

Unity Game Engine Manual

A seat-of-your-pants manual for building fun, groovy little games quickly Build fun games using the free Unity 3D game engine even if you've never coded before Learn how to "skin" projects to make totally different games from the same file - more games, less effort! Deploy your games to the Internet so that your friends and family can play them Packed with ideas, inspiration, and advice for your own game design and development Stay engaged with fresh, fun writing that keeps you awake as you learn In Detail Beginner game developers are wonderfully optimistic, passionate, and ambitious. But that ambition is often dangerous! Too often, budding indie developers and hobbyists bite off more than they can chew. Some of the most popular games in recent memory - Doodle Jump, Paper Toss, and Canabalt, to name a few - have been fun, simple games that have delighted players and delivered big profits to their creators. This is the perfect climate for new game developers to succeed by creating simple games with Unity 3D, starting today. This book starts you off on the right foot, emphasizing small, simple game ideas and playable projects that you can actually finish. The complexity of the games increases gradually as we progress through the chapters. The chosen examples help you learn a wide variety of game development techniques. With this understanding of Unity 3D and bite-sized bits of programming, you can make your own mark on the game industry by finishing fun, simple games. This book shows you how to build crucial game elements that you can reuse and re-skin in many different games, using the phenomenal (and free!) Unity 3D game engine. It initiates you into indie game culture by teaching you how to make your own small, simple games using Unity3D and some gentle, easy-to-understand code. It will help you turn a rudimentary keep-up game into a madcap race through hospital hallways to rush a still-beating heart to the transplant ward, program a complete 2D game using Unity's User Interface controls, put a dramatic love story spin on a simple catch game, and turn that around into a classic space shooter with spectacular explosions and "pew" sounds! By the time you're finished, you'll have learned to develop a number of important pieces to create your own games that focus in on that small, singular piece of joy that makes games fun. This book shoots straight for the heart of fun, simple game design and keeps shooting until you have all the pieces you need ...

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.

Unity is an incredibly powerful and popular game creation tool, and Unity 4 brings even more great features, including Mechanim animation. Learn Unity 4 for iOS Game Development will show you how to use Unity with Xcode to create fun, imaginative 3D games for iPhone, iPad, and iPod touch. You'll learn how to optimize your game for both speed and quality, how to test and profile your game, and how to get the most out of your iOS device features, including the gyroscope and accelerometer. You'll also learn how to incorporate the latest Game Center improvements in iOS 6 into your game, how to make sure your game gets into the App Store, and even how to promote your app and track revenue. If you have a great 3D game idea, and you want to make it a reality in the App Store, then Learn Unity 4 for iOS Game Development has exactly what you need.

Ever been fascinated by the game development industry and wanted to have a job in this field? This book serves as a perfect starting point for you as it answers the most commonly asked questions that you might have related to this field. This book is a simple compilation of the most commonly asked questions on my YouTube channel. I came to realise that although I have created tons of videos on my YouTube channel yet there have been instances wherein I have been asked the same questions that have already been covered on my channel. Therefore I thought it would be great to actually combine all the questions into a single book so that all the information is readily available and easily accessible in terms of chapters. My hope with this book is that it helps you know how this industry works and if you are an aspiring game developer then this book may help you to figure out a path for you. I have made sure not to sugar-coat things anywhere and it may feel at times that some parts of the book may seem discouraging for aspiring game developers, however, it is surely a tough industry to make your name in and if it is not presented in the way that it actually is then I would be doing a great disservice to the readers. I can assure you one thing though is that after you read this book you will surely get a proper clarity on how to get into this industry, survive and flourish as the paths presented in this book are proven and tested and I have shared all of these from my personal experiences being in this space.

In the past, not being able to program meant not being able to make video games. Now if you can draw a flow-chart you can use powerful State Machine technology to create your dream game! No-Code Video Game Development using Unity and Playmaker will teach you how to substitute flow-charts for code. As a complete course, it uses a project-based approach. The FPS project comes with over a hundred dollars worth of free #gamedev DLC: Unity Packages, Playmaker Templates, Character Models, Animations, Materials, and more! You'll also learn game design documentation and theory, Mecanim, Particle Systems, and UI. By the time you're done you'll have gained the skills needed to create your own dream game, all without writing any code!

Create Amazing 3D Games for iPhone and iPad

Independent Game Programming with C#

Computer Science – CACIC 2017

Learn Unity3D Programming with UnityScript

23rd Argentine Congress, La Plata, Argentina, October 9-13, 2017, Revised Selected Papers

Game Development 101

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.

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.

In just 24 hours, readers will learn how to get started developing games with Unity. The approach is hands-on and modular. Each chapter covers an essential component of the game development process. Topics are illustrated with sample projects. The book also concludes with a complete game project. 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.

This is a practical and light-hearted guide to get to grips with creating your first games, with easy-to-follow, step-by-step tutorials using the award winning Unity engine. If you've ever wanted to enter the world of independent game development but have no prior knowledge of programming or game development, then this is the book for you. Game developers transitioning from other tools like GameMaker and Flash will find this a useful tool to get them up to speed on the Unity engine, as will anyone who has never handled the Unity engine before.

In just 24 sessions of one hour or less, Sams Teach Yourself Unity Game Development in 24 Hours will help you master the Unity 4 game engine at the heart of Temple Run and many other sizzling-hot mobile games! You'll learn 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 4 game development tasks. Quizzes and Exercises at the end of each chapter help you test your knowledge. Notes present interesting information related to the discussion. Tips offer advice or show you easier ways to perform tasks. Cautions alert you to possible problems and give you advice on how to avoid them. Learn how to... Create and work with game objects, Unity's fundamental building blocks Work efficiently with Unity's graphical asset pipeline Apply shaders and textures to any 3D object Sculpt stunning game worlds with Unity's terrain and environmental toolsets Script tasks ranging from capturing input to building complex behaviors Quickly create repeatable, reusable game objects with prefabs Implement easy, intuitive game user interfaces Create amazing effects with Unity's new Shuriken particle system Leverage the full power of Unity's new Mecanim animation system Integrate ambient 2D/3D audio into your games Use mobile device accelerometers and multi-touch displays Modify a desktop game for mobile platforms Apply the "finishing touches" and deploy your game

Learn Unity 2017 for iOS Game Development

Learn Unity 4 for iOS Game Development

Learn Unity for 2D Game Development

Beginner's Guide : a Seat-of-your-pants Manual for Building Fun, Groovy Little Games Quickly

Developing 2D Games with Unity

Unity 2D Game Development Cookbook

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 Game Audio Implementation offers a unique, practical, project-based approach to learning about aspects of Interactive Game Audio for those who have never used a game engine before and don't want to learn computer programming right now. The book offers insight into the skills needed to design game-ready sounds in current Digital Audio Workstation (DAW) and shows how to implement these sounds within the Unity game engine. The reader will also learn about interactive music and how to set this up to respond to a variety of events in the game, with the option of adding in their own story and dialogue. All the information is presented in a practical working context from an established Game Audio Sound Designer with AAA games experience. The chapters are accompanied by several game levels teaching all about the techniques and theories before offering instructive steps for how to put them into action. After completing the practical tasks in this book, not only will the reader create an interactive soundscape for a multilevel playable game featuring all their own audio, they will also receive tips on how to use their finished project in support of an application for Video Game Sound Designer jobs.

A practical guide on how to use Unity for building cross-platform mobile games and Augmented Reality apps using the latest Unity 2020 toolset Key FeaturesCreate, deploy, and monetize captivating and immersive games on Android and iOS platformsTake your games into the real world by adding augmented reality features to your mobile projectsKick-start your mobile game development journey with step-by-step instructions and a demo game projectBook Description Unity 2020 brings a lot of new features that can be harnessed for building powerful games for popular mobile platforms. This updated second edition delves into Unity development, covering the new features of Unity, modern development practices, and augmented reality (AR) for creating an immersive mobile experience. The book takes a step-by-step approach to building an endless runner game using Unity to help you learn the concepts of mobile game development. This new edition also covers AR features and explains how to implement them using ARCore and ARKit with Unity. The book explores the new mobile notification package and helps you add notifications for your games. You'll learn how to add touch gestures and design UI elements that can be used in both landscape and portrait modes at different resolutions. The book then covers the best ways to monetize your games using Unity Ads and in-app purchases before you learn how to integrate your game with various social networks. Next, using Unity's analytics tools, you'll enhance your game by gaining insights into how players like and use your game. Finally, you'll take your games into the real world by implementing AR capabilities and publishing them on both Android and iOS app stores. By the end of this book, you will have learned Unity tools and techniques and be able to use them to build robust cross-platform mobile games. What you will learnDesign responsive user interfaces for your mobile gamesDetect collisions, receive user input, and create player movements for your mobile gamesCreate interesting gameplay elements using inputs from your mobile deviceExplore the mobile notification package in Unity game engine to keep players engagedCreate interactive and visually appealing content for Android and iOS devicesMonetize your game projects using Unity Ads and in-app purchasesWho this book is for If you are a game developer or mobile developer who wants to learn Unity and use it to build mobile games for iOS and Android, then this Unity book is for you. Prior knowledge of C# and Unity will be beneficial but is not mandatory.

This book constitutes revised selected papers from the 23rd Argentine Congress on Computer Science, CACIC 2017, held in La Plata, Argentina, in October 2017. The 28 papers presented in this volume were carefully reviewed and selected from a total of 132 submissions. They were organized in topical sections named: intelligent agents and systems; distributed and parallel processing; computer technology applied education; graphic computation, images and visualization; software engineering; databases and data mining; hardware architectures, networks and operating systems; innovation in software systems; signal processing and real-time systems; computer security; and innovation in computer science education.

This book is intended for both professionals game developers and hobbyist who are interested in making games with Unity. Users are expected to have knowledge of basics / fundamentals of unity 2D game development and should have a working knowledge of C#.

Proceedings of the 37th IMAC, A Conference and Exposition on Structural Dynamics 2019

No-Code Video Game Development Using Unity and Playmaker

Unity in Action, Third Edition

Coding Activities for Developing Games in Unity®

Multiplatform game development in C#

Unity Game Development in 24 Hours, Sams Teach Yourself

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.

Unity 3D Game Development by ExampleBeginner's Guide : a Seat-of-your-pants Manual for Building Fun, Groovy Little Games Quickly

This book focuses on the applications of different digital platforms in the field of healthcare. It describes different devices used in digital healthcare, their benefits, diagnosis, use in treatment, and use cases related to mobile healthcare. Further, it covers machine and deep learning, blockchain technology, big data analytics as relevant to digital healthcare, telehealth technology, and digital applications in the field of push-and-pull pharma marketing. Overall, it enables readers to understand the basics of decision-making processes using digital techniques for the healthcare field. Features: Discusses various aspects of digitization of healthcare systems Examines deployment of machine learning including IoT and medical analytics Provides studies on the design, implementation, development, and management of intelligent healthcare systems Includes sensor-based

digitization of healthcare data Reviews real-time advancement and challenges of digital communication in the field of healthcare This book is aimed at researchers and graduate students in healthcare, internet of things, machine learning, computer science, robotics, wearables, electrical engineering, and biomedical engineering.

Special Topics in Structural Dynamics & Experimental Techniques, Volume 5: Proceedings of the 37th IMAC, A Conference and Exposition on Structural Dynamics, 2019, the fifth volume of eight from the Conference brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on: Analytical Methods Emerging Technologies for Structural Dynamics Engineering Extremes Experimental Techniques Finite Element Techniques General Topics

Beginner game developers are wonderfully optimistic, passionate, and ambitious. But that ambition is often dangerous! Too often, budding indie developers and hobbyists bite off more than they can chew. Some of the most popular games in recent memory - Doodle Jump, Paper Toss, and Canabalt, to name a few - have been fun, simple games that have delighted players and delivered big profits to their creators. This is the perfect climate for new game developers to succeed by creating simple games with Unity 3D, starting today. This book starts you off on the right foot, emphasizing small, simple game ideas and playable projects that you can actually finish. The complexity of the games increases gradually as we progress through the chapters. The chosen examples help you learn a wide variety of game development techniques. With this understanding of Unity 3D and bite-sized bits of programming, you can make your own mark on the game industry by finishing fun, simple games. This book shows you how to build crucial game elements that you can reuse and re-skin in many different games, using the phenomenal (and free!) Unity 3D game engine. It initiates you into indie game culture by teaching you how to make your own small, simple games using Unity3D and some gentle, easy-to-understand code. It will help you turn a rudimentary keep-up game into a madcap race through hospital hallways to rush a still-beating heart to the transplant ward, program a complete 2D game using Unity's User Interface controls, put a dramatic love story spin on a simple catch game, and turn that around into a classic space shooter with spectacular explosions and "pew" sounds! By the time you're finished, you'll have learned to develop a number of important pieces to create your own games that focus in on that small, singular piece of joy that makes games fun. This book shoots straight for the heart of fun, simple game design and keeps shooting until you have all the pieces you need to assemble your own great games.

Extending Unity with Editor Scripting

Unity 2020 Mobile Game Development

Unity 4.x Game Development by Example Beginner's Guide

Unity in Action

Learn VR development by building immersive applications and games with Unity 2019.4 and later versions, 3rd Edition

Unity 3D Game Development by Example

Discover how to use Unity with Xcode to create fun, imaginative 3D games for iPhone and iPad. This book shows you how to optimize your game for both speed and quality, how to test and profile your game, and how to get the most out of your iOS device features, including the gyroscope and accelerometer. You'll also learn how to incorporate the latest Game Center improvements in iOS into your game, how to make sure your game gets into the App Store, and even how to promote your app and track revenue. Unity is an incredibly powerful and popular game creation tool, and Unity 5 brings even more great features, including Mecanim animation. If you have a great 3D game idea, and you want to make it a reality in the App Store, then Learn Unity 5 for iOS Game Development has exactly what you need. What You'll Learn How to include iAds How to integrate Game Center leaderboards and achievements How to profile and optimize performance Who This Book Is For iOS developers interested in using Unity and Unity developers who want to customize their games for iOS devices.

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.

Unity for Absolute Beginners walks you through the fundamentals of creating a small third-person shooter game with Unity. Using the free version of Unity to begin your game development career, you'll learn how to import, evaluate and manage your game resources to create awesome third-person shooters. This book assumes that you have little or no experience with game development, scripting, or 3D assets, and that you're eager to start creating games as quickly as possible, while learning Unity in a fun and interactive environment. With Unity for Absolute Beginners you'll become familiar with the Unity editor, key concepts and functionality. You'll learn how to import, evaluate and manage resources. You'll explore C# scripting in Unity, and learn how to use the Unity API. Using the provided art assets, you will learn the fundamentals of good game design and iterative refinement as you take your game from a simple prototype to a quirky, but challenging variation of the ever-popular first-person shooter. As can be expected, there will be plenty of destruction, special effects and mayhem along the way. Unity for Absolute Beginners assumes that you have little or no experience with game development, scripting, or 3D assets, but are eager to get up-to-speed as quickly as possible while learning Unity in a fun and interactive environment.

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

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.

Beginner's Guide

Unity 2020 Virtual Reality Projects

2D Game Development with Unity

Discover practical techniques and examples to create and deliver engaging games for Android and iOS, 2nd Edition

Game Engine Architecture, Second Edition

A Primer for Technical Artists Using Maya and Python

Put Unity to use for your video games by creating your own custom tools with editor scripting About This Book Acquire a good understanding of extending Unity's editor capabilities for a platformer game by using Gizmos, custom inspectors, editor windows, scriptable objects, and more Learn to configure and get control over your asset import pipeline using asset preprocessors A step-by-step, comprehensible guide to creating and customizing a build pipeline that fits the necessities of your video game development team Who This Book Is For This book is for anyone who has a basic knowledge of Unity programming using C# and wants to learn how to extend and create custom tools using Unity editor scripting to improve the development workflow and make video game development easier. What You Will Learn Use Gizmos to create visual aids for debugging Extend the editor capabilities using custom inspectors, property and decorator drawers, editor windows, and handles Save your video game data in a persistent way using scriptable objects Improve the look and feel of your custom tools using GUIStyles and GUISkins Configure and control the asset import pipeline Improve the build creation pipeline Distribute the custom tools in your team or publish them in the Asset Store In Detail One of Unity's most powerful features is the extensible editor it has. With editor scripting, it is possible to extend or create functionalities to make video game development easier. For a Unity developer, this is an important topic to know and understand because adapting Unity editor scripting to video games saves a great deal of time and resources. This book is designed to cover all the basic concepts of Unity editor scripting using a functional platformer video game that requires workflow improvement. You will commence with the basics of editor scripting, exploring its implementation with the help of an example project, a level editor, before moving on to the usage of visual cues for debugging with Gizmos in the scene view. Next, you will learn how to create custom inspectors and editor windows and implement custom GUI. Furthermore, you will discover how to change the look and feel of the editor using editor GUIStyles and editor GUISkins. You will then explore the usage of editor scripting in order to improve the development pipeline of a video game in Unity by designing ad hoc editor tools, customizing the way the editor imports assets, and getting control over the build creation process. Step by step, you will use and learn all the key concepts while creating and developing a pipeline for a simple platform video game. As a bonus, the final chapter will help you to understand how to share content in the Asset Store that shows the creation of custom tools as a possible new business. By the end of the book, you will easily be able to extend all the concepts to other projects. Style and approach This book uses a step-by-step approach that will help you finish with a level editor tool, a custom configuration for the asset import pipeline, and a build pipeline totally adjusted to the video game.

Harness the power of procedural content generation to design unique games with Unity About This Book Learn the basics of PCG development Develop a 2D game from start to finish Explore all the different ways PCG can be applied in games Who This Book Is For This book is for Unity game developers, especially those who work on indie games. You should be familiar with Unity and C# scripting but you'll be able to jump in and start learning PCG straightaway. What You Will Learn Understand the theory of Procedural Content Generation Learn the uses of Pseudo Random Numbers Create reusable algorithm designs for PCG Evaluate the data structures for PCG Develop smaller games with larger amounts of content Generate content instead of spending time designing every minute detail Learn when and how to add PCG to your game Learn the fundamental techniques of PCG In Detail Procedural Content Generation is a process by which game content is developed using computer algorithms, rather than through the manual efforts of game developers. This book teaches readers how to develop algorithms for procedural generation that they can use in their own games. These concepts are put into practice using C# and Unity is used as the game development engine. This book provides the fundamentals of learning and continued learning using PCG. You'll discover the theory of PCG and the mighty Pseudo Random Number Generator. Random numbers such as die rolls and card drafting provide the chance factor that makes games fun and supplies spontaneity. This book also takes you through the full development of a 2D game. Starting with level generation, you'll learn how PCG can make the game environment for you. You'll move into item generation and learn the different techniques to procedurally create game items. Thereafter, you'll be guided through the more abstract PCG areas such as scaling difficulty to the player and even generating music! The book helps you set up systems within your games where algorithms create computationally generated levels, art assets, quests, stories, characters, and weapons; these can substantially reduce the burden of manually creating every aspect of the game. Finally, you'll get to try out your new PCG skills on 3D terrain generation. Style and approach An easy-to-follow, project-based guide that will let you build a complete game by the end of the book using PCG.

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.

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.

This book constitutes the refereed proceedings of the Second International Conference on Augmented and Virtual Reality, AVR 2015, held in Lecce, Italy, in September 2015. The 32 papers and 8 short papers presented were carefully reviewed and selected from 82 submissions. The SALENTO AVR 2015 conference brings together a community of researchers from academia and industry, computer scientists, engineers, and physicians in order to share points of views, knowledge, experiences, and scientific and technical results related to state-of-the-art solutions and technologies on virtual and augmented reality applications for medicine, cultural heritage, education, industrial sectors, as well as the demonstration of advanced products and technologies.

Multiplatform Game Development in C#

Digital Future of Healthcare

Unity 2018 Game Development in 24 Hours, Sams Teach Yourself

Procedural Content Generation for Unity Game Development

The Persistence of Code in Game Engine Culture

Unity 3.x Game Development Essentials

With its unique focus on video game engines, the data-driven architectures of game development and play, this innovative textbook examines the impact of software on everyday life and explores the rise of engine-driven culture. Through a series of case studies, Eric Freedman lays out a clear methodology for studying the game development pipeline, and uses the video game engine as a pathway for media scholars and practitioners to navigate the complex terrain of software practice. Examining several distinct software ecosystems that include the proprietary efforts of Amazon, Apple, Capcom, Epic Games and Unity Technologies, and the unique ways that game engines are used in non-game industries, Freedman illustrates why engines matter. The studies bind together designers and players, speak to the labors of the game industry, value the work of both global and regional developers, and establish critical connection points between software and society. Freedman has crafted a much-needed entry point for students new to code, and a research resource for scholars and teachers working in media industries, game development and new media.

Used by blockbuster game studios, indie developers, and computer science educators, the Unity Game Engine is one of the world's most popular tools for creating real-time interactive graphics. This volume provides an accessible introduction to the expansive Unity ecosystem through a series of unique activities that illustrate some of the important concepts of game development and real-time graphics programming. In a computer-driven world, these coding skills are useful for not just game development, but also contribute to core computer literacy.

A complete beginner's guide to game development with the powerful Unity game engine. CS Instructor and game designer, Mike Geig, offers a do-it-yourself approach to game development - with all of the main essentials covered. In just 24 hours, learn how to get started developing games with Unity with a hands-on and modular approach. Each chapter covers an essential component of the game development process, illustrated with sample projects, and including full source code, all 3rd party art assets (textures, fonts, models), and all 3rd party sound assets.

Rigging for Games: A Primer for Technical Artists Using Maya and Python is not just another step-by-step manual of loosely related tutorials. Using characters from the video game Tin, it takes you through the real-world creative and technical process of rigging characters for video games and cinematics, allowing readers a complete inside look at a single project. You'll explore new ways to write scripts and create modular rigs using Maya and Python, and automate and speed up the rigging process in your creative pipeline. Finally, you'll learn the most efficient ways of exporting your rigs into the popular game engine Unity. This is the practical, start-to-finish rigging primer you've been waiting for! Enhance your skillset by learning how to efficiently rig characters using techniques

applicable to both games and cinematics Keep up with all the action with behind-the-scenes images and code scripts Refine your rigging skills with tutorials and project files available on the **companion website**

Explore the latest features of Unity and build VR experiences including first-person interactions, audio fireball games, 360-degree media, art gallery tours, and VR storytelling **Key Features** Discover **step-by-step instructions and best practices to begin your VR development journey** Explore Unity features such as URP rendering, XR Interaction Toolkit, and ProBuilder **Build impressive VR-based apps and games that can be experienced using modern devices like Oculus Rift and Oculus Quest** **Book Description** This third edition of the **Unity Virtual Reality (VR) development guide** is updated to cover the latest features of **Unity 2019.4** or later versions - the leading platform for building VR games, applications, and immersive experiences for contemporary VR devices. Enhanced with more focus on growing components, such as Universal Render Pipeline (URP), extended reality (XR) plugins, the XR Interaction Toolkit package, and the latest VR devices, this edition will help you to get up to date with the current state of VR. With its practical and project-based approach, this book covers the specifics of virtual reality development in Unity. You'll learn how to build VR apps that can be experienced with modern devices from Oculus, VIVE, and others. This virtual reality book presents lighting and rendering strategies to help you build cutting-edge graphics, and explains URP and rendering concepts that will enable you to achieve realism for your apps. You'll build real-world VR experiences using world space user interface canvases, locomotion and teleportation, 360-degree media, and timeline animation, as well as learn about important VR development concepts, best practices, and performance optimization and user experience strategies. By the end of this Unity book, you'll be fully equipped to use Unity to develop rich, interactive virtual reality experiences. What you will learn **Understand the current state of virtual reality and VR consumer products** **Get started with Unity by building a simple diorama scene using Unity Editor and imported assets** **Configure your Unity VR projects to run on VR platforms such as Oculus, SteamVR, and Windows immersive MR** **Design and build a VR storytelling animation with a soundtrack and timelines** **Implement an audio fireball game using game physics and particle systems** **Use various software patterns to design Unity events and interactable components** **Discover best practices for lighting, rendering, and post-processing** **Who this book is for** Whether you're a non-programmer unfamiliar with 3D computer graphics or experienced in both but new to virtual reality, if you're interested in building your own VR games or applications, this Unity book is for you. Any experience in Unity will be useful but is not necessary.

Unity for Absolute Beginners

Learning 2D Game Development with Unity

A Practical Guide for Beginners

Special Topics in Structural Dynamics & Experimental Techniques, Volume 5

Unity 5 Game Optimization

A seat-of-your-pants manual for building fun, groovy little games quickly with Unity 3.x.

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

This hands-on beginners guide gets you building games fast, all with the awesome Unity engine! You'll speed past the basics and use your existing coding skills to create 2D, 3D, and AR/VR games. In Unity in Action, Third Edition, you will learn how to: Create characters that run, jump, and bump into things Build 3D first-person shooters and third-person action games Construct 2D card games and side-scrolling platformers Script enemies with AI Improve game graphics by importing models and images Design an intuitive user interface for your games Play music and spatially-aware sound effects Connect your games to the internet for online play Deploy your games to desktop, mobile, and the web Thousands of new game developers have chosen Joe Hocking's Unity in Action as their first step toward Unity mastery. Starting with the initial groundwork of a new game development project, you'll quickly start writing custom code instead of clicking together premade scripts. This fully updated third edition comes packed with fully refreshed graphics, Unity's latest features, and coverage of augmented and virtual reality toolkits. You'll master the Unity toolset from the ground up, learning the skills to go from application coder to game developer. Foreword by Jesse Schell. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Writing games is rewarding and fun—and with Unity, it's easy to get started! Unity handles the heavy lifting, so you can focus on game play, graphics, and user experience. C# support and a huge ecosystem of prebuilt components help even first-time developers go from the drawing board to the screen fast. About the book 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. What's inside Create characters that run, jump, and bump into things Script enemies with AI Play music and spatially-aware sound effects Deploy your games to desktop, mobile, and the web About the reader For programmers who know any object-oriented programming language. Examples are in C#. About the author Joe Hocking is a software engineer and Unity expert specializing in interactive media development. Table of Contents PART 1 FIRST STEPS 1 Getting to know Unity 2 Building a demo that puts you in 3D space 3 Adding enemies and projectiles to the 3D game 4 Developing graphics for your game PART 2 GETTING COMFORTABLE 5 Building a Memory game using Unity's 2D functionality 6 Creating a basic 2D platformer 7 Putting a GUI onto a game 8 Creating a third-person 3D game: Player movement and animation 9 Adding interactive devices and items within the game PART 3 STRONG FINISH 10 Connecting your game to the internet 11 Playing audio: Sound effects and music 12 Putting the parts together into a complete game 13 Deploying your game to players' devices

Learn Unity Programming with UnityScript is your step-by-step guide to learning to make your first Unity games using UnityScript. You will move from point-and-click components to fully customized features. You need no prior programming knowledge or any experience with other design tools such as PhotoShop or Illustrator - you can start from scratch making Unity games with what you'll learn in this book. Through hands-on examples of common game patterns, you'll learn and apply the basics of game logic and design. You will gradually become comfortable with UnityScript syntax, at each point having everything explained to you clearly and concisely. Many beginner programming books refer to documentation that is too technically abstract for a beginner to use - Learn Unity Programming with UnityScript will teach you how to read and utilize those resources to hone your skills, and rapidly increase your knowledge in Unity game development. You'll learn about animation, sound, physics, how to handle user interaction and so much more. Janine Suvak has won awards for her game development and is ready to show you how to start your journey as a game developer. The Unity3D game engine is flexible, cross-platform, and a great place to start your game development adventure, and UnityScript was made for it - so get started game programming with this book today.

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.

Second International Conference, AVR 2015, Lecce, Italy, August 31 - September 3, 2015, Proceedings

Augmented and Virtual Reality

Rigging for Games

Unity's JavaScript for Beginners

Pro Unity Game Development with C#

Sams Teach Yourself Unity Game Development in 24 Hours

Master performance optimization for Unity3D applications with tips and techniques that cover every aspect of the Unity3D Engine *About This Book* Optimize CPU cycles, memory usage, and GPU throughput for any Unity3D application *Master optimization techniques across all Unity Engine features including Scripting, Asset Management, Physics, Graphics Features, and Shaders* *A practical guide to exploring Unity Engine's many performance-enhancing methods* *Who This Book Is For* This book is intended for intermediate and advanced Unity developers who have experience with most of Unity's feature-set, and who want to maximize the performance of their game. Familiarity with the C# language will be needed. *What You Will Learn* Use the Unity Profiler to find bottlenecks anywhere in our application, and discover how to resolve them *Implement best-practices for C# scripting to avoid common pitfalls* Develop a solid understanding of the rendering pipeline, and maximize its performance through reducing draw calls and avoiding fill rate bottlenecks *Enhance shaders in a way that is accessible to most developers, optimizing them through subtle yet effective performance tweaks* Keep our scenes as dynamic as possible by making the most of the Physics engine *Organize, filter, and compress our art assets to maximize performance while maintaining high quality* Pull back the veil on the Mono Framework and the C# Language to implement low-level enhancements that maximize memory usage and avoid garbage collection *Get to know the best practices for project organization to save time through an improved workflow* *In Detail* Competition within the gaming industry has become significantly fiercer in recent years with the adoption of game development frameworks such as Unity3D. Through its massive feature-set and ease-of-use, Unity helps put some of the best processing and rendering technology in the hands of hobbyists and professionals alike. This has led to an enormous explosion of talent, which has made it critical to ensure our games stand out from the crowd through a high level of quality. A good user experience is essential to create a solid product that our users will enjoy for many years to come. Nothing turns gamers away from a game faster than a poor user-experience. Input latency, slow rendering, broken physics, stutters, freezes, and crashes are among a gamer's worst nightmares and it's up to us as game developers to ensure this never happens. High performance does not need to be limited to games with the biggest teams and budgets. Initially, you will explore the major features of the Unity3D Engine from top to bottom, investigating a multitude of ways we can improve application performance starting with the detection and analysis of bottlenecks. You'll then gain an understanding of possible solutions 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. This book gathers a massive wealth of knowledge together in one place, saving many hours of research and can be used as a quick reference to solve specific issues that arise during product development. *Style and approach* This book is organized based on the major features of Unity engine and should be treated as a reference guide. It is written as a series of investigations into both common and unusual performance pitfalls, each including a study on why the bottleneck is causing us problems, and a list of enhancements or features that can be used to work around them. Differences in effectiveness, behaviors, or feature-sets between Unity 4.x and Unity 5.x will be highlighted.

Unity Game Development Essentials

Learning C# by Developing Games with Unity 3D

A Seat-of-Your-Pants Manual for Building Fun, Groovy Little Games Quickly

Unity Game Audio Implementation

Unity 3.x Game Development by Example

A Hands-On Guide to Game Creation