential concepts and techniques for VR development in UE4. You will begin by learning how to think about (and design for) VR and then proceed to set up a development

environment. A series of practical projects follows, taking you through essential VR concepts. Through these exercises, you'll learn how to set up UE4 projects that run effectively in VR, how to build player locomotion schemes, and how to use hand controllers to interact with the world. You'll then move on to create user interfaces in 3D space, use the editor's VR mode to build environments directly in VR, and profile/optimize worlds you've built. Finally, you'll explore more advanced topics, such as displaying stereo media in VR, networking in Unreal, and using plugins to extend the engine. Throughout, this book focuses on creating a deeper understanding of why the relevant tools and techniques work as they do, so you can use the techniques and concepts learned here as a springboard for further learning and exploration in VR. What you will learn

- Understand design principles and concepts for building VR applications
- Set up your development environment with Unreal Blueprints and C++
- Create a player character with several locomotion schemes
- Evaluate and solve performance problems in VR to maintain high frame rates
- Display mono and stereo videos in VR
- Extend Unreal Engine's capabilities using various plugins

Who this book is for This book is for anyone interested in learning to develop Virtual Reality games and applications using UE4. Developers new to UE4 will benefit from hands-on projects that guide

readers through clearly-explained steps, while both new and experienced developers will learn crucial principles and techniques for VR development in UE4.

Develop high-quality interactive games with the power of Unreal Engine's visual scripting language and Blueprints framework

Key Features

Design a fully functional game in UE4 without writing a single line of code
Implement visual scripting to develop gameplay mechanics, UI, visual effects, VR and artificial intelligence
Deploy your game on multiple platforms and share it with the world

Book Description

Blueprints is the visual scripting system in Unreal Engine that enables programmers to create baseline systems and can be extended by designers. This book helps you explore all the features of the Blueprint Editor and guides you through using Variables, Macros, and Functions. You'll also learn about object-oriented programming (OOP) and discover the Gameplay Framework. In addition to this, you'll learn how Blueprint Communication allows one Blueprint to access information from another Blueprint. Later chapters will focus on building a fully functional game using a step-by-step approach. You'll start with a basic first-person shooter (FPS) template, and each chapter will build on the prototype to create an increasingly complex and robust game experience. You'll then progress from creating basic shooting mechanics to

more complex systems, such as user interface elements and intelligent enemy behavior. The skills you will develop using Blueprints can also be employed in other gaming genres. In the concluding chapters, the book demonstrates how to use arrays, maps, enums, and vector operations. Finally, you'll learn how to build a basic VR game. By the end of this book, you'll have learned how to build a fully functional game and will have the skills required to develop an entertaining experience for your audience. What you will learn

- Understand programming concepts in Blueprints
- Create prototypes and iterate new game mechanics rapidly
- Build user interface elements and interactive menus
- Use advanced Blueprint nodes to manage the complexity of a game
- Explore all the features of the Blueprint editor, such as the Components tab, Viewport, and Event Graph
- Get to grips with object-oriented programming (OOP) concepts and explore the Gameplay Framework
- Learn Virtual Reality development with UE Blueprint

Who this book is for
This book is for anyone who is interested in developing games or applications with UE4. Although basic knowledge of Windows OS is required, experience in programming or UE4 is not necessary.

The Official, Full-Color Guide to Developing Interactive Visualizations, Animations, and Renderings with Unreal Engine 4
Unreal Engine 4

(UE4) was created to develop video games, but it has gone viral among architecture, science, engineering, and medical visualization communities. UE4's stunning visual quality, cutting-edge toolset, unbeatable price (free!), and unprecedented ease of use redefines the state of the art and has turned the gaming, film, and visualization industries on their heads. Unreal Engine 4 for Design Visualization delivers the knowledge visualization professionals need to leverage UE4's immense power. World-class UE4 expert Tom Shannon introduces Unreal Engine 4's components and technical concepts, mentoring you through the entire process of building outstanding visualization content—all with realistic, carefully documented, step-by-step sample projects. Shannon answers the questions most often asked about UE4 visualization, addressing issues ranging from data import and processing to lighting, advanced materials, and rendering. He reveals important ways in which UE4 works differently from traditional rendering systems, even when it uses similar terminology. Throughout, he writes from the perspective of visualization professionals in architecture, engineering, or science—not gaming. Understand UE4's components and development environment Master UE4's pipeline from source data to delivered application Recognize and adapt to the differences between UE4 and traditional visualization and rendering techniques Achieve

staggering realism with UE4's Physically Based Rendering (PBR) Materials, Lighting, and Post-Processing pipelines Create production-ready Materials with the interactive real-time Material Editor Quickly set up projects, import massive datasets, and populate worlds with accurate visualization data Develop bright, warm lighting for architectural visualizations Create pre-rendered animations with Sequencer Use Blueprints Visual Scripting to create complex interactions without writing a single line of code Work with (and around) UE4's limitations and leveraging its advantages to achieve your vision All UE4 project files and 3ds Max source files, plus additional resources and links, are available at the book's companion website.

Game Development and Simulation with Unreal Technology explores the use of Unreal Engine 4 (UE4) for the development of real-time digital interactive contents to be used in computerized games or simulations. The engine is considered in three main iterations: from the basic use of the engine to build games and simulation content out of the box, to i

Blueprints Visual Scripting for Unreal Engine is a step-by-step approach to building a fully functional game, one system at a time. Starting with a basic First Person Shooter template, each chapter will extend the prototype to create an increasingly complex and robust game experience. You will

progress from creating basic shooting mechanics to gradually more complex systems that will generate user interface elements and intelligent enemy behavior. Focusing on universally applicable skills, the expertise you will develop in utilizing Blueprints can translate to other types of genres. By the time you finish the book, you will have a fully functional First Person Shooter game and the skills necessary to expand on the game to develop an entertaining, memorable experience for your players. From making customizations to player movement to creating new AI and game mechanics from scratch, you will discover everything you need to know to get started with game development using Blueprints and Unreal Engine 4.

A fun, quick, step by step guide to level design and creating your own game world.

Get the best out of your games by scripting them using UE4 About This Book A straightforward and easy-to-follow format A selection of the most important tasks and problems Carefully organized instructions to solve problems efficiently Clear explanations of what you did Solutions that can be applied to solve real-world problems Who This Book Is For This book is intended for game developers who understand the fundamentals of game design and C++ and would like to incorporate native code into the games they make with Unreal. They will be programmers who want to extend the engine, or

implement systems and Actors that allow designers control and flexibility when building levels. What You Will Learn Build function libraries (Blueprints) containing reusable code to reduce upkeep Move low-level functions from Blueprint into C++ to improve performance Abstract away complex implementation details to simplify designer workflows Incorporate existing libraries into your game to add extra functionality such as hardware integration Implement AI tasks and behaviors in Blueprints and C++ Generate data to control the appearance and content of UI elements In Detail Unreal Engine 4 (UE4) is a complete suite of game development tools made by game developers, for game developers. With more than 100 practical recipes, this book is a guide showcasing techniques to use the power of C++ scripting while developing games with UE4. It will start with adding and editing C++ classes from within the Unreal Editor. It will delve into one of Unreal's primary strengths, the ability for designers to customize programmer-developed actors and components. It will help you understand the benefits of when and how to use C++ as the scripting tool. With a blend of task-oriented recipes, this book will provide actionable information about scripting games with UE4, and manipulating the game and the development environment using C++. Towards the end of the book, you will be empowered to become a top-notch developer with Unreal Engine 4 using C++

as the scripting language. Style and approach A recipe based practical guide to show you how you can leverage C++ to manipulate and change your game behavior and game design using Unreal Engine 4.

An example-based practical guide to get you up and running with Unreal Engine 4.X About This Book A unique resource on Unreal with an interactive example based approach that is sure to get you up and running immediately Will feature four unique game projects that increase in complexity which will enable readers to build their game development skills using Unreal Engine 4 and the C++ programming language Will be the most up to date book in the market on Unreal with full coverage of the new features of UE4 Who This Book Is For Unreal Engine 4.X by Example was written for keen developers who wish to learn how to fully utilise Unreal Engine 4 to make awesome and engrossing game titles. Whether you are brand new to game development or a seasoned expert, you will be able to make use of the engine with C++. Experience with both C++ and other game engines is preferred before embarking on the Unreal by Example journey, but with a little external research into the basics of C++ programming, this book can take a complete game development novice to an Unreal Engine Developer! What You Will Learn Use C++ with Unreal Engine to boost the development potential of

any Unreal Engine project Vastly improve workflow and content creation with the visual scripting system blueprint Design, test, and implement interesting game worlds using Unreal Engines built-in editor Build a networked, feature-rich first person shooter that you can play with others over LAN Build design-centric game worlds that play to needs of your game ideas Paint your game worlds via the creation and modification of visual shaders called materials Gain knowledge of other game development disciplines through the use of the Animation and Material tool sets Create feature-rich game projects with a sophisticated visual quality and feature set In Detail With Unreal Engine 4 being made free to use, for any keen game developer it is quickly becoming the most popular game engine in today's development industry. The engine offers a rich feature set that can be customized and built upon through the use of C++. This book will cover how to work with Unreal Engine's tool set all the way from the basics of the editor and the visual scripting system blueprint to the in-depth low-level creation of content using C++. This book will provide you with the skills you need to create feature-rich, captivating, and refined game titles with Unreal Engine 4. This book will take you through the creation of four unique game projects, designed so that you will be ready to apply the engine's rich development capabilities. You will learn not only to take advantage of the visual tools of the

engine, but also the vast and powerful programming feature set of Unreal Engine 4. Style and approach The best resource that any beginner level game developer can dream of with examples on leveraging the amazing graphics engine, beautiful character animation and game world generations etc. by means of exciting real world game generation. This book would be a very unique resource for any game developer who wants to get up and running with Unreal. The unique example-driven approach will take you through the most basic games towards the more complex ones and will gradually build your skill level.

Gain practical knowledge of mathematical and physics concepts in order to design and develop an awesome game world using Unreal Engine 4 About This Book Use the Physics Asset Tool within Unreal Engine 4 to develop game physics objects for your game world Explore the Collision mechanics within Unreal Engine 4 to create advanced, real-world physics A step-by-step guide to implementing the Physics concepts involved in Unreal Engine 4 to create a working Vehicle Blueprint Who This Book Is For This book is intended for beginner to intermediate users of Epic Games' Unreal Engine 4 who want to learn more about how to implement physics within their game-world. No matter what your knowledge base of Unreal Engine 4 is, this book contains valuable information on blueprint scripting,

collision generation, materials, and the Physical Asset Tool (PhAT) for all users to create better games. What You Will Learn Get to know basic to intermediate topics in mathematics and physics Create assets using the Physics Asset Tool (PhAT) in Unreal Engine 4 Develop Collision Hulls, which are necessary to take advantage of Unreal Engine 4's physics and collision events Use constraints to create advanced physics-based assets for your game-world Working knowledge of physics bodies, physics damping, and friction within Unreal Engine 4 Develop physical materials to recreate real-world friction for substances such as glass and ice Create a working vehicle blueprint from scratch using assets provided by Unreal Engine 4 Gain knowledge about implementing advanced physics in Unreal Engine 4 using C++ programming In Detail Unreal Engine 4 is one of the leading game development tools used by both AAA and independent developers alike to create breathe-taking games. One of the key features of this tool is the use of Physics to create a believable game-world for players to explore. This book gives readers practical insight into the mathematical and physics principles necessary to properly implement physics within Unreal Engine 4. Discover how to manipulate physics within Unreal Engine 4 by learning basic real-world mathematical and physics concepts that assist in the implementation of physics-based objects in your

game world. Then, you'll be introduced to PhAT (Physics Asset Tool) within Unreal Engine 4 to learn more about developing game physics objects for your game world. Next, dive into Unreal Engine 4's collision generation, physical materials, blueprints, constraints, and more to get hands-on experience with the tools provided by Epic to create real-world physics in Unreal Engine 4. Lastly, you will create a working Vehicle Blueprint that uses all the concepts covered in this book, as well as covering advanced physics-based topics. Style and approach An easy-to-follow reference text filled with working examples of physics within Unreal Engine 4. Each topic is broken down to easily explain how to implement physics and physical objects in your game-world using the tools provided by Epic Games Unreal Engine 4.

Prepare for Unreal Engine 5! Learn the fundamentals of the C++ programming language as well as Unreal Engine's code base for creating and packaging a complete hack and slash action game. Implement combat, AI and Behavior Trees, animation, gameplay mechanics, interfaces and delegates, collision and physics, ray casting, game saving, menu and HUD creation via UMG, and much more.

Learn the fundamentals of C++ programming with a fun-filled, practical guide and create your own games using Unreal Engine 4. Key Features Gain foundational knowledge of C++

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language and syntax while creating games with UE4 Build 2D and 3D games having compelling user interfaces, game physics, and artificial intelligence Discover the latest trends in game development such as Virtual Reality, Augmented Reality, and AI Book Description Learning to program in C++ requires some serious motivation. Unreal Engine 4 (UE4) is a powerful C++ engine with a full range of features used to create top-notch, exciting games by AAA studios, making it the fun way to dive into learning C++17. This book starts by installing a code editor so you can begin to write C++17 code. You will then get acquainted with important C++ aspects, such as variables and memory, if, else, and switch, looping, functions and macros, objects, classes, inheritance, and dynamic memory allocation. As we dig into more advanced C++17 concepts, you will also start to explore the functionality the UE4 engine has to offer. You will use the UE4 editor to create your own world, and then program in some seriously fun gameplay. We delve further to discuss building game features, pathfinding, behavior trees, and more, and introduce you to the basics of machine learning and neural networks. We go on to talk about improving UI feedback with UMG and audio. In this edition of the book, we add the latest VR and AR features along with procedural programming. By the end of this book, you should have a good grasp of how to program in C++17. What you will learn Learn the basics of C++ and also basic UE4 editing Learn your way around the UE4 editor and the basics of using C++ and Blueprints within the engine Learn how to use basic C++ containers and data structures to store your game data Create players, NPCs, and monsters Give information to users using the UE4 UMG UI system Gain a basic understanding of how to use procedural programming to give your game more replay value Learn how UE4 can help you build projects using the hottest new technologies, such as VR and AR Who this book is for If you

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are really passionate about games and have always wanted to write your own, this book is perfect for you. It will help you get started with programming in C++ and explore the immense functionalities of UE4.

Unreal Engine VR Quick Start Guide introduces designers to the guidelines and design processes necessary to build interactive VR experiences. Learn to use User Experience design techniques and Blueprint programming to create virtual reality gameplay for HTC Vive, Oculus Rift, PSVR, and Windows Mixed Reality headsets.

Do you want to create your own games? To learn something and use it Right After? Than this book is for you. This is a Tutorial Series Book aimed to help you to make the games. In This book You Will learn how to work with Lights in Unreal Engine 4, specifically create your own custom logic ready to be implemented into the game. After the course from the book you will learn how to create Light Switchers, A rechargeable FlashLight and How To Brake The Light via Shooting and other Different Light Variations with some help of Materials. You will be able to create bunch of stuff connected with Light in your game!

If you are a game developer, designer, artist, or a beginner in the gaming industry and want to make Android games with Unreal Engine 4 efficiently, this book is ideal for you.

If you are a game developer, designer, artist, or a beginner in the gaming industry, and want to make iOS games efficiently at a low cost, this book is ideal for you.

Learn how to use Unreal Engine 4 by building 3D and multiplayer games using Blueprints Key Features Learn the fundamentals of Unreal Engine such as project templates, Blueprints, and C++ Learn to design games; use UMG to create menus and HUDs, and replication to create multiplayer games Build dynamic game elements using Animation Blueprints and Behavior Trees Book Description Unreal

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Engine is a popular game engine for developers to build high-end 2D and 3D games. This book is a practical guide, starting off by quickly introducing you to the Unreal Engine 4 (UE4) ecosystem. You will learn how to create Blueprints and C++ code to define your game's functionality. You will be familiarized with the core systems of UE4 such as UMG, Animation Blueprints, and Behavior Trees. You will also learn how to use replication to create multiplayer games. By the end of this book, you will have a broad, solid knowledge base to expand upon on your journey with UE4. What you will learn

- Use project templates to give your game a head start
- Create custom Blueprints and C++ classes and extend from Epic's base classes
- Use UMG to create menus and HUDs for your game
- Create more dynamic characters using Animation Blueprints
- Learn how to create complex AI with Behavior Trees
- Use replication to create multiplayer games
- Optimize, test, and deploy a UE4 project

Who this book is for Readers who already have some game development experience and Unity users who would like to try UE4 will all benefit from this book. Knowledge of basic Object-Oriented Programming topics such as variables, functions, and classes is assumed. This course will help you gain hands-on knowledge and experience in Unreal Engine 4. About This Video Get started with Unreal Engine 4 by setting up a simple animation Find out how to download and install your free copy of Unreal Engine 4.23 Learn how to create your first Unreal Engine scene In Detail Unreal Engine 4 is one of the leading resources employed in the creation of games, animations, television shows, and illustrations. This course will waste no time in getting you to grips with the knowledge and skills you need to get started with using Unreal Engine 4. You'll begin by learning how to download and install the program and start your first project. You'll then discover how to add realistic lighting and import assets and characters into a scene. As

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you advance, you'll get hands-on with applying atmospheric effects and create amazing cinematics. Finally, discover how to save a scene and export it as a video file to make it ready for further editing. By the end of this course, you'll have a solid understanding of how to perform useful operations and run Unreal Engine 4 efficiently.

Start with the fundamentals of UE4 and progressively build your knowledge and skills through several easy-to-follow projects. Take a hands-on approach to equip yourself with the tools needed to develop your own high-quality, immersive games.

Over 40 recipes to accelerate the process of learning game design and solving development problems using Unreal Engine About This Book Explore the quickest way to tackle common challenges faced in Unreal Engine Create your own content, levels, light scenes, and materials, and work with Blueprints and C++ scripting An intermediate, fast-paced Unreal Engine guide with targeted recipes to design games within its framework Who This Book Is For This book is for those who are relatively experienced with Unreal Engine 4 and have knowledge of its fundamentals. Working knowledge of C++ is required. What You Will Learn Discover editor functionalities for an in-depth insight into game design Develop environments using terrain for outdoor areas and a workflow for interiors as well using brushes Design various kinds of materials with unique features, such as mirrors and glows Explore the various ways that lighting can be used in the engine Build various level effects using Blueprints, Unreal's visual scripting system Set up a development environment and develop custom functionality with C++ for your games Create healthbars and main menus with animations using Slate, Unreal's UI solution, through the UMG Editor Package and create an installer to get your project out into the world In Detail Unreal Engine is powerful

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tool with rich functionalities to create games. It equips you with the skills to easily build mobile and desktop games from scratch without worrying about which platform they will run on. You can focus on the individual complexities of game development such as animation and rendering. This book takes you on a journey to jumpstart your game design efforts. You will learn various aspects of the Unreal engine commonly encountered with practical examples of how it can be used, with numerous references for further study. You will start by getting acquainted with Unreal Engine 4 and building out levels for your game. This will be followed by recipes to help you create environments, place meshes, and implement your characters. You will then learn to work with lights, camera, and shadows to include special effects in your game. Moving on, you'll learn Blueprint scripting and C++ programming to enable you to achieve trigger effects and add simple functionalities. By the end of the book, you will see how to create a healthbar and main menu, and then get your game ready to be deployed and published. Style and approach This book offers detailed, easy-to-follow recipes that will help you master a wide range of Unreal Engine 4's features. Every recipe provides step-by-step instructions, with explanations of how these features work, and alternative approaches and research materials so you can learn even more.

In just 24 lessons of one hour or less, learn how to start using Unreal Engine 4 to build amazing games for Windows, Mac, PS4, Xbox One, iOS, Android, the web, Linux-or all of them! Sams Teach Yourself Unreal Engine 4 Game Development in 24 Hours' straightforward, step-by-step approach shows you how to work with Unreal Engine 4's interface, its workflows, and its most powerful editors and tools. In just hours you'll be creating effects, scripting warfare, implementing physics-even developing for mobile devices and HUDs. Every lesson builds on what you've already learned, giving you a rock-solid

foundation for real-world success. Organize new projects and work with the Gameplay Framework Master Unreal's units and control systems Import 3D models and work with the Static Mesh Editor Create new landscapes and use Unreal's foliage system Bring characters and creatures to life with the Persona Editor Apply materials and build lighting Integrate and modify audio with the Unreal Sound Cue Editor Craft particle effects and simulate physics Set up and react to player inputs Build levels and entirely new worlds Get started with powerful Blueprint visual scripting system Script an arcade game from start to finish Create events that respond to player actions Spawn Actors during gameplay Design and create action-based encounters Optimize games for mobile devices and touch-based inputs Build menus with Unreal's UMG UI Designer Prepare your game for deployment Step-by-step instructions carefully walk you through the most common Unreal Engine 4 game development tasks. Practical, hands-on examples show you how to apply what you learn. Quizzes and Exercises help you test your knowledge and stretch your skills. Notes and tips point out shortcuts and solutions. All the project files and assets you'll need are available for download, including "before-and-after" files demonstrating initial setup and proper completion for every exercise. Discover how Unreal Engine 4 allows you to create exciting games using C++ and Blueprints. This book starts with installing, launching, and examining the details of Unreal Engine. Next, you will learn about Blueprints and C++ and how to leverage them. The following chapters talk in detail about gameplay, basic physics, and ray-casting for game development in Unreal Engine. Furthermore, you'll create material, meshes, and textures. The last chapter brings all the concepts together by building a demo game. By the end of the book, you'll be equipped with the know-how and techniques needed to develop and deploy your very own

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game in Unreal Engine. What You Will Learn Discover Blueprints and how to apply them in Unreal Engine 4 Get started with C++ programming in Unreal Engine 4 Apply the concepts of physics and ray-casting Work with the Gameplay Framework Who This Book Is For Beginners interested in learning Blueprints visual scripting and C++ for programming games in Unreal Engine 4 would find this book useful. Take your game development skills to the next level with one of the best engines on the market About This Book Build an entire AAA game level throughout the book Take your C++ scripting skills to the next level and use them extensively to build the game An advanced practical guide with a tutorial style approach that will help you make the best of Unreal engine 4 Who This Book Is For This book is for game developers who have a basic knowledge of Unreal Engine and C++ scripting knowledge. If you want to take the leap from a casual game developer to a full-fledged professional game developer with Unreal Engine 4, this is the book for you. What You Will Learn Script your player controls in C++ Build a superb and engaging level with advanced design techniques Program AI with C++ Use Cascade to add life to your games Use custom shaders and advanced shading techniques to make things pretty Implement an awesome UI in the game Control gameplay using data tables In Detail Unreal Engine 4 has garnered a lot of attention in the gaming world because of its new and improved graphics and rendering engine, the physics simulator, particle generator, and more. This book is the ideal guide to help you leverage all these features to create state-of-the-art games that capture the eye of your audience. Inside we'll explain advanced shaders and effects techniques and how you can implement them in your games. You'll create custom lighting effects, use the physics simulator to add that extra edge to your games, and create customized game environments that

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look visually stunning using the rendering technique. You'll find out how to use the new rendering engine efficiently, add amazing post-processing effects, and use data tables to create data-driven gameplay that is engaging and exciting. By the end of this book, you will be able to create professional games with stunning graphics using Unreal Engine 4! Style and approach An advanced guide that will take you to the next level of developing games with Unreal engine with illustrative examples that will make you confident of creating customized professional level games on your won.

Combine the powerful UE4 with Blender to create visually appealing and comprehensive game environments About This Book The only resource that shows how you can incorporate Blender into your Unreal Engine 4 Game environment Create amazing 3D game environments by leveraging the power of Blender and Unreal Engine 4 Practical step-by-step approach with plenty of illustrative examples to get you started immediately Who This Book Is For This book would be ideal for 3D artists and game designers who want to create amazing 3D game environments and leverage the power of Blender with Unreal Engine 4. 3D design basics would be necessary to get the most out of this book. Some previous experience with Blender would be helpful but not essential What You Will Learn Create a fully functioning game level of your own design using Blender and Unreal Engine 4 Customize your level with detailed 3D assets created with Blender Import assets into Unreal Engine 4 to create an amazing finished product Build a detailed dynamic environment with goals and an ending Explore Blender's incredible animation tools to animate elements of your game Create great environments using sound effects, particle effects, and class blueprints In Detail Unreal Engine 4 now has support for Blender, which was not available in earlier versions. This has opened up new

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possibilities and that is where this book comes in. This is the first book in the market combining these two powerful game and graphic engines. Readers will build an amazing high-level game environment with UE4 and will show them how to use the power of Blender 3D to create stunning animations and 3D effects for their game. This book will start with creating levels, 3D assets for the game, game progression, light and environment control, animation, and so on. Then it will teach readers to add amazing visual effects to their game by applying rendering, lighting, rigging, and compositing techniques in Blender. Finally, readers will learn how to smoothly transfer blender files to UE4 and animate the game assets. Each chapter will add complexities to the game environment. Style and approach This will have a clear, step-by-step approach to creating game assets in Blender and then importing them to UE4 to create stunning game environments. All asset creation techniques are explained in detail along with tips on how to use them to create your own game environments. The book offers end-to-end coverage of how to design a game level from scratch.

A step-by-step guide that paves the way for developing fantastic games with Unreal Engine 4 About This Book Learn about game development and the building blocks that go into creating a game A simple tutorial for beginners to get acquainted with the Unreal Engine architecture Learn about the features and functionalities of Unreal Engine 4 and how to use them to create your own games Who This Book Is For If you are new to game development and want to learn how games are created using Unreal Engine 4, this book is the right choice for you. You do not need prior game development experience, but it is expected that you have played games before. Knowledge of C++ would prove to be useful. What You Will Learn Learn what a game engine is, the history of Unreal Engine, and how game studios create

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games Explore the Unreal Engine 4 editor controls and learn how to use the editor to create a room in a game level Understand the basic structures of objects in a game, such as the differences between BSP and static meshes Make objects interactive using level blueprints Learn more about computer graphics rendering; how materials and light are rendered in your game Get acquainted with the Material Editor to create materials and use different types of lights in the game levels Utilize the various editors, tools, and features such as UI, the particle system, audio, terrain manipulation, and cinematics in Unreal Engine 4 to create game levels In Detail Unreal Engine 4 is a powerful game development engine that provides rich functionalities to create 2D and 3D games across multiple platforms. Many people know what a game is and they play games every day, but how many of them know how to create a game? Unreal Engine technology powers hundreds of games, and thousands of individuals have built careers and companies around skills developed using this engine. Learning Unreal Engine 4 Game Development starts with small, simple game ideas and playable projects that you can actually finish. The book first teaches you the basics of using Unreal Engine to create a simple game level. Then, you'll learn how to add details such as actors, animation, effects, and so on to the game. The complexity will increase over the chapters and the examples chosen will help you learn a wide variety of game development techniques. This book aims to equip you with the confidence and skills to design and build your own games using Unreal Engine 4. By the end of this book, you'll have learnt about the entire Unreal suite and know how to successfully create fun, simple games. Style and approach This book explains in detail what goes into the development of a game, provides hands-on examples that you can follow to create the different components of a game, and provides

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sufficient background/theory to equip you with a solid foundation for creating your own games.

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