

Flutter Application Development: UI, Services and Device Integration

Widgets, state, forms, authentication, animations and platform features

FA-0765

Software Development

Introduction

Explore a Flutter application from basic widgets and debugging through responsive interfaces, service communication and device integration. The course progresses across the UI, state, interaction and platform concerns involved in building an app.

Practical depth and delivery time depend on the chosen lab platform. Device integration and publishing use prepared examples; store release depends on platform accounts, signing and review requirements.

Learning outcomes

- Use Flutter widgets, styling and application logic in a small example.
- Debug application behaviour and adapt layouts to different screens.
- Manage navigation and state across screens.
- Work with forms, HTTP requests, authentication and animations.
- Explain camera/map integrations and selected native-platform code calls.
- Describe the preparation needed to publish an application.

Prerequisites

Basic programming familiarity and a compatible Flutter development environment. The course begins with Flutter basics, not a complete general-programming track.

A prepared device or emulator and authorised sample service access. Native integration and publishing examples require platform-specific SDKs and permissions; iOS builds require the appropriate macOS/Xcode environment.

Training outline

1. Module 1 — Foundations and debugging

- Introduction to Flutter and application basics.
- Debugging tools and investigation of small examples.
- Widgets, styling and application logic.

2. Module 2 — Layout, navigation and state

- Responsive and adaptive interfaces.
- Widget and Flutter internals at an introductory level.
- Navigation and multiple screens.
- State management and its relationship to the interface.

3. Module 3 — Interaction and services

- User input and forms.
- Send HTTP requests and handle response or failure states.
- User-authentication concepts and a selected prepared example.
- Animations in the application interface.

4. Module 4 — Device integration and publishing

- Use selected device features such as the camera or maps, with compatible plugins and required permissions.
- Run native device code through appropriate platform integration mechanisms; platform-specific support varies.
- Publishing overview: builds, signing, account requirements and the relevant distribution process.
- Conclude with a review of the application and remaining implementation decisions.

