

1. Record Nr.	UNINA9910558497503321
Autore	Coutinho Christopher
Titolo	Unity virtual reality development with VRTK4 : a no-coding approach to developing immersive VR experiences, games, & apps // Christopher Coutinho
Pubbl/distr/stampa	Berkeley, California : , : Apress L. P., , [2022] ©2022
ISBN	1-4842-7933-6
Descrizione fisica	1 online resource (410 pages)
Disciplina	794.81526
Soggetti	Computer games - Programming Three-dimensional display systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Intro -- Table of Contents -- About the Author -- About the Technical Reviewer -- Acknowledgments -- Introduction -- Chapter 1: Introduction -- A No-Coding Approach to VR Development -- Two Ways to Approach the Material Covered in This Book -- Advantages of VRTK over Alternative Solutions -- Summary -- Chapter 2: A New Reality through Virtual Reality -- What Is Virtual Reality? -- Become a VR pioneer now, and create the future! -- What Can You Do with VR? -- Medical and Mental Health -- Automotive Engineering and Design -- Training and Education -- Architecture, Construction, and Real Estate -- Entertainment and Journalism -- Advertising and Retail -- Gaming in VR -- Immersion and Presence in VR -- Place Illusion -- Plausibility Illusion -- Embodiment Illusion -- VR Hardware and Technology -- Input Controllers -- 3DOF -- 6DOF -- Summary -- Chapter 3: Setting Up Your Project for VR Development -- VR Hardware Prerequisites -- Unity Prerequisites and Oddities -- Setting Up Your VR project -- Importing the Unity Package File -- Exploring the XR Plugin Management for Unity -- Importing the Oculus Integration SDK -- Choosing Player Settings within Unity -- Summary -- Chapter 4: Importing VRTK 4 Tilia Packages -- Importing Version 4 of VRTK -- Unity's Package Manager and VRTK 4 Tilia Packages -- Exploring the "Packages" Folder -- Summary -- Chapter 5: Setting Up VRTK's

Camera Rigs -- Setting Up Individual Camera Rigs -- Setting Up the Unity XR Camera Rig -- Setting Up the Oculus Camera Rig -- Setting Up the Spatial Simulator -- Setting Up the Tracked Alias -- Configuring the VRTK's Tracked Alias -- Hooking Camera Rigs to the Tracked Alias -- Test using the Spatial Simulator -- Universal Camera Rig -- Configuring the Oculus OVR Camera Rig -- Testing Spatial Movement Using a VR Headset -- Summary -- Chapter 6: Setting Up Interactors and Virtual Hands.

Interactors versus Interactables -- Setting up Interactors on Controllers -- Testing Out Your New Cuboid Avatar Interactors -- Setting Up Realistic Animated Virtual Hands -- Animated Hands for Camera Rigs Oculus Integration -- Playtesting Your Scene Using Your Oculus Headset -- Animated Hands for Unity XR and Spatial Simulator Camera Rigs -- Playtesting the Scene Using Your VR Headset -- Animating Custom Prototype Hands -- Capturing the Grip, Mouse, or Bumper Button Input -- Playtesting the Grab and Release Hand Animations -- Capturing Thumbstick and Keyboard Input -- Playtesting Teleporting Hand Animation -- Summary -- Chapter 7: Configuring Interactor Functionality and Setting Up Velocity Trackers -- Setting Up the Grab Action Property on Interactors to Enable Grabbing -- Setting Up an Interactable Object -- Exploring the Example Avatar Cuboid Object -- Testing Your Hand Proto Left and Hand Proto Right Game Objects -- The Grab Mechanism with Oculus-Provided Hands -- Setting Up the Example Avatar Object -- Setting Up Velocity Trackers -- Summary -- Chapter 8: Interactable Game Objects -- Picking Up Objects -- The Follow Tracking Property -- Picking Up an Interactable Object Using Precise Grab Points -- Custom Pickup Placements -- Adding Secondary Grab Actions to Interactable Objects -- Swapping Objects between Hands with a Secondary Grab Action -- Performing a Two-Handed Grab with a Secondary Grab Action -- Scaling an Interactable Object with a Secondary Grab Action -- Creating a Unity Layer for Interactable Objects -- Summary -- Chapter 9: Moving Around the Virtual World: Teleportation -- Teleport Locomotion -- Capturing Inputs to Trigger Teleportation -- Setting Up a Curved Teleport Pointer -- Setting up a Teleporter for Instant Teleportation -- Setting Up a Teleporter for Dash Teleportation -- Rotating Around Within the Virtual World.

Playing Animation When the Left Thumbstick Is Flicked -- Rotating Using an Arrow Pointer -- Unity's NavMesh-Based Teleportation -- Teleporting Using Teleport Targets -- Summary -- Chapter 10: Seamless Locomotion -- Capturing Horizontal and Vertical Axis Input -- Strafing Movement -- Free Movement Smooth Rotation -- Free Movement Snap Rotation -- Free Movement Warp Snap Rotation -- Summary -- Chapter 11: Arm-Swinging Movement -- Move in Place Locomotion -- Capturing Thumbstick Touch Input -- Setting Up the Move in Place Locomotion -- Summary -- Chapter 12: Setting Up a Pseudo-Body -- Advantages of Having a Pseudo-Body -- Pseudo-Body Setup -- Implementing a Rollback Mechanic -- Fading the Headset View to Black on Collision -- Summary -- Chapter 13: Climbing in VR -- Climbing Mechanic Requirements -- Setting Up the Climbing Controller -- Making the Containers Climbable -- Making the Ladder Climbable -- Deactivating Untouched Events on Climbable Game Objects -- Summary -- Chapter 14: Movement Amplifier -- Movement Amplifier Setup -- Testing Amplified Movement -- Summary -- Chapter 15: Distance Grabbing -- Prerequisites for Distance Grabbing -- Setting Up the Distance Grabber -- Setting Up a Telekinesis Grab -- Setting Up a straight pointer to Grab Interactable Objects -- Changing the Straight Pointer's Grabbing

Distance -- Activating and Deactivating the Distance Grabber -- Automatically Deactivating the Distance Grabber -- Summary -- Chapter 16: Snap Zones -- Importing the Tool Holder UI Package and Setting Up Two New Work Tools -- Making the Hammer and Axe Interactable -- Setting Up a Tool Holder Snap Zone -- Setting Up Tooltips for Your Tool Holder Snap Zones -- Setting Up Rules to Restrict the Entry of Interactable Objects into Snap Zones -- Setting Up Holsters That Move Around with the Player -- Summary. Chapter 17: Creating Spatial 3D User Interface Game Objects -- Setting Up a Straight Menu Pointer -- Setting Up Clickable Spatial 3D Buttons -- Setting Up a Spatial Button Group -- Changing the Appearance of Your Spatial Button -- Creating a Spatial Toggle Button -- Creating Spatial Option Buttons -- Interacting Directly with VRTK's Spatial Buttons -- Creating a Spatial Slider -- Hacking Your Straight Spatial Menu Pointer to Interact with Your Slider -- Summary -- Chapter 18: Using Unity's UI Controls with the VRTK -- Downloading and Importing Unity Package Files -- Setting Up the UI Elements 2D Skeletal Menu -- Setting Up a Straight 2D UI Menu Pointer -- Having the 2D UI Menu Pointer Interact with the 2D UI Menu System -- Summary -- Chapter 19: Angular Drives -- Setting Up a Steering Wheel -- Setting Up a Door -- Setting Up a Lever -- Angular Joint Drive and Logic Objects -- Summary -- Chapter 20: Linear Drives -- Setting Up a Drawer -- Setting Up a Push Button -- Summary -- Chapter 21: Tips, Tricks, and Recipes -- Adding Realistic Physical Hands -- Obtaining Haptic Feedback -- Highlighting Interactable Game Objects -- Summary -- Chapter 22: Minigame -- Importing the Base Unity Package -- Setting Up the VRTK Prefabs -- Enabling Obstacle Objects to Attach to the Ball -- Getting the Ball to Roll About Freely -- Spatial Tooltip to Display Countdown Timer -- Setting Up the Countdown Timer and Moment Processor -- Enhancing the Minigame -- Summary -- Index.

Sommario/riassunto

Get hands-on practical knowledge of concepts and techniques for VR development using Unity® and VRTK version 4. This book is a step-by-step guide to learning VRTK 4 for developing immersive VR experiences. Unity is a powerful game engine for developing VR experiences. With its built-in support for all major VR headsets, it's the perfect tool for developers to realize their vision in VR.
