

Flutter Application Development

FR-101

Duration: 4 days; Instructor-led

Time: 9:00 AM – 5:00 PM

ABOUT THIS COURSE

This course is an introduction to Flutter application development. It covers how to create and compile projects using VSCode or Android Studio, basics of the Dart language and uploading the completed app on the Apple App Store and the Google Play Store. During this course, you will create a reasonably complex Flutter application. In the process, you will learn about widgets, animation, Material design, data persistence, API integration, authorization and remote storage.

OBJECTIVES

Upon completion of this program, participants should be able to:

- Create a reasonably complex Flutter application, using widgets, animation, Material design, data persistence, API integration, Authorization and remote storage.

PREREQUISITES

Knowledge of a programming language is recommended.

AUDIENCE

This program is targeted for experienced developers with no programming experience in Android and iOS Development

SYSTEM REQUIREMENTS

- A Mac computer running macOS 10.15 Catalina or 11.0 Big Sur OR
- A Windows computer running Windows 10 or higher
- VSCode 1.54.x or higher
- Android Studio 4.1.x or higher
- Xcode 12.x or higher

PROGRAMS YOU WILL WRITE

- Startup Name Generator - a simple app that generates proposed names for a startup company.
- Shrine - an e-commerce app that sells clothing and home goods.
- An app that uses SQLite to persist data
- An app integrated with Google Maps
- An app integrated with Firebase

COURSE CONTENTS

Module 1: A Dart Tour

- Hello World
- Variables
- Control flow statements
- Functions
- Comments

- Imports
- Classes
- Inheritance
- Mixins
- Interfaces and abstract classes
- Async
- Exceptions

Module 2: Basic Flutter Layout concepts

- Row and column classes
- Axis size and alignment
- Flexible widget
- Expanded widget
- Sizable widget
- Spacer widget
- Text widget
- Icon widget
- Image widget
- Putting it all together

Module 3: Implicit Animations

- What are implicit animations?
- Example: Fade in text effects
- Example: Shape-shifting effect
- Using animation curves

Module 4: Write Your First Flutter App, PART 1

- Create the starter Flutter app
- Use an external package
- Add a stateful widget
- Create an infinite scrolling ListView

Module 5: Write Your First Flutter App, Part 2

- Add icons to the list
- Add interactivity
- Navigate to a new screen
- Change the UI using themes

Module 6: Building Beautiful UIs With Flutter (SELF-PACED)

- Start a new Flutter project
- Build the main user interface
- Add a UI for composing messages
- Debug your app
- Add a UI for displaying messages
- Animate your app
- Apply finishing touches

Module 7: Material Components Basics

- Introduction
- Add Textfield widgets
- Add buttons

Module 8: Material Structure And Layout

- Introduction
- Add a top app bar
- Add a card in a grid
- Make a card collection

Module 9: Material Theming with Color, Shape, Elevation, and Type

- Introduction
- Change the colors
- Modify typography and label styles
- Adjust elevation
- Add Shape
- Change the layout
- Try another theme

Module 10: Material Advanced Components

- Add the backdrop menu
- Add a shape
- Add motion
- Add a menu on the back layer
- Add a branded icon

Module 11: Persist Data With SQLite

- Add the dependencies.
- Define the Dog data model.
- Open the database.
- Create the dogs table.
- Insert a Dog into the database.
- Retrieve the list of dogs.
- Update a Dog in the database.
- Delete a Dog from the database.

Module 12: API Integration - Adding Google Maps to a Flutter app

- Getting Started
- Adding Google Maps to the app
- Put Google on the Map

Module 13: Authorization Services - Get to know Firebase for Flutter

- Create and set up a Firebase project
- Firebase configuration
- Add user sign in
- Write messages to Cloud Firestore
- Read messages
- Setup basic security rules

Module 14: Build and release an Android app

- Adding a launcher icon
- Enabling Material Components
- Signing the app

- Shrinking your code with R8
- Reviewing the app manifest
- Reviewing the build configuration
- Building the app for release
- Publishing to the Google Play Store
- Updating the app's version number

Module 15: Build and release an iOS app

- Preliminaries
- Register your app on App Store Connect
- Register a bundle ID
- Create an application record on App Store Connect
- Review Xcode Project settings
- Updating the app's deployment version
- Updating the app's version number
- Add an app icon
- Create a build archive with Xcode
- Release your app on TestFlight
- Release your app to the App Store