

Learning C By Developing Games With Unity 5 X Second Edition

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Learning C# by Developing Games with Unity 2020 - Harrison Ferrone 2020-08-21

This fifth edition of the popular C# guide helps you learn the building blocks of C# language, right from variables to classes and exception handling. After getting to grips with the basics of C# programming, it takes you through the world of Unity game development and how you can apply C# knowledge using game development examples.

Pro Unity Game Development with C# - Alan Thorn 2014-05-21

In Pro Unity Game Development with C#, Alan Thorn, author of Learn Unity for 2D Game Development and experienced game developer, takes you through the complete C# workflow for developing a cross-platform first person shooter in Unity. C# is the most popular programming language for experienced Unity developers, helping them get the most out of what Unity offers. If you're already using C# with Unity and you want to take the next step in becoming an experienced, professional-level game developer, this is the book you need. Whether you are a student, an indie developer, or a season game dev professional, you'll find helpful C# examples of how to build intelligent enemies, create event systems and GUIs, develop save-game states, and lots more. You'll understand and apply powerful programming concepts such as singleton classes, component based design, resolution independence, delegates, and event driven programming. By the end of the book, you will have a complete first person shooter game up and running with Unity. Plus you'll be equipped with the know-how and techniques needed to deploy your own professional-grade C# games. If you already know a bit of C# and you want to improve your Unity skills, this is just the right book for you.

Hands-On Unity 2020 Game Development - Nicolas Alejandro Borrromeo 2020-07-29

Build immersive game experiences using the new Unity 2020 features with this practical guide Key FeaturesUnleash the capabilities of C# scripting for creating immersive UI, graphics, Game AI agents and much moreExplore Unity's latest tools, including Universal Render Pipeline, Shader Graph, and VFX graph, to enhance graphics and animationGet started with building augmented reality experience using Unity's AR FoundationBook Description Over the years, the Unity game engine has extended its scope from just being about creating video games to building AR/VR experiences, complex simulations, real-time realistic rendering, films, and serious games for training and education. Its features for implementing gameplay, graphics, and customization using C# programming make Unity a comprehensive platform for developing professional-level, rich experiences. With this book, you'll be able to build impressive Unity projects in a step-by-step manner and apply your knowledge of Unity concepts to create a real-world game. Complete with hands-on tutorials and projects, this easy-to-follow guide will show you how to develop your first complete game using a variety of Unity tools. As you make progress, you'll learn how to make the most of the Unity Editor and create scripts using the C# programming language. This Unity game development book will then take you through integrating graphics, sound, and animations and manipulating physics to create impressive mechanics for your games. You'll also learn how to code a simple AI agent to challenge the user and use profiling tools to ensure that the code runs in a performant way. Finally, you'll get to grips with Unity's AR Foundation for creating AR experiences for 3D apps and games. By the end of this book, you'll have developed a complete game and will have built a solid foundation using Unity's tooling ecosystem to develop game projects of any scale. What you will learnWrite scripts for customizing various aspects of a game, such as physics, gameplay, and UIProgram rich shaders and effects using Unity's new Shader Graph and Universal Render PipelineImplement postprocessing to increase graphics quality with full-screen effectsCreate rich particle systems for your Unity games from scratch using VFX Graph and ShurikenAdd animations to your game using the Animator, Cinemachine, and TimelineImplement

game artificial intelligence (AI) to control character behaviorDetect and fix optimization issues using profilers and batchingWho this book is for This book is for game developers looking to migrate to the Unity game engine. If you are a developer with some exposure to Unity, this book will help you explore its latest features. Prior experience with C# programming is required to get the most out of the book.

Learning C# by Developing Games with Unity 2021 - Harrison Ferrone 2021-10-29

Learn C# programming from scratch using Unity as a fun and accessible entry point with this updated edition of the bestselling series. Includes invitation to join the online Unity Game Development community to read the book alongside peers, Unity developers/C# programmers and Harrison Ferrone. Purchase of the print or Kindle book includes a free eBook in the PDF format. Key Features Learn C# programming basics, terminology, and coding best practices Become confident with Unity fundamentals and features in line with Unity 2021 Apply your C# knowledge in practice and build a working first-person shooter game prototype in Unity Book Description The Learning C# by Developing Games with Unity series has established itself as a popular choice for getting up to speed with C#, a powerful and versatile programming language with a wide array of applications in various domains. This bestselling franchise presents a clear path for learning C# programming from the ground up through the world of Unity game development. This sixth edition has been updated to introduce modern C# features with Unity 2021. A new chapter has also been added that covers reading and writing binary data from files, which will help you become proficient in handling errors and asynchronous operations. The book acquaints you with the core concepts of programming in C#, including variables, classes, and object-oriented programming. You will explore the fundamentals of Unity game development, including game design, lighting basics, player movement, camera controls, and collisions. You will write C# scripts for simple game mechanics, perform procedural programming, and add complexity to your games by introducing smart enemies and damage-causing projectiles. By the end of the book, you will have developed the skills to become proficient in C# programming and built a playable game prototype with the Unity game engine. What you will learn Follow simple steps and examples to create and implement C# scripts in Unity Develop a 3D mindset to build games that come to life Create basic game mechanics such as player controllers and shooting projectiles using C# Divide your code into pluggable building blocks using interfaces, abstract classes, and class extensions Become familiar with stacks, queues, exceptions, error handling, and other core C# concepts Learn how to handle text, XML, and JSON data to save and load your game data Explore the basics of AI for games and implement them to control enemy behavior Who this book is for If you're a developer, programmer, hobbyist, or anyone who wants to get started with Unity and C# programming in a fun and engaging manner, this book is for you. You'll still be able to follow along if you don't have programming experience, but knowing the basics will help you get the most out of this book.

Learning C# by Developing Games with Unity 3D - Terry Norton 2013-09-25

This book uses the learning-by-example approach. It takes simple examples from games to introduce all the main concepts of programming in an easy-to-digest and immediately recognizable way.This book is for the total beginner to any type of programming, focusing on the writing of C# code and scripts only. There are many parts that make up the Unity game engine. It is assumed that the reader already knows their way around Unity's user interface. The code editor used in this book is the MonoDevelop editor supplied by Unity.

Learning C# 7 by Developing Games with Unity 2017 - Micael DaGraça 2017-12-26

Develop your first interactive 2D and 3D platform game by learning the fundamentals of C# Key Features This is a step-by-step guide to learn the fundamentals of C# 7 scripting to develop GameObjects and master the basics of the new UI system in Unity Build and develop your 2D game right from scratch while implementing the principles of object-oriented programming and coding in C# 7 Get to grips with the fundamentals of optimizing your game using the latest features of Unity 2017 Book Description Do you want to learn C# programming by creating fun and interactive games using the latest Unity 2017 platform? If so, look no further; this is the right book for you. Get started with programming C# so you can create 2D and 3D games in Unity. We will walk you through the basics to get you started with C# 7 and its latest features. Then, explore the use of C# 7 and its latest functional programming capabilities to create amazing games with Unity 2017. You will create your first C# script for Unity, add objects into it, and learn how to create game elements with it. Work with the latest functional programming features of C# and leverage them for great game scripting. Throughout the book, you will learn to use the new Unity 2017 2D tool set and create an interactive 2D game with it. You will make enemies appear to challenge your player, and discover some optimization techniques for great game performance. At the end, you will learn how to transform a 2D game into 3D, and you will be able to skill up to become a pro C# programmer with Unity 2017! What you will learn Create your first 2D and 3D games in Unity Understand the fundamentals of variables, methods, and code syntax in C# Use loops and collections efficiently in Unity to reduce the amount of code Develop a game using object-oriented programming principles Implement simple enemy characters into the game to learn point-to-point movement and Tree behaviors Avoid performance mistakes by implementing different optimization techniques Export 3D models and animations and import them inside a Unity project Who this book is for This book is for game developers and enthusiasts who want to get started with game development with Unity 2017. No prior experience of C# is required.

Learning C# 7 By Developing Games with Unity 2017 - Micael DaGraca 2017-12-26

Develop your first interactive 2D and 3D platform game by learning the fundamentals of C# About This Book Learn the fundamentals of C# 7 scripting to develop GameObjects and master the basics of the new UI system in Unity 2017 Build and develop your 2D game right from scratch and extend it to 3D while implementing the principles of object-oriented programming and coding in C# 7 Get to grips with the fundamentals of optimizing your game using the latest features of Unity 2017 Who This Book Is For This book is for game developers and enthusiasts who want to get started with game development with Unity 2017. No prior experience of C# is required. What You Will Learn Create your first 2D and 3D games in Unity Understand the fundamentals of variables, methods, and code syntax in C# Use loops and collections efficiently in Unity to reduce the amount of code Develop a game using object-oriented programming principles Implement simple enemy characters into the game to learn point-to-point movement and Tree behaviors Avoid performance mistakes by implementing different optimization techniques Export 3D models and animations and import them inside a Unity project In Detail Do you want to learn C# programming by creating fun and interactive games using the latest Unity 2017 platform? If so, look no further; this is the right book for you. Get started with programming C# so you can create 2D and 3D games in Unity. We will walk you through the basics to get you started with C# 7 and its latest features. Then, explore the use of C# 7 and its latest functional programming capabilities to create amazing games with Unity 2017. You will create your first C# script for Unity, add objects into it, and learn how to create game elements with it. Work with the latest functional programming features of C# and leverage them for great game scripting. Throughout the book, you will learn to use the new Unity 2017 2D tool set and create an interactive 2D game with it. You will make enemies appear to challenge your player, and discover some optimization techniques for great game performance. At the end, you will learn how to transform a 2D game into 3D, and you will be able to skill up to become a pro C# programmer with Unity 2017! Style and approach The book takes a practical, step-by-step approach where you learn C# coding while developing fun and interactive games.

Beginning 3D Game Development with Unity - Sue Blackman 2011-08-18 Beginning 3D Game Development with Unity is perfect for those who would like to come to grips with programming Unity. You may be an artist who has learned 3D tools such as 3ds Max, Maya, or Cinema 4D, or you may come from 2D tools such as Photoshop and Illustrator. On the

other hand, you may just want to familiarize yourself with programming games and the latest ideas in game production. This book introduces key game production concepts in an artist-friendly way, and rapidly teaches the basic scripting skills you'll need with Unity. It goes on to show how you, as an independent game artist, can create casual interactive adventure games in the style of Telltale's Tales of Monkey Island, while also giving you a firm foundation in game logic and design. The first part of the book explains the logic involved in game interaction, and soon has you creating game assets through simple examples that you can build upon and gradually expand. In the second part, you'll build the foundations of a point-and-click style first-person adventure game—including reusable state management scripts, load/save functionality, a robust inventory system, and a bonus feature: a dynamically configured maze and mini-map. With the help of the provided 2D and 3D content, you'll learn to evaluate and deal with challenges in bite-sized pieces as the project progresses, gaining valuable problem-solving skills in interactive design. By the end of the book, you will be able to actively use the Unity 3D game engine, having learned the necessary workflows to utilize your own assets. You will also have an assortment of reusable scripts and art assets with which to build future games.

Game Programming with Unity and C# - Casey Hardman 2020-06-13 Designed for beginners with no knowledge or experience in game development or programming, this book teaches the essentials of the Unity game engine, the C# programming language, and the art of object-oriented programming. New concepts are not only explained, but thoroughly demonstrated. Starting with an introduction to Unity, you'll learn about scenes, GameObjects, prefabs, components, and how to use the various windows to interact with the engine. You'll then dive into the fundamentals of programming by reviewing syntax rules, formatting, methods, variables, objects and types, classes, and inheritance, all while getting your hands dirty writing and testing code yourself. Later, the book explains how to expose script data in the Inspector and the basics of Unity's serialization system. This carefully crafted work guides you through the planning and development of bare bones, simple game projects designed to exercise programming concepts while keeping less relevant interruptions out of the way, allowing you to focus on the implementation of game mechanics first and foremost. Through these example projects, the book teaches input handling, rigidbodies, colliders, cameras, prefab instantiation, scene loading, user interface design and coding, and more. By the end, you'll have built a solid foundation in programming that will pave your way forward in understanding core C# syntax and fundamentals of object-oriented programming—not just what to type but why it's typed and what it's really doing. Game Programming with Unity and C# will send you on your way to becoming comfortable with the Unity game engine and its documentation and how to independently seek further information on yet-untouched concepts and challenges. What You'll Learn Understand the fundamentals of object-oriented computer programming, including topics specifically relevant for games. Leverage beginner-to-intermediate-level skills of the C# programming language and its syntax. Review all major component types of the Unity game engine: colliders and rigidbodies, lights, cameras, scripts, etc. Use essential knowledge of the Unity game engine and its features to balance gameplay mechanics for making interesting experiences. Who This Book Is For Beginners who have no prior experience in programming or game development who would like to learn with a solid foundation that prepares them to further develop their skills.

Unity 5 - Chris Dickinson 2017-07-14

Explore every nook and cranny of Unity 5 to turn your imaginations into reality About This Book* Demystify the C# programming language in Unity 5.x.* Unleash the power of Unity to create a wide variety of projects in numerous genres and formats.* Master the art of optimization for Unity 5.x applications with tips and techniques that will further enhance your game. Who This Book Is For Beginner level Unity developers who do not have much programming experience. What You Will Learn* Master the art of applying C# in Unity. Get to know about techniques to turn your game idea into working project.* Use loops and collections efficiently in Unity to reduce the amount of code.* Create and code a good-looking functional UI system for your game.* Find out how to create exciting and interactive games using GUIs.* Work with different animation assets and components to enhance your game further.* Personalize your game by learning how to use Unity's advanced animation system.* Create, visualize, and edit animated creatures to add to your already amazing game.* Familiarize yourself with the tools and

practices of game development Discover how to create the Game Manager class to, generate game levels, and develop UI for the game.* Use the Unity Profiler to find bottlenecks anywhere in your application, and discover how to resolve them.* Implement best practices for C# scripting to avoid common mistakesIn DetailUnity is a cross-platform game engine that is used to develop 2D and 3D video games. Unity 5 is the latest version, and adds a real-time global illumination to the games; and its powerful new features help to improve a game's efficiency.If you love games and want to learn how to make them but have no idea where to begin, then this course is built just for you. This learning path is divided into three modules which will take you in this incredible journey of creating games.The course begins with getting you started with programming behaviors in C# so that you can create 2D games in Unity. You will begin by installing Unity and learning about its features. You will learn how to perform object-oriented programming and discover how to manage the game play loop, generate game levels, and develop a simple UI for the game. By the time this module comes to a close, you will have mastered the art of applying C# in Unity.It is now time we put into use what we learned in the previous module into reality as we move onto the second module. Here, we will be building 7-8 action-packed games of different difficulty levels. Each project will focus on key Unity features as well as game strategy development. This module will mark your transformation from an application developer to a full-fledged Unity game developer.Who wouldn't love a game that is fully perfect, functional, and without any glitches? The third module deals with just that by teaching how to enhance your game by learning game optimization skills. Here, you'll gain an understanding of possible solutions to any problem and how to implement them. You will then learn everything you need to know about where performance bottlenecks can be found, why they happen, and how to work around them.With this massive wealth of knowledge, at the end of this learning path, you will be able to leverage an array of game development techniques to create your own basic games while resolving any issues that you encounter.Style and approachThis learning path should be treated as the complete package necessary for building games. It is a step-by-step guide to develop a game from scratch by applying the fundamentals of C# and Unity scripting, with a reference guide in the end to solve all your gaming problems.

Learning C# by Developing Games with Unity 5.x - Greg Lukosek
2016-03-31

Develop your first interactive 2D platformer game by learning the fundamentals of C# About This Book Get to grips with the fundamentals of scripting in C# with Unity Create an awesome, 2D platformer game from scratch using the principles of object-oriented programming and coding in C# This is a step-by-step guide to learn the fundamentals of C# scripting to develop GameObjects and master the basics of the new UI system in Unity Who This Book Is For The book is targeted at beginner level Unity developers with no programming experience. If you are a Unity developer and you wish to learn how to write C# scripts and code by creating games, then this book is for you. What You Will Learn Understand the fundamentals of variables, methods, and code syntax in C# Get to know about techniques to turn your game idea into working project Use loops and collections efficiently in Unity to reduce the amount of code Develop a game using the object-oriented programming principles Generate infinite levels for your game Create and code a good-looking functional UI system for your game Publish and share your game with users In Detail Unity is a cross-platform game engine that is used to develop 2D and 3D video games. Unity 5 is the latest version, released in March 2015, and adds a real-time global illumination to the games, and its powerful new features help to improve a game's efficiency. This book will get you started with programming behaviors in C# so you can create 2D games in Unity. You will begin by installing Unity and learning about its features, followed by creating a C# script. We will then deal with topics such as unity scripting for you to understand how codes work so you can create and use C# variables and methods. Moving forward, you will find out how to create, store, and retrieve data from collection of objects. You will also develop an understanding of loops and their use, and you'll perform object-oriented programming. This will help you to turn your idea into a ready-to-code project and set up a Unity project for production. Finally, you will discover how to create the GameManager class to manage the game play loop, generate game levels, and develop a simple UI for the game. By the end of this book, you will have mastered the art of applying C# in Unity. Style and approach This is a step-by-step guide to developing a game from scratch by applying the fundamentals of C# and Unity scripting.

Flutter Complete Reference - Alberto Miola 2020-09-30

Flutter is Google's UI toolkit for creating beautiful and native applications for mobile, desktop and web from a single Dart codebase. In this book we cover in detail the Dart programming language (version 2.10, with null safety support) and the Flutter framework (version 1.20). While reading the chapters, you'll find a lot of good practices, tips and performance advices to build high quality products. The book is divided in 3 parts. PART 1: It's about the Dart programming language (classes, exceptions, inheritance, null safety, streams, SOLID principles...). PART 2. It's about the Flutter framework (localization, routing, state management with Bloc and Provider, testing, performances with DevTools, animations...). PART 3. It's a long collection of examples (using Firestore, monetizing apps, using gestures, networking, publishing packages at pub.dev, race recognition with ML kits, playing audio and video...). The official website of the book contains the complete source code of the examples and a "Quiz Game" to test your Dart and Flutter skills!

Unity Game Development Cookbook - Paris Buttfield-Addison
2019-03-13

Find out how to use the Unity Game Engine to its fullest for both 3D and 2D game development—from the basics to the hottest new tricks in virtual reality. With this unique cookbook, you'll get started in two ways: First, you'll learn about the Unity game engine by following very brief exercises that teach specific features of the software Second, this tutorial-oriented guide provides a collection of snippets that solve common gameplay problems, like determining if a player has completed a lap in a race Using our cookbook format, we pinpoint the problem, set out the solution, and discuss how to solve your problem in the best and most straightforward way possible so you can move onto the next step in the project. Unity Game Development Cookbook is ideal for beginning to intermediate Unity developers. Beginners will get a broad immersion into the Unity development environment, while intermediate developers will learn how to apply the foundational Unity skills they have to solve real game development problems.

Learning C# Programming with Unity 3D, second edition - Alex Okita 2019-09-09

Learning C# Programming with Unity 3D, Second Edition is for the novice game programmer without any prior programming experience. Readers will learn how C# is used to make a game in Unity 3D. Many example projects provide working code to learn from and experiment with. As C# evolves, Unity 3D evolves along with it. Many new features and aspects of C# are included and explained. Common programming tasks are taught by way of making working game mechanics. The reader will understand how to read and apply C# in Unity 3D and apply that knowledge to other development environments that use C#. New to this edition: includes latest C# language features and useful tools included with the .NET library like LINQ, Local Functions Tuples, and more! Key Features Provides a starting point for the first-time programmer C# Code examples are simple short and clear Learn the very basics on up to interesting tricks which C# offers

Unity Game Development in 24 Hours, Sams Teach Yourself - Ben Tristem 2015-11-16

In just 24 lessons of one hour or less, Sams Teach Yourself Unity Game Development in 24 Hours will help you master the Unity 5 game engine at the heart of Hearthstone: Heroes of Warcraft, Kerbal Space Program, and many other sizzling-hot games! This book's straightforward, step-by-step approach teaches you everything from the absolute basics through sophisticated game physics, animation, and mobile device deployment techniques. Every lesson builds on what you've already learned, giving you a rock-solid foundation for real-world success. Step-by-step instructions carefully walk you through the most common Unity 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.

Learning 2D Game Development with Unity - Matthew Johnson
2014-12-12

The Unity Engine Tutorial for Any Game Creator ÷ Unity is now the world's #1 game engine, thanks to its affordability, continuous improvements, and amazing global community. With Unity, you can design, code, and author your game once, and then deploy it to multiple platforms, reaching huge audiences and earning maximum returns. Learning 2D Game Development with Unity® will help you master Unity and build powerful skills for success in today's game industry. It also includes a bonus rundown of the new GUI tools introduced in Unity's version 4.6 beta. ÷ With this indispensable guide, you'll gain a solid,

practical understanding of the Unity engine as you build a complete, 2D platform-style game, hands-on. The step-by-step project will get you started fast, whether you're moving to Unity from other engines or are new to game development. *¿* This tutorial covers the entire development process, from initial concept, plans, and designs to the final steps of building and deploying your game. It illuminates Unity's newly integrated 2D toolset, covering sprites, 2D physics, game scripts, audio, and animations. Throughout, it focuses on the simplest and lowest-cost approaches to game development, relying on free software and assets. Everything you'll need is provided. *¿* Register your book at informit.com/title/9780321957726 to access assets, code listings, and video tutorials on the companion website. *¿* Learn How To Set up your Unity development environment and navigate its tools Create and import assets and packages you can add to your game Set up game sprites and create atlas sheets using the new Unity 2D tools Animate sprites using keyframes, animation controllers, and scripting Build a 2D game world from beginning to end Establish player control Construct movements that "feel right" Set up player physics and colliders Create and apply classic gameplay systems Implement hazards and tune difficulty Apply audio and particle effects to the game Create intuitive game menus and interface elements Debug code and provide smooth error handling Organize game resources and optimize game performance Publish your game to the web for others to see and play *¿*

The C# Programming Yellow Book - Rob Miles 2018-10-19

Learn C# from first principles the Rob Miles way. With jokes, puns, and a rigorous problem solving based approach. You can download all the code samples used in the book from here: <http://www.robmiles.com/s/Yellow-Book-Code-Samples-64.z>

Unity in Action - Joseph Hocking 2018-03-27

Summary Manning's bestselling and highly recommended Unity book has been fully revised! *Unity in Action, Second Edition* teaches you to write and deploy games with the Unity game development platform. You'll master the Unity toolset from the ground up, adding the skills you need to go from application coder to game developer. Foreword by Jesse Schell, author of *The Art of Game Design* Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Build your next game without sweating the low-level details. The Unity game development platform handles the heavy lifting, so you can focus on game play, graphics, and user experience. With support for C# programming, a huge ecosystem of production-quality prebuilt assets, and a strong dev community, Unity can get your next great game idea off the drawing board and onto the screen! About the Book *Unity in Action, Second Edition* teaches you to write and deploy games with Unity. As you explore the many interesting examples, you'll get hands-on practice with Unity's intuitive workflow tools and state-of-the-art rendering engine. This practical guide exposes every aspect of the game dev process, from the initial groundwork to creating custom AI scripts and building easy-to-read UIs. And because you asked for it, this totally revised Second Edition includes a new chapter on building 2D platformers with Unity's expanded 2D toolkit. What's Inside Revised for new best practices, updates, and more! 2D and 3D games Characters that run, jump, and bump into things Connect your games to the internet About the Reader You need to know C# or a similar language. No game development knowledge is assumed. About the Author Joe Hocking is a software engineer and Unity expert specializing in interactive media development. Table of Contents PART 1 - First steps Getting to know Unity Building a demo that puts you in 3D space Adding enemies and projectiles to the 3D game Developing graphics for your game PART 2 - Getting comfortable Building a Memory game using Unity's 2D functionality Creating a basic 2D Platformer Putting a GUI onto a game Creating a third-person 3D game: player movement and animation Adding interactive devices and items within the game PART 3 - Strong finish Connecting your game to the internet Playing audio: sound effects and music Putting the parts together into a complete game Deploying your game to players' devices

C# Game Programming Cookbook for Unity 3D - Jeff W. Murray 2021-03-25

This second edition of *C# Game Programming Cookbook for Unity 3D* expounds upon the first with more details and techniques. With a fresh array of chapters, updated C# code and examples, Jeff W. Murray's book will help the reader understand structured game development in Unity unlike ever before. New to this edition is a step-by-step tutorial for building a 2D infinite runner game from the framework and scripts included in the book. The book contains a flexible and reusable framework in C# suitable for all game types. From game state handling

to audio mixers to asynchronous scene loading, the focus of this book is building a reusable structure to take care of many of the most used systems. Improve your game's sound in a dedicated audio chapter covering topics such as audio mixers, fading, and audio ducking effects, or dissect a fully featured racing game with car physics, lap counting, artificial intelligence steering behaviors, and game management. Use this book to guide your way through all the required code and framework to build a multi-level arena blaster game. Features Focuses on programming, structure, and an industry-level, C#-based framework Extensive breakdowns of all the important classes Example projects illustrate and break down common and important Unity C# programming concepts, such as coroutines, singletons, static variables, inheritance, and scriptable objects. Three fully playable example games with source code: a 2D infinite runner, an arena blaster, and an isometric racing game The script library includes a base Game Manager, timed and proximity spawning, save profile manager, weapons control, artificial intelligence controllers (path following, target chasing and line-of-sight patrolling behaviors), user interface Canvas management and fading, car physics controllers, and more. Code and screenshots have been updated with the latest versions of Unity. These updates will help illustrate how to create 2D games and 3D games based on the most up-to-date methods and techniques. Experienced C# programmers will discover ways to structure Unity projects for reusability and scalability. The concepts offered within the book are instrumental to mastering C# and Unity. In his game career spanning more than 20 years, Jeff W. Murray has worked with some of the world's largest brands as a Game Designer, Programmer, and Director. A Unity user for over 14 years, he now works as a consultant and freelancer between developing his own VR games and experiments with Unity.

Hands-on Rust - Herbert Wolverson 2021-06-30

Rust is an exciting new programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters - and what better way to learn than by making games. Each chapter in this book presents hands-on, practical projects ranging from "Hello, World" to building a full dungeon crawler game. With this book, you'll learn game development skills applicable to other engines, including Unity and Unreal. Rust is an exciting programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters. With Rust, you have a shiny new playground where your game ideas can flourish. Each chapter in this book presents hands-on, practical projects that take you on a journey from "Hello, World" to building a full dungeon crawler game. Start by setting up Rust and getting comfortable with your development environment. Learn the language basics with practical examples as you make your own version of Flappy Bird. Discover what it takes to randomly generate dungeons and populate them with monsters as you build a complete dungeon crawl game. Run game systems concurrently for high-performance and fast game-play, while retaining the ability to debug your program. Unleash your creativity with magical items, tougher monsters, and intricate dungeon design. Add layered graphics and polish your game with style. What You Need: A computer running Windows 10, Linux, or Mac OS X. A text editor, such as Visual Studio Code. A video card and drivers capable of running OpenGL 3.2.

Unity 3.x Game Development Essentials - Will Goldstone 2011-12-20

This book follows an informal, demystifying approach to the world of game development with the Unity game engine. With no prior knowledge of game development or 3D required, you will learn from scratch, taking each concept at a time working up to a full 3D mini-game. You'll learn scripting with C# or JavaScript and master the Unity development environment with easy-to-follow stepwise tasks. If you're a designer or animator who wishes to take their first steps into game development or prototyping, or if you've simply spent many hours sitting in front of video games, with ideas bubbling away in the back of your mind, Unity and this book should be your starting point. No prior knowledge of game production is required, inviting you to simply bring with you a passion for making great games.

Beginning C# Object-Oriented Programming - Dan Clark 2011-08-12

Beginning C# Object-Oriented Programming brings you into the modern world of development as you master the fundamentals of programming with C# and learn to develop efficient, reusable, elegant code through the object-oriented programming (OOP) methodology. Take your skills out of the 20th century and into this one with Dan Clark's accessible, quick-paced guide to C# and object-oriented programming, completely updated for .NET 4.0 and C# 4.0. As you develop techniques and best practices for coding in C#, one of the world's most popular

contemporary languages, you'll experience modeling a "real world" application through a case study, allowing you to see how both C# and OOP (a methodology you can use with any number of languages) come together to make your code reusable, modern, and efficient. With more than 30 fully hands-on activities, you'll discover how to transform a simple model of an application into a fully-functional C# project, including designing the user interface, implementing the business logic, and integrating with a relational database for data storage. Along the way, you will explore the .NET Framework, the creation of a Windows-based user interface, a web-based user interface, and service-oriented programming, all using Microsoft's industry-leading Visual Studio 2010, C#, Silverlight, the Entity Framework, and more.

Learning C# by Developing Games with Unity 2020 - Harrison Ferrone 2020-08-21

Get to grips with coding in C# and build simple 3D games with Unity from the ground up with this updated fifth edition of the bestselling guide **Key Features** Understand C# programming basics, terminology, and coding best practices Put your knowledge of C# concepts into practice by building a fun and playable game Come away with a clear direction for taking your C# programming and Unity game development skills to the next level **Book Description** Over the years, the Learning C# by Developing Games with Unity series has established itself as a popular choice for getting up to speed with C#, a powerful and versatile programming language that can be applied in a wide array of application areas. This book presents a clear path for learning C# programming from the ground up without complex jargon or unclear programming logic, all while building a simple game with Unity. This fifth edition has been updated to introduce modern C# features with the latest version of the Unity game engine, and a new chapter has been added on intermediate collection types. Starting with the basics of software programming and the C# language, you'll learn the core concepts of programming in C#, including variables, classes, and object-oriented programming. Once you've got to grips with C# programming, you'll enter the world of Unity game development and discover how you can create C# scripts for simple game mechanics. Throughout the book, you'll gain hands-on experience with programming best practices to help you take your Unity and C# skills to the next level. By the end of this book, you'll be able to leverage the C# language to build your own real-world Unity game development projects. What you will learn **Discover easy-to-follow steps and examples for learning C# programming fundamentals** Get to grips with creating and implementing scripts in Unity **Create basic game mechanics** such as player controllers and shooting projectiles using C# **Understand the concepts of interfaces and abstract classes** Leverage the power of the latest C# features to solve complex programming problems **Become familiar with stacks, queues, exceptions, error handling, and other core C# concepts** Explore the basics of artificial intelligence (AI) for games and implement them to control enemy behavior **Who this book is for** If you're a developer, programmer, hobbyist, or anyone who wants to get started with C# programming in a fun and engaging manner, this book is for you. Prior experience in programming or Unity is not required.

Unity Game Development Essentials - Will Goldstone 2009-10-01

Build fully functional, professional 3D games with realistic environments, sound, dynamic effects, and more!

Unity From Zero to Proficiency (Foundations) - Patrick Felicia 2017-11-01

Newly Edited and Updated Version (Fourth Edition) for Unity 2019. Get started with Unity and game programming fast without the headaches Unity is a great software to create video games; however, it includes so many options and features that getting started can feel overwhelming. Without my book, most people spend too long trying to learn how to use Unity the hard way. This book is the only one that will get you to learn Unity fast without wasting so much time. This book is the first book in the series "Unity from Zero to Proficiency" where you will learn to code fast and be able to create your own video games with Unity in no time. What you will learn - After completing this book, you will be able to: - Know and master the features that you need to create 2D and 3D environments for your games. - Quickly create (and navigate through) realistic 3D indoors and outdoors environments. - Create a 3D Maze with lights, walls, and textures. - Use ProBuilder to create a house. - Create an island with trees, sandy beaches, mountains, and water. - Include and control a car and a plane. - Create a 2D platform game (with no scripting needed). - Export your games to the web. **Who this book is for:** - Hobbyists who need a book that gets them started with Unity and game development easily. - Parents looking for a book that introduces

their children to game programming painlessly. - Teachers looking for a complete and clear resource on programming through the creation of games. - Aspiring indie game developers. How this book is different This is the only book that you need to get started with Unity fast and to enjoy the journey without the frustration. This book includes six chapters that painlessly guide you through the necessary skills to master Unity's interface, use its core features, and create and navigate through realistic 2D and 3D environments. It assumes no prior knowledge on your part and ensures that you have all the information and explanations that you need every step of the way. What this book offers This book includes all the features that you need to get started with Unity and game development: **Learn without the headaches:** This book assumes that you can't be expected to learn everything at once; this is why you will build all your skills incrementally. In addition, if you are more of a visual learner, you will gain access to a FREE video training that covers all the topics and features introduced in the book so that you can see how it is done. **Make your dream of creating your own games come true:** This book ensures that you stay motivated by giving you the right amount of information and challenge in each chapter; we all know that it's hard to keep motivated when learning a new skill, so this book always contextualizes the knowledge with an example (so that you feel it's relevant), and also makes sure that you get to challenge yourself, if you need to, with optional challenges present at the end of each chapter. **Progress and feel confident in your skills:** You will have the opportunity to learn and to use Unity at your own pace and to become comfortable with its interface. This is because every single new concept introduced will be explained in great detail so that you never feel lost. All the concepts are introduced progressively so that you don't feel overwhelmed. **Create your own games and feel awesome:** With this book, you will build your own 2D and 3D environments and you will spend more time creating than reading, to ensure that you can apply the concepts covered in each section. All chapters include step-by-step instructions with examples that you can use straight-away. If you want to get started with Unity today, then buy this book now.

Unity Android Game Development by Example Beginner's Guide - Thomas Finnegan 2013-12-20

Unity Android Game Development by Example Beginner's Guide consists of different game application examples. No prior experience with programming, Android, or Unity is required. You will learn everything from scratch and will have an organized flow of information specifically designed for complete beginners to Unity. Great for developers new to Unity, Android, or both, this book will walk you through everything you need to know about game development for the Android mobile platform. No experience with programming, Android, or Unity is required. Most of the assets used in each chapter project are provided with the book, but it is assumed that you have some access to basic image and model creation software. You will also need access to an Android powered device.

Learning C# by Programming Games - Wouter van Toll 2019-11-21

Developing computer games is a perfect way to learn how to program in modern programming languages. This book teaches how to program in C# through the creation of computer games - and without requiring any previous programming experience. Contrary to most programming books, van Toll, Egges, and Fokker do not organize the presentation according to programming language constructs, but instead use the structure and elements of computer games as a framework. For instance, there are chapters on dealing with player input, game objects, game worlds, game states, levels, animation, physics, and intelligence. The reader will be guided through the development of four games showing the various aspects of game development. Starting with a simple shooting game, the authors move on to puzzle games consisting of multiple levels, and conclude the book by developing a full-fledged platform game with animation, game physics, and intelligent enemies. They show a number of commonly used techniques in games, such as drawing layers of sprites, rotating, scaling and animating sprites, dealing with physics, handling interaction between game objects, and creating pleasing visual effects. At the same time, they provide a thorough introduction to C# and object-oriented programming, introducing step by step important programming concepts such as loops, methods, classes, collections, and exception handling. This second edition includes a few notable updates. First of all, the book and all example programs are now based on the library MonoGame 3.6, instead of the obsolete XNA Game Studio. Second, instead of explaining how the example programs work, the text now invites readers to write these programs themselves, with clearly marked reference points throughout the text. Third, the book now makes a clearer distinction between general (C#) programming concepts

and concepts that are specific to game development. Fourth, the most important programming concepts are now summarized in convenient “Quick Reference” boxes, which replace the syntax diagrams of the first edition. Finally, the updated exercises are now grouped per chapter and can be found at the end of each chapter, allowing readers to test their knowledge more directly. The book is also designed to be used as a basis for a game-oriented programming course. Supplementary materials for organizing such a course are available on an accompanying web site, which also includes all example programs, game sprites, sounds, and the solutions to all exercises.

Game Development Patterns with Unity 2021 - David Baron
2021-07-30

Solve your programming woes in Unity with practical design propositions
Key Features
Gain a comprehensive overview of Unity engine architecture and coding model
Build a complete racing game using software design patterns and understand how to implement them in Unity
Download the source code of the complete prototype demonstrating each of the software patterns used
Book Description
This book is written for every game developer ready to tackle the bigger picture and start working with advanced programming techniques and design patterns in Unity. *Game Development Patterns with Unity 2021* is an introduction to the core principles of reusable software patterns and how to employ them to build components efficiently. In this second edition, you'll tackle design patterns with the help of a practical example; a playable racing game prototype where you'll get to apply all your newfound knowledge. Notable updates also include a game design document (GDD), a Unity programming primer, and the downloadable source code of a complete prototype. Your journey will start by learning about overall design of the core game mechanics and systems. You'll discover tried-and-tested software patterns to code essential components of a game in a structured manner, and start using classic design patterns to utilize Unity's unique API features. As you progress, you'll also identify the negative impacts of bad architectural decisions and understand how to overcome them with simple but effective practices. By the end of this Unity book, the way you develop Unity games will change - you'll adapt a more structured, scalable, and optimized process that will help you take the next step in your career. What you will learn
Structure professional Unity code using industry-standard development patterns
Identify the right patterns for implementing specific game mechanics or features
Develop configurable core game mechanics and ingredients that can be modified without writing a single line of code
Review practical object-oriented programming (OOP) techniques and learn how they're used in the context of a Unity project
Build unique game development systems such as a level editor
Explore ways to adapt traditional design patterns for use with the Unity API
Who this book is for
This book is for Unity game developers who want to learn industry standards for building Unity games. Knowledge of the Unity game engine and programming in the C# language is a must, so if you're a beginner, try our *Learning C# by Developing Games with Unity 2021* handbook instead.

[Learning C# by Developing Games with Unity 5. X Second Edition](#) - Greg Lukosek 2016

Develop your first interactive 2D platformer game by learning the fundamentals of C#
About This Book- Get to grips with the fundamentals of scripting in C# with Unity- Create an awesome, 2D platformer game from scratch using the principles of object-oriented programming and coding in C#- This is a step-by-step guide to learn the fundamentals of C# scripting to develop GameObjects and master the basics of the new UI system in Unity
Who This Book Is For
The book is targeted at beginner level Unity developers with no programming experience. If you are a Unity developer and you wish to learn how to write C# scripts and code by creating games, then this book is for you.
What You Will Learn-
Understand the fundamentals of variables, methods, and code syntax in C#-
Get to know about techniques to turn your game idea into working project-
Use loops and collections efficiently in Unity to reduce the amount of code-
Develop a game using the object-oriented programming principles-
Generate infinite levels for your game-
Create and code a good-looking functional UI system for your game-
Publish and share your game with users
In Detail
Unity is a cross-platform game engine that is used to develop 2D and 3D video games. Unity 5 is the latest version, released in March 2015, and adds a real-time global illumination to the games, and its powerful new features help to improve a game's efficiency. This book will get you started with programming behaviors in C# so you can create 2D games in Unity. You will begin by installing Unity and learning about its features, followed by creating a C# script. We will then deal with topics such as unity scripting for you to

understand how codes work so you can create and use C# variables and methods. Moving forward, you will find out how to create, store, and retrieve data from collection of objects. You will also develop an understanding of loops and their use, and you'll perform object-oriented programming. This will help you to turn your idea into a ready-to-code project and set up a Unity project for production. Finally, you will discover how to create the GameManager class to manage the game play loop, generate game levels, and develop a simple UI for the game. By the end of this book, you will have mastered the art of applying C# in Unity. Style and approach
This is a step-by-step guide to developing a game from scratch by applying the fundamentals of C# and Unity scripting.

Learning C# Programming with Unity 3D - Alex Okita 2014-08-01

Designed to give you enough familiarity in a programming language to be immediately productive, *Learning C# Programming with Unity 3D* provides the basics of programming and brings you quickly up to speed. Organized into easy-to-follow lessons, the book covers how C# is used to make a game in Unity3D. After reading this book, you will be armed with the knowledge required to feel confident in learning more. You'll have what it takes to at least look at code without your head spinning. Writing a massive multiplayer online role-playing game is quite hard, of course, but learning how to write a simple behavior isn't. Like drawing, you start off with the basics such as spheres and cubes. After plenty of practice, you'll be able to create a real work of art. This applies to writing code—you start off with basic calculations, then move on to the logic that drives a complex game. By the end of this book, you will have the skills to be a capable programmer, or at least know what is involved with how to read and write code. Although you could go online and find videos and tutorials, there is a distinct advantage when it comes to learning things in order and in one place. Most online tutorials for C# are scattered, disordered, and incohesive. It's difficult to find a good starting point, and even more difficult to find a continuous list of tutorials to bring you to any clear understanding of the C# programming language. This book not only gives you a strong foundation, but puts you on the path to game development.

Building a Game with Unity and Blender - Lee Zhi Eng 2015-11-27

Learn how to build a complete 3D game using the industry-leading Unity game development engine and Blender, the graphics software that gives life to your ideas
About This Book
Learn the fundamentals of two powerful tools and put the concepts into practice
Find out how to design and build all the core elements required for a great game - from characters to environments, to props—
Learn how to integrate Artificial Intelligence (AI) into your game for sophisticated and engaging gameplay
Who This Book Is For
This book has been created for anyone who wants to learn how to develop their own game using Blender and Unity, both of which are freely available, yet very popular and powerful, tools. Not only will you be able to master the tools, but you will also learn the entire process of creating a game from the ground up.
What You Will Learn
Design and create a game concept that will determine how your game will look and how it will be played
Construct 3D models of your game characters and create animations for them before importing them into the game
Build the game environment from scratch by constructing the terrain and props, and eventually put it all together to form a scene
Import and integrate game assets created in Blender into Unity—for example, setting up textures, materials, animation states, and prefabs
Develop game structures including a game flow, user interface diagram, game logic, and a state machine
Make the game characters move around and perform certain actions either through player inputs or fully controlled by artificial intelligence
Create particles and visual effects to enhance the overall visual aesthetic
Deploy the game for various types of platforms
In Detail
In the wake of the indie game development scene, game development tools are no longer luxury items costing up to millions of dollars but are now affordable by smaller teams or even individual developers. Among these cutting-edge applications, Blender and Unity stand out from the crowd as a powerful combination that allows small-to-no budget indie developers or hobbyists alike to develop games that they have always dreamt of creating. Starting from the beginning, this book will cover designing the game concept, constructing the gameplay, creating the characters and environment, implementing game logic and basic artificial intelligence, and finally deploying the game for others to play. By sequentially working through the steps in each chapter, you will quickly master the skills required to develop your dream game from scratch. Style and approach
A step-by-step approach with tons of screenshots and sample code for readers to follow and learn from. Each topic is explained sequentially and placed in context so that readers can

get a better understanding of every step in the process of creating a fully functional game.

Learning C# by Developing Games with Unity 3D - Terry Norton 2013-08
This book uses the learning-by-example approach. It takes simple examples from games to introduce all the main concepts of programming in an easy-to-digest and immediately recognizable way. This book is for the total beginner to any type of programming, focusing on the writing of C# code and scripts only. There are many parts that make up the Unity game engine. It is assumed that the reader already knows their way around Unity's user interface. The code editor used in this book is the MonoDevelop editor supplied by Unity.

C#: 2 Books in 1 - The Ultimate Beginner's & Intermediate Guide to Learn C# Programming Step By Step - Ryan Turner 2020-03-04

Introduction to Game Design, Prototyping, and Development -

Jeremy Gibson 2015

This hands-on guide covers both game development and design, and both Unity and C#. This guide illuminates the basic tenets of game design and presents a detailed, project-based introduction to game prototyping and development, using both paper and the Unity game engine.

Learning C# by Developing Games with Unity 2019 - Harrison Ferrone 2019-03-30

Unity, the world's leading real-time engine, is used to create half of the world's games. This book will teach programming newcomers the C# language in a fun and accessible way through game development. No prior programming or game development experience is required, only a curious mind.

Learn Unity for 2D Game Development - Alan Thorn 2013-10-25

2D games are everywhere, from mobile devices and websites to game consoles and PCs. Timeless and popular, 2D games represent a substantial segment of the games market. In *Learn Unity for 2D Game Development*, targeted at both game development newcomers and established developers, experienced game developer Alan Thorn shows you how to use the powerful Unity engine to create fun and imaginative 2D games. Written in clear and accessible language, *Learn Unity for 2D Game Development* will show you how to set up a step-by-step 2D workflow in Unity, how to build and import textures, how to configure and work with cameras, how to establish pixel-perfect ratios, and all of this so you can put that infrastructure to work in a real, playable game. Then the final chapters show you how to put what you've already made to work in creating a card-matching game, plus you'll learn how to optimize your game for mobile devices.

Developing 2D Games with Unity - Jared Halpern 2018-11-28

Follow a walkthrough of the Unity Engine and learn important 2D-centric lessons in scripting, working with image assets, animations, cameras, collision detection, and state management. In addition to the fundamentals, you'll learn best practices, helpful game-architectural patterns, and how to customize Unity to suit your needs, all in the context of building a working 2D game. While many books focus on 3D game creation with Unity, the easiest market for an independent developer to thrive in is 2D games. 2D games are generally cheaper to produce, more feasible for small teams, and more likely to be completed.

If you live and breathe games and want to create them then 2D games are a great place to start. By focusing exclusively on 2D games and Unity's ever-expanding 2D workflow, this book gives aspiring independent game developers the tools they need to thrive. Various real-world examples of independent games are used to teach fundamental concepts of developing 2D games in Unity, using the very latest tools in Unity's updated 2D workflow. New all-digital channels for distribution, such as Nintendo eShop, Xbox Live Marketplace, the Playstation Store, the App Store, Google Play, itch.io, Steam, and GOG.com have made it easier than ever to discover, buy, and sell games. The golden age of independent gaming is upon us, and there has never been a better time to get creative, roll up your sleeves, and build that game you've always dreamed about. *Developing 2D Games with Unity* can show you the way. What You'll Learn Delve deeply into useful 2D topics, such as sprites, tile slicing, and the brand new Tilemap feature. Build a working 2D RPG-style game as you learn. Construct a flexible and extensible game architecture using Unity-specific tools like Scriptable Objects, Cinemachine, and Prefabs. Take advantage of the streamlined 2D workflow provided by the Unity environment. Deploy games to desktop Who This Book Is For Hobbyists with some knowledge of programming, as well as seasoned programmers interested in learning to make games independent of a major studio.

Game Programming Patterns - Robert Nystrom 2014-11-03

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 CPU's cache to improve your performance. You'll dive deep into how scripting engines encode behavior, how quadrees and other spatial partitions optimize your engine, and how other classic design patterns can be used in games.

Beginning C# Programming with Unity - A. T. Chamillard 2017-01-01

Learning C# Programming with Unity 3D Second Edition - Alex Okita 2019

"For the novice game programmer with no experience with any programming languages. Covers how C# is used to make a game in Unity3D. Interactive examples give C# code meaning. As more complex aspects of C# are explained the interactivity of example games gains depth. Common programming tasks are taught by way of making a game. Thereader will understand how to read and apply C# in Unity3D and apply that knowledge to other development environments that use C#. New to this edition: includes latest C# functionality and feratures; new tips and tricks oo tuples, pattern matching, out variables, local functions, binary laterals, digit separators, null propagator reduces, etc. Key Features Provides a starting point for the first time programmer Examples enable the reader to eventually write a game using Unity 3D Learn to read and understand documentation and the Unity 3D API"--