Contents

Preface	9
About this book	
Notes for iOS developers	
Introduction: Swift for Complete Beginners	15
How to install Xcode and create a playground Variables and constants	
Types of Data	
Operators	
String Interpolation	
Arrays	
Dictionaries	
Conditional statements	
Loops Switch case	
Functions	
Optionals	
Optional chaining	
Enumerations	
Structs	
Classes	
Properties	
Static properties and methods	
Access control	
Polymorphism and typecasting	
Closures	
Protocols	
Extensions Protocol extensions	
Protocol extensions Wrap up	
ννιαρ υρ	
Project 1: Storm Viewer	157
Storm Viewer: Setting up	107
Working with views	
Introduction to lists	
Loading our images	
Responding to image selection	

Finishing touches Storm Viewer: Wrap up	
Project 2: Cows and Bulls Cows and Bulls: Setting up Designing our user interface Filling in the list Marking guesses Extra polish Customizing the game Now take a bow! Cows and Bulls: Wrap up	189
Project 3: Views and Modifiers Views and modifiers: Introduction Why does SwiftUI use structs for views? Why modifier order matters Why does SwiftUI use "some View" for its view type? Conditional modifiers Environment modifiers Views as properties View composition Custom modifiers Custom containers Views and modifiers: Wrap up	230
Project 4: Text Parser Text Parser: Introduction Bootstrapping an app Performing semantic analysis Finding alternative words Detecting names and languages Bringing in an external package Flags and options Text Parser: Wrap up	266
Project 5: MultiMap MultiMap: Introduction Creating an interactive map Searching for locations Handling multiple list selection	298

Switching over to searchable() Final polish MultiMap: Wrap up	
Project 6: Animation Animation: Introduction Creating implicit animations Customizing animations in SwiftUI Animating bindings Creating explicit animations Controlling the animation stack Animating gestures Showing and hiding views with transitions Building custom transitions using ViewModifier Animation: Wrap up	329
Project 7: Fast Track Fast Track: Setting up From lists to grids Downloading data from a server Remote images and custom subviews Playing audio Adding some extra polish Fast Track: Wrap up	370
Project 8: Odd One Out Odd One Out: Setting up Creating a grid of buttons Generating layouts Click to win Game over Odd One Out: Wrap up	418
Project 9: Drawing Drawing: Introduction Creating custom paths with SwiftUI Paths vs shapes in SwiftUI Adding strokeBorder() support with InsettableShape Transforming shapes using CGAffineTransform and even-odd fills Creative borders and fills using ImagePaint Enabling high-performance Metal rendering with drawingGroup()	442

Project 10: Time Buddy Time Buddy: Setting up The art of nothing Building the main UI Moving, deleting, and copying Clean ups Time Buddy: Wrap up	500
Project 11: Bubble Trouble Bubble Trouble: Setting up Cleaning up the Xcode template Bubbles bubbles everywhere! Setting the universe in motion Adding some difficulty Gotta pop 'em all Bubble Trouble: Wrap up	524
Project 12: Layout and Geometry Layout and geometry: Introduction How layout works in SwiftUI Alignment and alignment guides How to create a custom alignment guide Absolute positioning for SwiftUI views Understanding frames and coordinates inside GeometryReader ScrollView effects using GeometryReader Layout and geometry: Wrap up	550
Project 13: Screenable Screenable: Setting up Introduction to FileDocument Custom rendering with Canvas Loading files from your app bundle Adding images with drag and drop Colors and gradients Adding shadows	594

Special effects in SwiftUI: blurs, blending, and more Animating simple shapes with animatableData

Animating complex shapes with AnimatablePair Creating a spirograph with SwiftUI

Drawing: Wrap up

Project 14: Shooting Gallery Shooting Gallery: Setting up Creating the game world Creating a custom node Click, click, bang! Adding some polish Shooting Gallery: Wrap up	664
Project 15: Accessibility	694
Accessibility: Introduction Identifying views with useful labels Hiding and grouping accessibility data Reading the value of controls Accessibility: Wrap up	
Project 16: Bookworm	709
Bookworm: Setting up Entities and attributes	
Creating and querying data	
Watching external objects Adding some final touches	
Bookworm: Wrap up	
Project 17: Match Three	737
Match Three: Setting up A grid of balls	
Matching colors	
Making room for more Tracking score	
A puff of smoke	
Match Three: Wrap up	
Project 18: SwiftData	768
SwiftData: Introduction Editing SwiftData model objects	
Filtering @Query using Predicate	
Dynamically sorting and filtering @Query with SwiftUI	

Exporting the finished product Screenable: Wrap up

Relationships with SwiftData, SwiftUI, and @Query Syncing SwiftData with CloudKit SwiftData: Wrap up

Afterword 794