Game Programming: Developing With Unity In C

Game Programming with Unity and C#

\u200bDesigned 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.

Learning C# by Developing Games with Unity 2021

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 FeaturesLearn C# programming basics, terminology, and coding best practicesBecome confident with Unity fundamentals and features in line with Unity 2021Apply your C# knowledge in practice and build a working first-person shooter game prototype in UnityBook 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 learnFollow simple steps and examples to create and implement C# scripts in UnityDevelop a 3D mindset to build games that come to lifeCreate 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 extensionsBecome familiar with stacks, queues, exceptions, error handling, and other core C# conceptsLearn how to handle text, XML, and JSON data to save and load your game dataExplore the basics of AI for games and implement them to control enemy behaviorWho 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.

Unity in Action

A lot goes into publishing a successful game: amazing artwork, advanced programming techniques, creative story and gameplay, and highly-collaborative teamwork—not to mention flawless rendering and smooth performance on platforms ranging from game consoles to mobile phones. The Unity game development platform combines a powerful rendering engine with the professional code and art workflow tools needed to bring games to life. Unity in Action focuses on the programming part of game development (as opposed to art or design) and teaches readers to create projects in multiple game genres. Building on existing programming experience, readers will work through examples using the Unity toolset, adding the skills needed to go from application coder to game developer. They will leave the book with a well-rounded understanding of how to create graphically driven 2D and 3D applications. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Pro Unity Game Development with C#

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.

Learning C# by Developing Games with Unity 2019

Understand the fundamentals of C# programming and get started with coding from ground up in an engaging and practical manner Key Features Build 3D games step-by-step while learning essential C# programming concepts and real-world coding skills Create interactive mechanics, animations, and AI behaviors using Unity's tools and scripting features Develop a strong programming foundation by understanding how code structures power gameplay and game logic Book DescriptionLearning to program in today’s technical landscape can be a daunting task, especially when faced with the sheer number of languages you have to choose from. Luckily, Learning C# with Unity 2019 removes the guesswork and starts you off on the path to becoming a confident, and competent, programmer using game development with Unity. You’ll start off small by learning the building blocks of programming, from variables, methods, and conditional statements to classes and object-oriented systems. After you have the basics under your belt you’ll explore the Unity interface, creating C# scripts, and translating your newfound knowledge into simple game mechanics. Throughout this journey, you’ll get hands-on experience with programming best practices and macro-level

topics such as manager classes and flexible application architecture. By the end of the book, you'll be familiar with intermediate C# topics like generics, delegates, and events, setting you up to take on projects of your own.What you will learn Understand programming fundamentals with practice examples in C# Explore the interface and features of Unity 2019 Learn C# programming syntax from scratch Create a game design document and prototype level Explore intermediate programming topics and best practices Implement game mechanics, interactions, and UI elements with C# Who this book is for This book is ideal for aspiring game developers, students, and hobbyists with little or no coding background who want to learn C# fundamentals and start building their own interactive 3D games in Unity. No prior programming or Unity experience is needed, making it perfect for complete beginners or those seeking a structured introduction to both C# and Unity's core tools.

Game Development Patterns with Unity 2021

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 DescriptionThis 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

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.

Developing 2D Games with Unity

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.

Unity Game Development Essentials

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

Unity Game Development Cookbook

Discover how to use the Unity game engine to its full potential for both 3D and 2D game development—from the basics of scripting to useful tricks in gameplay, behavior, and animation. With this problem-solving cookbook, you'll get started in two ways: First, you'll learn about the Unity game engine through brief recipes that teach specific features of the software and scripting systems. Second, you'll apply a collection of snippets to address common gameplay scenarios, such as properly keeping score. 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. This book is ideal for beginning to intermediate Unity developers. You'll find solutions for: 2D and 3D graphics Math, physics, and character control Animation and movement Behavior and AI Sound and music Input and gameplay Scripting and user interface

Learning C# Programming with Unity 3D

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.

Game Programming Patterns

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.

Mind-Melding Unity and Blender for 3D Game Development

Add Blender to your Unity game development projects to unlock new possibilities and decrease your dependency on third-party creators Key Features Discover how you can enhance your games with Blender Learn how to implement Blender in real-world scenarios Create new or modify existing assets in Blender and import them into your Unity game Book DescriptionBlender is an incredibly powerful, free computer graphics program that provides a world-class, open-source graphics toolset for creating amazing assets in 3D. With Mind-Melding Unity and Blender for 3D Game Development, you'll discover how adding Blender to Unity can help you unlock unlimited new possibilities and reduce your reliance on third parties for creating your game assets. This game development book will broaden your knowledge of Unity and help you to get to grips with Blender's core capabilities for enhancing your games. You'll become familiar with creating new assets and modifying existing assets in Blender as the book shows you how to use the Asset Store and Package Manager to download assets in Unity and then export them to Blender for modification. You'll also learn how to modify existing and create new sci-fi-themed assets for a minigame project. As you advance, the book will guide you through creating 3D model props, scenery, and characters and demonstrate UV mapping and texturing. Additionally, you'll get hands-on with rigging, animation, and C# scripting. By the end of this Unity book, you'll have developed a simple yet exciting mini game with audio and visual effects, and a GUI. More importantly, you'll be ready to apply everything you've learned to your Unity game projects.What you will learn Transform your imagination into 3D scenery, props, and characters using Blender Get to grips with UV unwrapping and texture models in Blender Understand how to rig and animate models in Blender Animate and script models in Unity for top-down, FPS, and other types of games Find out how you can roundtrip custom assets from Blender to Unity and back Become familiar with the basics of ProBuilder, Timeline, and Cinemachine in Unity Who this book is for This book is for game developers looking to add more skills to their arsenal by learning Blender from the ground up. Beginner-level Unity scene and scripting skills are necessary to get started.

Hands-On Unity 2021 Game Development

Achieve mesmerizing game experiences using the latest Unity 2021 features by following a practical approach to building professional games Key FeaturesUnleash the capabilities of C# scripting to create UIs, graphics, game AI agents and moreExplore Unity's latest tools, including Universal Render Pipeline, Shader Graph, UI Toolkit, Visual Scripting, and VFX graph, to enhance graphics and animationBuild an AR experience using Unity’s AR FoundationBook Description Learning how to use Unity is the quickest way to creating a full game, but that’s not all you can do with this simple, yet comprehensive suite of video game development tools – Unity is just as useful for creating AR/VR experiences, complex simulations, real-time realistic rendering, films, and practical games for training and education. Hands-On Unity 2021 Game Development outlines a practical journey to creating your first full game from the ground up, building it step-by-step and applying your knowledge as you progress. Complete with hands-on tutorials and projects, this easy-to-follow guide will teach you how to develop the game using several Unity tools. As you advance, you will learn how to use the Unity engine, create simple scripts using C#, integrate graphics, sound, and animations, and manipulate physics to create interesting mechanics for your game. You’ll be able to apply all the knowledge that you gain to a real-world game. Later chapters will show you how to code a simple AI agent to challenge the user and use profiling tools to ensure that the code runs efficiently. Finally, you'll work with Unity's AR tools to create AR experiences for 3D apps and games. By the end of this Unity book, you will have created a complete game and built a solid foundation in using a wide variety of Unity tools. What you will learnExplore both C# and Visual Scripting tools to customize various aspects of a game, such as physics, gameplay, and the UIProgram rich shaders and effects using Unity's new Shader Graph and Universal Render PipelineImplement postprocessing to improve 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 TimelineUse the brand new UI Toolkit package to create user interfacesImplement game AI to control character behaviorWho this book is for This book is best suited for game developers looking to upgrade their knowledge and those who want to migrate their existing skills to the Unity game engine. Those with prior Unity knowledge will also benefit from the chapters exploring the latest features. While you’ll still able to follow along if you don’t have any programming experience, knowing the fundamentals of C# programming will help you get the most out of this book.

Unity in Action, Third Edition

Unity in Action, Third Edition teaches you to create games with the Unity game platform. It's many 2D, 3D, and AR/VR game examples give you hands-on experience with Unity's workflow tools and state-of-the-art rendering engine. This fully updated third edition presents new coverage of Unity's XR toolkit and shows you how you can start building with virtual and augmented reality.

Game Engine Architecture

Hailed as a \"must-have textbook\" (CHOICE, January 2010), 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.

Building a Game with Unity and Blender

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 designand buildall 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.

Mobile Game Development with Unity

Do you want to build mobile games, but lack game development experience? No problem. This practical guide shows you how to create beautiful, interactive content for iOS and Android devices with the Unity game engine. Authors Jon Manning and Paris Buttfield-Addison (iOS Swift Game Development Cookbook) provide a top-to-bottom overview of Unity's features with specific, project-oriented guidance on how to use them in real game situations. Over the course of this book, you'll learn hands-on how to build 2D and 3D games from scratch that will hook and delight players. If you have basic programming skills, you're ready to get started. Explore the basics of Unity, and learn how to structure games, graphics, scripting, sounds, physics, and particle systems Use 2D graphics and physics features to build a side-scrolling action game Create a 3D space combat simulator with projectile shooting and respawning objects, and learn how to manage the appearance of 3D models Dive into Unity's advanced features, such as precomputed lighting, shading, customizing the editor, and deployment

Unity 3.x Game Development Essentials

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 3D Game Development with Unity 4

Beginning 3D Game Development with Unity 4 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 interactive games, ideal in scope for today's casual and mobile markets, 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, dialogue trees for character interaction, 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 Development and Production

A handbook for game development with coverage of both team management topics, such as task tracking and creating the technical design document, and outsourcing strategies for contents, such as motion capture and voice-over talent. It covers various aspects of game development.

Learning 2D Game Development with Unity

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 ¿

Unity Virtual Reality Projects

Explore the world of Virtual Reality by building immersive and fun VR projects using Unity 3D About This Book Learn the basic principles of virtual reality applications and get to know how they differ from games and desktop apps Build various types of VR experiences, including diorama, first-person characters, riding on rails, 360 degree projections, and social VR A project-based guide that teaches you to use Unity to develop VR applications, which can be experienced with devices such as the Oculus Rift or Google Cardboard Who This Book Is For If you're a non-programmer unfamiliar with 3D computer graphics, or experienced in both but new to virtual reality, and are interested in building your own VR games or applications then this book is for you. Any experience in Unity is an advantage. What You Will Learn Create 3D scenes with Unity and Blender while learning about world space and scale Build and run VR applications for consumer headsets including Oculus Rift and Google Cardboard Build interactive environments with physics, gravity, animations, and lighting using the Unity engine Experiment with various user interface (UI) techniques that you can use in your VR applications Implement the first-person and third-person experiences that use only head motion gestures for input Create animated walkthroughs, use 360-degree media, and build multi-user social VR experiences Learn about the technology and psychology of VR including rendering, performance and VR motion sickness Gain introductory and advanced experience in Unity programming with the C# language In Detail What is consumer “virtual reality”? Wearing a head-mounted display you view stereoscopic 3D scenes. You can look around by moving your head, and walk around using hand controls or motion sensors. You are engaged in a fully immersive experience. On the other hand, Unity is a powerful game development engine that provides a rich set of features such as visual lighting, materials, physics, audio, special effects, and animation for creating 2D and 3D games. Unity 5 has become the leading platform for building virtual reality games, applications and experiences for this new generation of consumer VR devices. Using a practical and project-based approach, this book will educate you about the specifics of virtual reality development in Unity. You will learn how to use Unity to develop VR applications which can be experienced with devices such as the Oculus Rift or Google Cardboard. We will then learn how to engage with virtual worlds from a third person and first person character point of view. Furthermore, you will explore the technical considerations especially important and possibly unique to VR. The projects in the book will demonstrate how to build a variety of VR experiences. You will be diving into the Unity 3D game engine via the interactive Unity Editor as well as C-Sharp programming. By the end of the book, you will be equipped to develop rich, interactive virtual reality experiences using Unity. So, let's get to it! Style and approach This book takes a practical, project-based approach to teach specifics of virtual reality development in Unity. Using a reader-friendly approach, this book will not only provide detailed step-by-step instructions but also discuss the broader context and applications covered within.

Basic Math for Game Development with Unity 3D

Use Unity-based examples to understand fundamental mathematical concepts and see how they are applied when building modern video game functionality. You will gain the theoretical foundation you need, and you will know how to examine and modify an implementation. This book covers points in a 3D Cartesian coordinate system, and then discusses vectors and the details of dot and cross products. Basic mathematical foundations are illustrated through Unity-based example implementations. Also provided are examples showing how the concepts are applied when implementing video game functionality, such as collision support, motion simulations, autonomous behaviors, shadow approximations, and reflection off arbitrary

walls. Throughout this book, you learn and examine the concepts and their applications in a game engine. What You Will Learn Understand the basic concepts of points and vectors and their applications in game development Apply mathematical concepts to modern video game functionality, such as spherical and box colliders Implement autonomous behaviors, including following way points, facing a target, chasing an object, etc. Who This Book is For Beginners, and those interested in the implementation of interactive games, who need a basic mathematical background or a refresher with modern examples

Learning C# by Developing Games with Unity 3D

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.

The C# Player's Guide

The C# Player's Guide (3rd Edition) is the ultimate guide for people starting out with C#, whether you are new to programming, or an experienced vet. This guide takes you from your journey's beginning, through the most challenging parts of programming in C#, and does so in a way that is casual, informative, and fun.This version of the book is updated for C# 7.0 and Visual Studio 2017Get off the ground quickly, with a gentle introduction to C#, Visual Studio, and a step-by-step walkthrough and explanation of how to make your first C# program.Learn the fundamentals of procedural programming, including variables, math operations, decision making, looping, methods, and an in-depth look at the C# type system.Delve into object-oriented programming, from start to finish, including inheritance, polymorphism, interfaces, and generics.Explore some of the most useful advanced features of C#, and take on some of the most common tasks that a programmer will tackle.Learn to control the tools and tricks of programming in C#, including the .NET framework, dealing with compiler errors, and hunting down bugs in your program.Master the needed skills by taking on a large collection of Try It Out! challenges, to ensure that you've learned the things you need to.With this guide, you'll soon be off to save the world (or take over it) with your own awesome C# programs!

The C# Programming Yellow Book

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

Hands-On Rust

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.

C# Game Programming

Includes bibliographical references and index.

Unity Game Development

If you don't know anything about programming in general, writing code, writing scripts, or have no idea where to even begin, then this book is perfect for you. If you want to make games and need to learn how to write C# scripts or code, then this book is ideal for you.Unity is a cross-platform development platform initially created for developing games but is now used for a wide range of things such as: architecture, art, children's apps, information management, education, entertainment, marketing, medical, military, physical installations, simulations, training, and many more.Unity takes a lot of the complexities of developing games and similar interactive experiences and looks after them behind the scenes so people can get on with designing and developing their games. These complexities include graphics rendering, world physics and compiling. More advanced users can interact and adapt them as needed but for beginners they need not worry about it.Games in Unity are developed in two halves; the first half -within the Unity editor, and the second half -using code, specifically C#. Unity is bundled with MonoDevelopor Visual Studio 2015 Communityfor writing C#.

Beginning C# Programming with Unity

Get up and running with Unity with the help of expert guidance for addressing the performance issues encountered in Unity development Key Features • Discover solutions to common problems faced by .NET developers while creating games in Unity • Explore tips, tricks, best practices, and advanced Unity coding techniques for creating impressive games • Understand how to program with C# code using Unity's built-in modules and add engaging effects Book Description Understand what makes Unity the world's most widely used real-time 3D development platform and explore its powerful features for creating 3D and 2D games, as well as the Unity game engine and the Microsoft Game Dev, including the Microsoft Azure Cloud and Microsoft Azure PlayFab services, to create games. You will start by getting acquainted with the Unity editor and the basic concepts of Unity script programming with C#. You'll then learn how to use C# code to work with Unity's built-in modules, such as UI, animation, physics, video, and audio, and understand how to develop a game with Unity and C#. As you progress through the chapters, you'll cover advanced topics such as the math involved in computer graphics and how to create a custom render pipeline in Unity with the new Scriptable Render Pipeline, all while optimizing performance in Unity. Along the way, you'll be introduced to Microsoft Game Dev, Azure services, and Azure PlayFab, and using the Unity3D PlayFab SDK to access the PlayFab API. By the end of this Unity book, you'll have become familiar with the Unity engine and be ready to develop your own games while also addressing the performance issues that you could encounter in the development process. What you will learn • Get to grips with using the Unity Editor • Use C# scripts to work with Unity's built-in modules such as UI, animation, physics, video, and audio • Create a custom render pipeline in Unity Engine with the latest Scriptable Render Pipeline • Write high-performance multithreaded code with the latest DOTS in Unity • Discover the Azure PlayFab Client library for C# in Unity • Understand how the asset management and serialization system within Unity really works • Explore some of the most commonly used profiler tools in Unity development Who this book is for The book is for developers with intermediate .NET and C# programming experience who are interested in learning game development with Unity. Basic experience in C# programming is assumed.

Game Development with Unity for .NET Developers

No detailed description available for \"Unity 6 Game Development with C# Scripting\".

Unity 6 Game Development with C# Scripting

Holistic Mobile Game Development with Unity: An All-In-One Guide to Implementing Mechanics, Art Design and Programming for iOS and Android Games Master mobile game design and development in this all-in-one guide to creating iOS and Android games in the cutting-edge game engine, Unity. By using Penny de Byl’s holistic method, you will learn about the principles of art, design, and code and gain multidisciplinary skills needed to succeed in the independent mobile games industry. In addition, hands-on exercises will help you throughout the process from design to publication in the Apple App Store and Google Play Store. Over 70 practical step-by-step exercises recreating the game mechanics of contemporary mobile games, including Angry Birds, Temple Run, Year Walk, Minecraft, Curiosity Cube, Fruit Ninja, and more. Design principles, art, and programming in unison – the one-stop shop for indie developers requiring interdisciplinary skills in their small teams. An introduction to essential two- and three-dimensional mathematics, geometry and physics concepts. A portfolio of royalty free reusable game mechanics and assets. Accompanying website, www.holistic3d.com, features project source code, instructional videos, art assets, author blog, and teaching resources. Challenge questions and lesson plans are available online for an enhanced learning experience.

Holistic Mobile Game Development with Unity

Master realistic animations and graphics, particle systems, game AI and physics, sprites and VR development with Unity 2017 About This Book Create professional grade games with realistic animation and graphics, particle systems and game physics with Unity 2017 Unleash the power of C# scripting to create intelligent game AI and professional grade game workflows. Create immersive VR games using the latest Unity 2017 VR SDK. Who This Book Is For If you are a Unity developer who now wants to develop and deploy interesting games by leveraging the new features of Unity 2017, then this is the book for you. Basic knowledge of C# programming is assumed. What You Will Learn Explore hands-on tasks and real-world scenarios to make a Unity horror adventure game Create enemy characters that act intelligently and make reasoned decisions Use data files to save and restore game data in a way that is platform-agnostic Get started with VR development Use navigation meshes, occlusion culling, and Profiler tools Work confidently with GameObjects, rotations, and transformations Understand specific gameplay features such as AI enemies, inventory systems, and level design In Detail Do you want to make the leap from being an everyday Unity developer to being a pro game developer? Then look no further! This book is your one-stop solution to creating mesmerizing games with lifelike features and amazing gameplay. This book focuses in some detail on a practical project with Unity, building a first-person game with many features. You'll delve into the architecture of a Unity game, creating expansive worlds, interesting render effects, and other features to make your games special. You will create individual game components, use efficient animation techniques, and implement collision and physics effectively. Specifically, we'll explore optimal techniques for importing game assets, such as meshes and textures; tips and tricks for effective level design; how to animate and script NPCs; how to configure and deploy to mobile devices; how to prepare for VR development; how to work with version control; and more. By the end of this book, you'll have developed sufficient competency in Unity development to produce fun games with confidence. Style and approach This book takes an easy-to-follow, step-by-step tutorial approach. You will create an advanced level Unity game with an emphasis on leveraging advanced Unity 2017 features while developing the game in its entirety.

Mastering Unity 2017 Game Development with C#

This book teaches beginners and aspiring game developers how to develop 2D games with Unity. Thousands of commercial games have been built with Unity. The reader will learn the complete process of 2D game development, step by step. The theory behind each step is fully explained. This book contains numerous color illustrations and access to all source code and companion videos. Key Features: Fully detailed game

projects from scratch. Beginners can do the steps and create games right away. No coding experience is necessary. Numerous examples take a raw beginner toward professional coding proficiency in C# and Unity. Includes a thorough introduction to Unity 2020, including 2D game development, prefabs, cameras, animation, character controllers, lighting, and sound. Includes a step-by-step introduction to Unity 2019.3. Extensive coverage of GIMP, Audacity, and MuseScore for the creation of 2D graphics, sound effects, and music. All required software is free to use for any purpose including commercial applications and games. Franz Lanzinger is the owner and chief game developer of Lanzinger Studio, an independent game development and music studio in Sunnyvale, California. He started his career in game programming in 1982 at Atari Games, Inc., where he designed and programmed the classic arcade game Crystal Castles. In 1989, he joined Tengen, where he was a programmer and designer for Ms. Pac-Man and Toobin' on the NES. He co-founded Bitmasters, where he designed and coded games including Rampart and Championship Pool for the NES and SNES, and NCAA Final Four Basketball for the SNES and Sega Genesis. In 1996, he founded Actual Entertainment, publisher and developer of the Gubble video game series. He has a B.Sc. in mathematics from the University of Notre Dame and attended graduate school in mathematics at the University of California at Berkeley. He is a former world record holder on Centipede and Burgertime. He is a professional author, game developer, accompanist, and piano teacher. He is currently working on remaking the original Gubble game in Unity and Blender.

2D Game Development with Unity

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

Learning C# Programming with Unity 3D, second edition

Game Development: Game Design & Programming for Beginners is a complete guide for aspiring game developers with no prior experience in coding or design. This beginner-friendly book takes you through the fundamentals of game mechanics, level design, character development, and programming using popular tools and engines. Learn how to create interactive 2D and 3D games step-by-step, understand the logic behind gameplay, and turn your creative ideas into playable experiences. Whether you want to build your first mobile game or start a career in game development, this book offers the practical knowledge and skills to get you started.

Game Development: Game Design & Programming for Beginners | Learn to Build Games from Scratch

Master game design and digital art principles simultaneously with this all-in-one guide to creating games in the cutting-edge game engine Unity. Reworked for C# and Unity 2018 & 2019, and bursting with images and tutorials, Penny de Byl’s Holistic Game Development with Unity will help the reader gain the multidisciplinary skills needed to succeed in the independent game industry. Holistic Game Development with Unity includes new coverage on Augmented Reality, Networking, and Virtual Reality such as the Oculus Rift. Supplementary material, including instructional videos, discussion forums and art assets are provided in the companion website located at www.holistic3d.com. Learn to combine the beauty of art and the functionality of programming in de Byl’s third edition for Unity game development. Key features: Art and programming in Unity, the only one-stop shop for individual developers and small teams looking to

tackle both tasks. Proven step-by-step tutorials show you how to design and structure an entire game in Unity with art assets. Revised to cover the Unity game engine versions 2018 and 2019. New coverage of Nav Meshes, Augmented Reality, Mobile Builds and Mecanim. An introduction to essential two- and three-dimensional mathematical and physics concepts. A portfolio of royalty free reusable game mechanics. Revamped and expanded accompanying website, www.holistic3d.com, features project source code, instructional videos, art assets, author blog, and discussion forums. Additional challenge questions and lesson plans are available online for an enhanced learning experience.

Holistic Game Development with Unity 3e