



Address: WsCube Tech, Laxmi Tower, Bhaskar Circle, Jodhpur, Rajasthan, India

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Flutter App Development Course Module

1. Introduction

- Introduction
- What is Flutter
- Flutter Architecture
- How Flutter and Dart code Compiled to Native Apps
- Flutter Versions
- macOS Setup
- macOS Development Environment
- Windows Setup
- Windows Development Environment
- Flutter & Material Design
- Flutter Alternatives

2. Flutter Basics

- Introduction
- Creating a New Project
- An Overview of the Generated Files & Folders
- Dart Basics
- Dart Fundamentals
- Building an App from Scratch
- Running the App on an Emulator
- Class Constructors & Named Arguments
- First Summary & Additional Syntax
- Building a Widget Tree
- Visible (Input / Output) & Invisible (Layout / Control) Widgets
- Adding Layout Widgets
- Widget Basics
- Connecting Functions & Buttons
- Anonymous Functions

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- Updating Widget Data (Or: Using StatelessWidget Incorrectly)
- Understanding Lists
- Updating Correctly with Stateful Widgets
- Stateful & Stateless Widgets
- Using Private Properties
- Creating a New, Custom Widget
- First Styling & Layout Steps
- Enums & Multiple Constructors
- Passing Callback Functions Around
- Introducing Maps
- Mapping Lists to Widgets
- final vs const
- Advanced Flutter & Dart Basics
- Introducing "if" Statements
- [DART DEEP DIVE] More on "if" Statements
- [DART DEEP DIVE] The "null" Value
- Outputting Widgets Conditionally
- Splitting the App into Widgets
- Calculating a Total Score
- Getters & "else-if"
- Resetting the Quiz

3. Running Apps on Different Devices and Debugging Apps

- Module Introduction
- Running the App on a Real Android Device
- Running the App on an iOS Emulator
- Running the App on a Real iOS Device
- Working with the Emulators / Using the Emulators
- Understanding Error Messages & Fixing Errors
- Using the Debugger
- Getting Started with the Dart DevTools
- Understanding the Repaint Rainbow

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- Wrapping up the Dart DevTools

4. Widgets, Styling, Adding Logic - Building a Real App [PERSONAL EXPENSES APP]

- Introduction
- An Overview of the Core Flutter Widgets
- Combining Widgets
- Understanding Column Alignment
- Columns & Rows
- Not a Widget: Adding a Transaction Model & Transaction Data
- Mapping Data into Widgets
- Building a Custom List Item
- Styling a Container
- Styling Text
- Styling Time!
- Containers vs Columns Vs Rows
- Using String Interpolation
- Installing External Packages & Formatting Dates
- DateFormat Patterns
- Adding Text Input Widgets (TextField)
- Fetching User Input
- Splitting the App into Widgets
- Connecting Widgets & Managing Data / State
- Adding User Transactions to the List
- Making the List Scrollable!
- Working with ListViews
- Lists, Scrolling & Text Input
- Further Input & Output Styling and Configuration
- Adding AppBar Buttons & Floating Action Buttons
- Showing a Modal Bottom Sheet
- Improving & Styling the Modal Bottom Sheet
- Configuring & Using Themes

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- Custom Fonts & Working with Text Themes
- Theming
- Adding Images to the App
- Planning the Chart Widget
- Looping Through Lists
- More on "for" Loops
- Deriving Recent Transactions
- Creating Bars for our Chart
- Populating the Chart with Values
- Finishing the Chart Bars
- Flexible & Expanded: Deep Dive
- Adding a ListTile Widget
- Improving the Overall Chart
- Getting Started with Date Selection
- Showing a DatePicker
- Adding Transactions with a Date
- Deleting Transactions & Using IconButton

5. Responsive & Adaptive User Interfaces and Apps

- Introduction
- What does "Responsive" and "Adaptive" Mean?
- Calculating Sizes Dynamically
- Working with the "textScaleFactor"
- Using the LayoutBuilder Widget
- Responsiveness
- Controlling the Device Orientation
- Rendering Alternative Landscape Content – 1
- Finishing Landscape Mode
- Showing Different Content Based on Device Orientation
- Respecting the Softkeyboard Insets
- Using the Device Size in Conditions

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- Managing the MediaQuery Object
- Checking the Device Platform
- Using Cupertino (iOS) Widgets
- Using the SafeArea
- More Cupertino Styles
- Using Cupertino Buttons
- Creating Custom Adaptive Widgets
- Adaptive Widgets

6. Widget & Flutter Internals - Deep Dive

- Introduction
- The Problem at Hand
- Widget Tree & Element Tree - What, Why and How?
- How Flutter Rebuilds & Repaints the Screen
- How Flutter Executes build ()
- Using "const" Widgets & Constructors
- Widgets, Elements, build ()
- Writing Good Code
- Extracting Widgets
- Using Builder Methods
- Understanding the Widget Lifecycle
- Calling super.initState() etc.
- Understanding the App Lifecycle
- Understanding Context
- A Problem with Lists & Stateful Widgets
- Understanding the Problem Root
- Using Keys
- Keys, Lists, Stateful Widgets

7. Navigation & Multiple Screens [APP]

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- Planning the App
- Starting with The App - Adding Base Data
- Creating a Grid & Working with Linear Gradients
- Registering a Screen as the Main Screen
- Styling & Theming
- Navigating to a New Page
- Passing Data via the Constructor
- Using Named Routes & Passing Data with Named Routes
- Screens & Navigation
- Diving Deeper into Named Routes
- Adding a Meal Model & Data
- Selecting Meals for a Chosen Category
- Displaying Recipe Items & Using Network Images
- Finishing the Meal List Item
- Navigating to the Meal Detail Page
- onGenerateRoute & onUnknownRoute
- Finishing the Meal Detail Page
- Adding a TabBar to the Appbar
- Adding a Bottom TabBar
- Adding a Custom Drawer
- Adding Links to the Drawer
- Tabs & Drawers!
- Replacing Pages (Instead of Pushing)
- Popping Pages & Passing Data Back
- Replacing, Popping & Data
- Adding Filter Switches
- Adding Filtering Logic
- Adding a "Mark as Favorite" Feature

8. State Management [APP]

- Module Introduction
- Planning the App

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- Defining a Data Model
- Working on the "Products" Grid & Item Widgets
- Styling & Theming the App
- Adding Navigation to the App
- Why State Management? And what is "State" and "State Management"?
- Understanding the "Provider" Package & Approach
- Working with Providers & Listeners
- Inheritance ("extends") vs Mixins ("with")
- Providing non-Objects
- Listening in Different Places & Ways
- State, State Management & The Provider Package/ Approach
- Using Nested Models & Providers
- Exploring Alternative Provider Syntaxes
- Using "Consumer" instead of "Provider.of"
- Local State Vs App-wide State
- Adding Shopping Cart Data
- More on State Management & The Provider Package
- Working with Multiple Providers
- Connecting the Cart Provider
- Working on the Shopping Cart & Displaying a Total
- Displaying a List of Cart Items
- Making Cart Items Dismissible
- Adding Product Detail Data
- Providing an Orders Object
- Adding Orders
- Adding an Orders Screen
- Using a Side Drawer
- Making Orders Expandable & Stateful Widgets Vs Providers

9. Working with User Input & Forms [SHOP APP]

- Module Introduction
- Snackbars & Undoing "Add to Cart" Actions

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- Showing Alert Dialogs
- Adding a "Manage Products" Page
- "Edit Product" Screen & A Problem
- Using Forms & Working with Form Inputs
- ListView or Column
- Managing Form Input Focus
- Multiline Inputs & Disposing Objects
- Adding an Image Preview
- Image Input & Image Preview
- Submitting Forms
- Validating User Input
- Adding Validation to All Inputs
- Saving New Products
- Time to Update Products!
- Allowing Users to Delete Products
- Wrap Up
- Useful Resources & Links

10. Sending Http Requests [APP]

- Module Introduction
- On-Device Vs Web Storage
- How to Connect Flutter to a Database?
- Preparing Our Backend
- How to Send Http Requests
- Sending POST Requests
- Working with Futures in Dart
- Futures & Async Code
- Http Requests & Futures
- Showing a Loading Indicator
- Handling Errors Gracefully
- Working with "async" & "await"
- Fetching Data, initState & "of(context)"

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- How to Transform Fetched Data
- Implementing Pull-to-Refresh
- Updating Data via PATCH Requests
- Utilizing Optimistic Updating
- Creating Custom Exceptions & More Error Handling
- A Challenge for You!
- Updating the "Favorite" Status Optimistically
- Storing Orders in the Web
- Fetching Orders & Fixing an Issue
- Using the "FutureBuilder" Widget & Improving the Code

11. Adding User Authentication [APP]

- Introduction
- How Authentication Works
- Prepare Backend
- Adding the Auth Screen
- Adding User Signup
- Allowing Users to Log In
- Handling Authentication Errors
- Managing the Auth Token Locally (in the App)
- Using the "ProxyProvider" and Attaching the Token to Outgoing Http Requests
- Adding the Token to All Requests
- Connecting the "Favorite" Status to Users
- Attaching Products to Users & Filtering by Creator
- Attaching Orders to Users
- Adding a Logout Functionality
- Automatically Logging Users Out (After Some Time)
- Automatically Logging Users In

12. Adding Animations [APP]

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- Animations from Scratch (Completely Manually Controlled)
- Using the "AnimatedBuilder" Widget
- Working with the "AnimatedContainer"
- More Built-in Animation & Transition Widgets
- Fading Loaded Images in (And Showing a Placeholder)
- Adding a "Hero" Transition
- Working with Slivers
- Practice: Animating Order Boxes
- A Fix for the Latest Version of Flutter
- Implementing Custom Route Transitions

13. Using Native Device Features (Camera, Maps, Location, ...) [APP]

- Introduction
- Planning the App
- PlaceList & Place Provider Setup
- Adding the "Add Place" Screen & An Image Input
- Using Image Picker & The Device Camera
- Storing the Image on the Filesystem (on the Device)
- Managing Data & Images via the Provider Package
- Handling Errors
- Testing on Real Devices
- Preparing SQLite
- Storing & Fetching Data with SQLite
- Adding a Location Input & The "location" Package
- Fetching the User Coordinates
- Displaying a Static Map Snapshot
- Rendering a Dynamic Map (via Google Maps)
- Allowing Users to Pick a Location on the Map
- Storing the Location in SQLite
- Adding a "Place Detail" Screen & Opening the Map in "readonly" Mode

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14. Firebase, Image Upload, Push Notifications - Building a Chat App

- Introduction
- What is Firebase?
- Creating a New App
- Getting Started with Firebase
- Important: Flutter Firebase Versions
- Getting Started with Flutter & the Firebase SDK
- Adding "GoogleServices-Info.plist" correctly to iOS
- Rendering Stream Data with StreamBuilder
- Adding Data
- A Basic Authentication Screen
- Adding an App Theme
- Creating an Authentication Form
- Connecting Auth Form & Auth Screen
- Adding the firebase_auth Package
- Implementing Authentication
- Storing Extra User Data
- Finishing Authentication & Logout
- Adding Firebase Security Rules
- Listening to Chat Messages
- Sending & Ordering Chat Messages
- Creating a Basic Chat Bubble Widget
- Improving the Chat Bubbles
- Testing on Multiple Devices
- Displaying User Names
- ImagePicker: Latest Version
- Adding an Image Picker
- Preparing File Upload & Validating Images
- Uploading Images
- Improving Image Upload
- Running on a Real iOS Device
- Displaying User Images

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- How Push Notifications Work
- An Introduction to Firebase Cloud Messaging
- Android & Push Notifications
- iOS & Push Notifications
- Handling Push Notifications
- Getting Started with Firebase Cloud Functions
- Setting a Firestore Trigger
- Sending Automated Push Notifications

15. Running Native Swift, ObjectiveC, Java or Kotlin Code

- Module Introduction
- Using a Proper Project Setup
- Sending a Method Call from Flutter
- Running Android Code
- Running iOS Code

16. Publishing to the App Stores

- Module Introduction
- Preparing the Code
- Preparing the App Configuration
- Preparing Third-Party Services
- Adding Icons & Splash Screens
- Publishing Android Apps
- Publishing iOS Apps

17. Roundup

- ✓ Resume Building
- ✓ Interview Preparation



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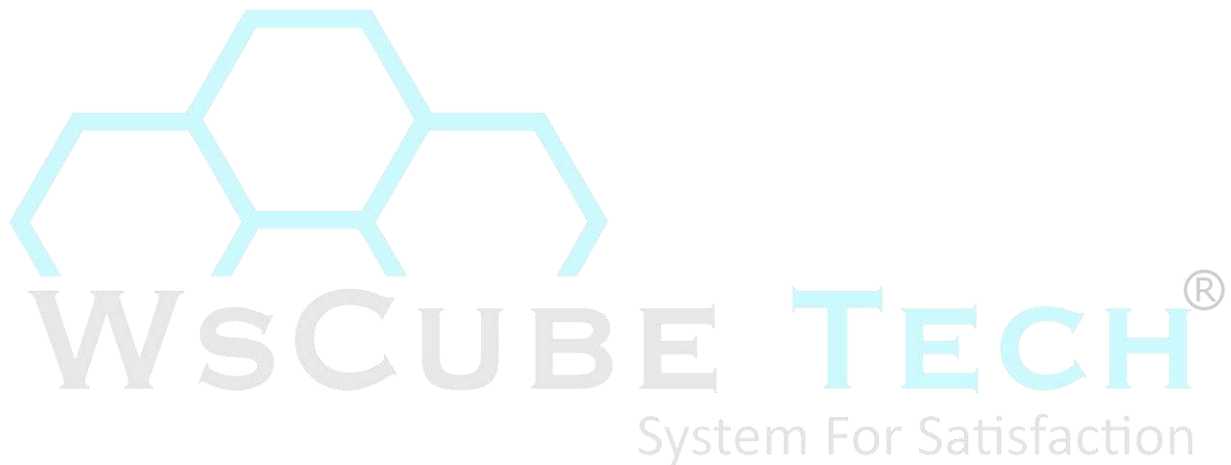


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- ✓ **NEW TOPICS:** Since each new version of Android/iOS has new features, we keep extra time for adding custom topics in every batch. You can request any Flutter Basics Topic.



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