Unreal Development Kit Game Programming With UnrealScript: Beginner's Guide

Publisher's note: This edition from 2019 is based on Unreal Engine 4 and does not make use of the most recent Unreal Engine features. A new third edition, updated for Unreal Engine 5 blueprints including new topics, such as implementing procedural generation and creating a product configurator, has now been published. Key FeaturesDesign a fully functional game in UE4 without writing a single line of codeImplement visual scripting to develop gameplay mechanics, UI, visual effects, VR and artificial intelligenceDeploy your game on multiple platforms and share it with the worldBook 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 learnUnderstand programming concepts in BlueprintsCreate prototypes and iterate new game mechanics rapidlyBuild user interface elements and interactive menusUse advanced Blueprint nodes to manage the complexity of a gameExplore all the features of the Blueprint editor, such as the Components tab, Viewport, and Event

GraphGet to grips with object-oriented programming (OOP) concepts and explore the Gameplay FrameworkLearn Virtual Reality development with UE BlueprintWho 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.

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. 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.

Learn the tools and techniques of game design using a project-based approach with Unreal Engine 4 and C++ Key FeaturesKickstart your career or dive into a new hobby by exploring game design with UE4 and C++Learn the techniques needed to prototype and develop your own ideasReinforce your skills with project-

based learning by building a series of games from scratchBook Description Game development can be both a creatively fulfilling hobby and a full-time career path. It's also an exciting way to improve your C++ skills and apply them in engaging and challenging projects. Game Development Projects with Unreal Engine starts with the basic skills you'll need to get started as a game developer. The fundamentals of game design will be explained clearly and demonstrated practically with realistic exercises. You'll then apply what you've learned with challenging activities. The book starts with an introduction to the Unreal Editor and key concepts such as actors, blueprints, animations, inheritance, and player input. You'll then move on to the first of three projects: building a dodgeball game. In this project, you'll explore line traces, collisions, projectiles, user interface, and sound effects, combining these concepts to showcase your new skills. You'll then move on to the second project; a side-scroller game, where you'll implement concepts including animation blending, enemy AI, spawning objects, and collectibles. The final project is an FPS game, where you will cover the key concepts behind

creating a multiplayer environment. By the end of this Unreal Engine 4 game development book, you'll have the confidence and knowledge to get started on your own creative UE4 projects and bring your ideas to life. What you will learnCreate a fully-functional third-person character and enemiesBuild navigation with keyboard, mouse, gamepad, and touch controlsProgram logic and game mechanics with collision and particle effectsExplore AI for games with Blackboards and Behavior TreesBuild character animations with Animation Blueprints and MontagesTest your game for mobile devices using mobile previewAdd polish to your game with visual and sound effectsMaster the fundamentals of game UI design using a heads-up displayWho this book is for This book is suitable for anyone who wants to get started using UE4 for game development. It will also be useful for anyone who has used Unreal Engine before and wants to consolidate, improve and apply their skills. To grasp the concepts explained in this book better, you must have prior knowledge of the basics of C++ and understand variables, functions, classes, polymorphism, and pointers. For full compatibility with the IDE used in this

book, a Windows system is recommended.
Ask a Manager
Unreal Engine 4 AI Programming Essentials
Beginning Unreal Engine 4 Blueprints
Visual Scripting
Unreal Engine Physics Essentials
Beginner's Guide
Learning Unreal Engine Android Game
Development

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.

Unreal Engine 4 (UE4) is a popular and award-winning game engine that powers some of the most popular games. A truly powerful tool for game development, there has never been a better time to use it for both commercial and independent projects. With more than 100 recipes, this book shows how to unleash the power of C++ while

developing games ...

"UnrealScript Game Programming" focuses on providing professionals, students, and hobbyists with a solid grounding in the features and development tasks characteristic of UnrealScript. A comprehensive guide to the features of programming a game, it begins with basic language features and how to set up a primary computing environment for programming and progresses through the construction of a complete, fully function game in Unreal Tournament. "UnrealScript Game Programming" gives readers a welcome alternative to the spotty, incomplete, and inconsistent treatments of basic programming and basic programming features that characterize all other sources of information about UnrealScript. Develop fantastic games and solve common development problems with Unreal Engine 4 About This Book Investigate the big world of Unreal Engine, computer graphics rendering and Material editor to implement in your games Construct a top-notch game by using the assets offered by Unreal Engine, thereby reducing the time to download, create assets on your own. Understand when and why to use different features and functionalities of Unreal Engine 4 to create your own games Learn to use Unreal 4 by making a first person puzzle game, Blockmania, for Android. Who This Book Is For This path is ideal for those who have a strong interest in game development and some development experience. An intermediate

understanding of C++ is recommended. What You Will Learn Explore the Unreal Engine 4 editor controls and learn how to use the editor to create a room in a game level Get clued up about working with Slate, Unreal's UI solution through the UMG Editor Put together your own content and materials to build cutscenes and learn how to light scenes effectively Get tips and tricks on how to create environments using terrain for outdoor areas and a workflow for interiors as well using brushes Explore the ways to package your game for Android Devices and porting it to the Google Playstore Know inside out about creating materials, and applying them to assets for better performance Understand the differences between BSP and static meshes to make objects interactive In Detail Unreal Engine technology powers hundreds of games. This Learning Path will help you create great 2D and 3D games that are distributed across multiple platforms. The first module, Learning Unreal Engine Game Development, starts with small, simple game ideas and playable projects. It starts by showing you the basics in the context of an individual game level. Then, you'll learn how to add details such as actors, animation, effects, and so on to the game. This module 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 module, you will be able to put into practise your own content.After getting familiar with Unreal Engine's core concepts, it's time that you dive into

the field of game development. In this second module, Unreal Engine Game Development Cookbook we show you how to solve development problems using Unreal Engine, which you can work through as you build your own unique project. 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. You will start by building out levels for your game, followed by recipes to help you create environments, place meshes, and implement your characters. By the end of this module, you will see how to create a health bar and main menu, and then get your game ready to be deployed and published.The final step is to create your very own game that will keep mobile users hooked. This is what you'll be learning in our third module, Learning Unreal Engine Android Game Development,Once you get the hang of things, you will start developing our game, wherein you will graduate from movement and character control to AI and spawning. Once you've created your application, you will learn how to port and publish your game to the Google Play Store. With this course, you will be inspired to come up with your own great ideas for your future game development projects. Style and approach A practical collection of bestselling Packt titles, this Learning Path aims to help you skill up with Unreal Engine by curating some of our best titles into an essential, sequential collection.

Learning C++ by Creating Games with Unreal
Engine 4, Second Edition
Game Programming Patterns
UnrealScript Game Programming All in One
Unreal Engine 4.X By Example
Build a Complete Tower Defense Game from
Scratch Using the Unreal Development Kit
Unreal Engine 4.x Scripting with C++ Cookbook

*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.

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.

Game Audio Implementation offers a unique practical approach to learning all about game audio. If you've always wanted to hear your sound or music in a real game then this is the book for you. Each chapter is accompanied by its own game level where you can see the techniques and theories in action before working through over 70 exercises to develop your own demo level. Taking you all the way from first principles to complex interactive systems in the industry standard Unreal Engine© you'll gain the skills to implement your sound and music along with a deep transferable knowledge of the principles you can apply across a range of other game development tools. The accompanying website (www.gameaudioimplementation.com) includes: 12 downloadable demonstration games A unique exercise level for you to develop for your portfolio An up-to-date online bibliography with further reading for each chapter A free sound library with hundreds of game SFX 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.

Unreal Development Kit Game Programming with Unrealscript

Learn to build your first games and bring your ideas to life using UE4 and C++

Programming professional 3D games with Unreal Engine 4

Game Development Projects with Unreal Engine

Build High-Performance AAA Games with UE 4, 2nd Edition

Develop quality game components and solve scripting problems with the power of C++ and UE4, 2nd Edition

Hailed as a "must-have textbook" (CHOICE, January 2O1O), the first edition of Game Engine Architecture provided readers with a complete guide to the theory and practice of game engine software development. Updating the content to match today's landscape of game engine architecture, this second edition continues to thoroughly cover the major components that make up a typical commercial game engine. New to the Second Edition Information on new topics, including the latest variant of the C++ programming language, C++11, and the architecture of the eighth generation of gaming consoles, the Xbox One and PlayStation 4 New chapter on audio technology covering the fundamentals of the physics, mathematics, and technology that go into creating an AAA game audio engine Updated sections on multicore

programming, pipelined CPU architecture and optimization, localization, pseudovectors and Grassman algebra, dual quaternions, SIMD vector math, memory alignment, and anti-aliasing Insight into the making of Naughty Dog's latest hit, The Last of Us The book presents the theory underlying various subsystems that comprise a commercial game engine as well as the data structures, algorithms, and software interfaces that are typically used to implement them. It primarily focuses on the engine itself, including a host of low-level foundation systems, the rendering engine, the collision system, the physics simulation, character animation, and audio. An in-depth discussion on the "gameplay foundation layer" delves into the game's object model, world editor, event system, and scripting system. The text also touches on some aspects of gameplay programming, including player mechanics, cameras, and AI. An awareness-building tool and a jumping-off point for further learning, Game Engine Architecture, Second Edition gives readers a solid understanding of both the theory and common practices employed within each of the engineering disciplines covered. The book will help readers on their journey through this fascinating and multifaceted field.

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

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 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. The biggest challenge facing many game programmers is completing their game. Most game projects fizzle out, overwhelmed by the complexity of their own code. Game Programming Patterns tackles that exact problem. Based on years of experience in shipped AAA titles, this book collects proven patterns to untangle and optimize your game, organized as independent recipes so you can pick just the patterns you need. You will learn how to write a robust game loop, how to organize your entities using components, and take advantage of the CPUs cache to improve your performance. You'll dive deep into how scripting engines encode behavior, how quadtrees and other spatial partitions optimize your engine, and how other classic design patterns can be used in games.

Game Development and Simulation with Unreal Technology, Second Edition
Getting Started with UDK
Learn C++ and Unreal Engine by Creating a Complete Action Game
UnrealScript Game Programming Cookbook
Unreal Engine C++ the Ultimate Developer's Handbook

Mastering Game Development with Unreal Engine 4

Unreal Development Kit Game Programming with UnrealscriptBeginner's GuidePackt Publishing Ltd Combine the powerful UE 4 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 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 UE 4 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.

Using Unreal Engine 3, the authors teach aspiring game makers the fundamentals of designing a computer game. The only prerequisite is a basic working knowledge of computers and a desire to build an original game. To get the most out of the book, the authors recommend gathering up some friends and working through the book together as a team and with time limits, mimicking the key elements of real world commercial game development. This book mirrors the curriculum used at CampGame, a six week summer program organized for high school students at The New York University and Arizona State University that has been running successfully for over five years. Students enter with no prior knowledge of game making whatsoever, and through the course of six intensive weeks, they finish as teams of budding game developers who have already completed fully functional games with their own designs, code, and art. Unreal® is a registered trademark of Epic Games, Inc. Copyright in the Unreal Development Kit, Unreal Tournament, and Unreal Engine 3 is owned by Epic Games. Content of those programs included in screen shots in this book is copyrighted by Epic Games and used with the permission of Epic Games.

Discover all the secrets of Unreal Engine and create seven fully functional games with the help of step-by-step instructions About This Book Understand what a Blueprint is and how to create a complex visual scripting code Discover the infinite possibilities that Unreal Engine offers, and understand which tool to use, where and when Learn to think like a real game developer in order to create enjoyable and bug-free games using this comprehensive and practical handbook Who This Book Is For This book is ideal for intermediate level developers who know how to use Unreal Engine and want to go through a series of projects that will further their expertise. Working knowledge of C++ is a must. What You Will Learn Write clean and reusable Blueprint scripts Develop any kind of game you have in mind, following the rules used by experts Move through Unreal Engine 4, always knowing what you are doing and where to find the right tool for your needs Integrate C++ code into your projects using Visual Studio and the tools that Unreal provides Extricate between classes, nodes, interfaces, macros, and functions Work with different types of assets, from 3D objects to audio sources, from UI buttons to animations Explore all the aspects of the game logic—collisions, navigation meshes, matinees, volumes, events, and states In Detail With the arrival of Unreal Engine 4, a new wonderful tool was born: Blueprint. This visual scripting tool allows even non-programmers to develop the logic for their games, allowing almost anyone to create entire games without the need to write a single line of code. The range of features you can access with Blueprint script is pretty extensive, making it one of the foremost choices for many game developers. Unreal Engine Game Development Blueprints helps you unleash the real power of Unreal by helping you to create engaging and spectacular games. It will explain all the aspects of developing a game, focusing on visual scripting, and giving

you all the information you need to create your own games. We start with an introductory chapter to help you move fluidly inside the Blueprint user interface, recognize its different components, and understand any already written Blueprint script. Following this, you will learn how to modify generated Blueprint classes to produce a single player tic-tac-toe game and personalize it. Next, you will learn how to create simple user interfaces, and how to extend Blueprints through code. This will help you make an informed decision between choosing Blueprint or code. You will then see the real power of Unreal unleashed as you create a beautiful scene with moving, AI controlled objects, particles, and lights. Then, you will learn how to create AI using a behavior tree and a global level Blueprint, how to modify the camera, and how to shoot custom bullets. Finally, you will create a complex game using Blueprintable components complete with a menu, power-up, dangerous objects, and different weapons. Style and approach This is an easy-to-follow guide full of practical game examples. Each chapter contains step-by-step instructions to build a complete game and each game uses a different tool in order to cover all the topics in a detailed and progressive manner.

A Practical Guide Using the Unreal Engine
Unreal Engine: Game Development from A to Z
Developing Games for iPad, iPhone, and iPod Touch
Unreal Game Development
Unreal Engine Game Development Cookbook
Foundation for Simple to Complex Games Using Unreal Engine 4

Introduce the versatility and simplicity of the highly popular, powerful UDK game development engine with this book's thorough presentation and project-based training designed specifically for those who have no experience with this engine. You all the information you need to create your own games.

Written in cookbook style, this book offers many recipes to
learn game design with UDK. Each recipe contains step-by-
step instructions followed by analysis of what was done in
each task and other useful information. The book is designed
so that you can read it chapter by chapter, or you can look at
the list of recipes and refer to them in no particular order. This
book is meant for game artists who are getting used to UDK
but may feel the need for guidance on matters of
implementation. It also targets brave beginners who are
struggling to find an all in one package for getting started with
UDK, and want a ready to hand reference. Level designers can
use this book to gauge their understanding of the editor, check
for specific problems, and discover gems they may not have
come across before.

Advanced Guide to Python 3 Programming delves deeply into
a host of subjects that you need to understand if you are to
develop sophisticated real-world programs. Each topic is
preceded by an introduction followed by more advanced
topics, along with numerous examples, that take you to an
advanced level. There are nine different sections within the
book covering Computer Graphics (including GUIs), Games,
Testing, File Input and Output, Databases Access, Logging,
Concurrency and Parallelism, Reactive programming, and
Networking. Each section is self-contained and can either be
read on its own or as part of the book as a whole. This book is
aimed at the those who have learnt the basics of the Python 3
language but want to delve deeper into Python's eco system of
additional libraries and modules, to explore concurrency and
parallelism, to create impressive looking graphical interfaces,
to work with databases and files and to provide professional
logging facilities.

From the creator of the popular website Ask a Manager and New York's work-advice columnist comes a witty, practical guide to 200 difficult professional conversations—featuring all-new advice! There's a reason Alison Green has been called "the Dear Abby of the work world." Ten years as a workplace-advice columnist have taught her that people avoid awkward conversations in the office because they simply don't know what to say. Thankfully, Green does—and in this incredibly helpful book, she tackles the tough discussions you may need to have during your career. You'll learn what to say when • coworkers push their work on you—then take credit for it • you accidentally trash-talk someone in an email then hit "reply all" • you're being micromanaged—or not being managed at all • you catch a colleague in a lie • your boss seems unhappy with your work • your cubemate's loud speakerphone is making you homicidal • you got drunk at the holiday party Praise for Ask a Manager "A must-read for anyone who works . . . [Alison Green's] advice boils down to the idea that you should be professional (even when others are not) and that communicating in a straightforward manner with candor and kindness will get you far, no matter where you work."—Booklist (starred review) "The author's friendly, warm, no-nonsense writing is a pleasure to read, and her advice can be widely applied to relationships in all areas of readers' lives. Ideal for anyone new to the job market or new to management, or anyone hoping to improve their work experience."—Library Journal (starred review) "I am a huge fan of Alison Green's Ask a Manager column. This book is even better. It teaches us how to deal with many of the most vexing big and little problems in our workplaces—and to do so with grace, confidence, and a sense of humor."—Robert Sutton, Stanford

professor and author of The No Asshole Rule and The Asshole Survival Guide ❝Ask a Manager is the ultimate playbook for navigating the traditional workforce in a diplomatic but firm way.❞Erin Lowry, author of Broke Millennial: Stop Scraping By and Get Your Financial Life Together

Models, Textures, Animation, & Blueprint

Learning Unreal Engine Game Development

Advanced Guide to Python 3 Programming

Using C++: From Beginner to Pro

Unreal Development Kit Game Programming with UnrealScript

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 designUnderstand how to use
Unreal Engine 4Design amazing levels
for your characters to play inScript 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.
Description: This tutorial-based book*

allows readers to create a first-person game from start to finish using industry-standard (and free to student) tools of Maya, Substance Painter, and Unreal Engine. The first half of the book lays out the basics of using Maya and Substance Painter to create game-ready assets. This includes polygonal modeling, UV layout, and custom texture painting. Then, the book covers rigging and animation solutions to create assets to be placed in the game including animated first-person assets and motion-captured NPC animations. Finally, readers can put it all together and build interactivity that allows the player to create a finished game using the assets built and animated earlier in the book. • Written by industry professionals with real-world experience in building assets and games. • Build a complete game from start to finish. • Learn what the pros use: construct all assets using the tools used at industries across the world. • All software used are free to students. • When complete, students will have a playable version of an FPS game. Jing Tian Li is a graduate of China's Central Academy of Fine Arts and New York's

*School of Visual Arts, where he earned
an MFA in Computer Art. He currently is
an Assistant Professor of 3D Animation &
Game Design at the University of the
Incarnate Word in San Antonio, Texas.
Kassandra Arevalo is an instructor of 3D
Animation & Game Design at the
University of the Incarnate Word in San
Antonio, Texas. She previously worked
as an animator at Immersed Games. Matt
Tovar is an industry veteran animator.
He has worked at Naughty Dog, Infinity
Ward, and Sony Interactive on such
games as The Last of Us, Call of Duty:
Modern Warfare, and most recently
Marvel's Avengers with Crystal
Dynamics. He is an Assistant Professor
of 3D Animation at the University of the
Incarnate Word in San Antonio, Texas.
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.*

*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.*
*Unreal Engine 4 Game Development
Quick Start Guide*
*Game Development and Simulation with
Unreal Technology*
*Creating Games with Unreal Engine,
Substance Painter, & Maya*
iOS Game Development
*Blueprints Visual Scripting for Unreal
Engine*
*3D Game Design with Unreal Engine 4
and Blender*

Dr. Alireza Tavakkoli's Game Development and
Simulation with Unreal Technology covers the latest
version of Unreal Technology. Since the 1990s Epic

Games, Inc. has been leading the revolution of gaming graphics and Artificial Intelligence. Now, unreal technology is one of the most potent and prominent engines that is currently used in games. Its influence can be spotted in classic triple A titles like, Fortnite, Gears of War 2, Borderlands 2, and XCOM: Enemy Unknown. Tavakkoli goes into detail concerning the creation of game level designs, blueprint coding, shader programing, as well as artificial intelligence concepts to help readers in creating their own games. Game Development also includes a number of practice friendly extensions and concept modules to help solidify the reader's understanding of concepts and techniques. The book is divided into three sections that acts as building blocks in order to facilitate the comprehension of the material.

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 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.

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++ 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 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.

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.

Game Audio Implementation

Unreal Engine Game Development Blueprints

Unreal Development Kit Game Design Cookbook

Learning C++ by Creating Games with UE4

Unreal Engine 4 Scripting with C++ Cookbook

The faster way to build games using UE4 Blueprints

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.
To create successful games for the iPhone family of mobile devices, developers need to know how touch-input, real-time graphics, and sound come together in the iOS environment. iOS Game Development: Developing Games for iPad, iPhone, and iPod Touch takes you from the basics of app coding to releasing and marketing your game on the App Store. The book offers a wealth of previously unpublished information about the iOS platform. The text focuses on the concrete requirements of game developers, presenting in-depth details on each step in the mobile game development process. It explains the use of OpenGL ES for 2D/3D graphics and OpenAL for sound, both of which are recommended for game performance on the iOS platform. It also covers new APIs

such as the GLKit, GameKit, and Box2D Physics Engine. To better understand the explanations, the author encourages you to access more than 30 iOS example apps from his website. Each app represents a small piece of the complex field of game development in a straightforward manner. The apps can be run on any device in the iPhone family and have been extensively tested with various iOS versions. Suitable for both newcomers and more advanced developers, this color book helps you get started with iOS game development. By following the book's clear descriptions and example programs, you will understand how to implement the fundamentals in smaller game projects and be able to create your first game for the App Store.

"This course is intended for newcomers to UnrealScript. If you're already using the UDK Editor and are familiar with programming basics, then this course will help you move up to the next level, orienting you with the UnrealScript language. Packt video courses are designed to cover the breadth of the topic in short, hands-on, task-based videos. Each course is divided into short manageable sections, so you can watch the whole thing or jump to the bit you need. The focus is on practical instructions and screencasts showing you how to get the job done. Taking a step-by-step approach, you'll learn how to set up your development environment, discuss some core features of the UnrealScript programming language, and build a feature-filled game level in incremental stages."--Resource description page.

This book is written by someone who is passionate about games for those who are equally passionate about games. The step-by-step instructions contained within this guide will make creating your first game simple.If you have ever had the urge

to know more about how all those amazing games you played for countless hours are created, then this book is definitely for you! This step-by-step tutorial will teach you how to create a complete game within UDK.Even if you have no prior experience of UDK, you can still start building the games you want today.

Unreal Engine 4 Game Development Essentials
Game Engine Architecture, Second Edition
UDK Game Development
Beginning Unreal Game Development
Unreal Engine 4 Game Development in 24 Hours, Sams Teach Yourself
How to Navigate Clueless Colleagues, Lunch-Stealing Bosses, and the Rest of Your Life at Work

Filled with a practical collection of recipes, the UnrealScript Game Programming Cookbook is full of clear step-by-step instructions that help you harness the powerful scripting language to supplement and add AAA quality to your very own projects.This essential Cookbook has been assembled with both the hobbyist and professional developer in mind. A solid foundation of object oriented programming knowledge will be required. All examples can be replicated and used by UDK and in some cases other software and tools - all of which are available for free – can be used too.

Over 4O 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 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. 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.

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.