



Week 4: Introduction to Flutter

Objective:

Gain an understanding of Flutter, its benefits, and get started with setting up the Flutter SDK. Learn to create simple UI elements using Flutter widgets.

Outcomes

By the end of this session, learners should be able to:

- Explain what Flutter is and its benefits for cross-platform development.
 - Set up the Flutter SDK and development environment.
 - Build simple stateless widgets to create a basic UI.
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Duration: 105 minutes

Lesson Outline:

1. What is Flutter? (20 minutes)

Introduction to Flutter:

- **What Flutter is:** A framework for building natively compiled applications for mobile, web, and desktop from a single codebase.
- **How it works:** The architecture of Flutter — from widgets to the rendering engine.



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- **Real-Time Examples:** Show how Flutter helps in rapid prototyping and beautiful UIs.

Benefits of Flutter:

- **Cross-Platform Development:** One codebase for Android, iOS, and even web applications.
- **Hot Reload:** See the changes instantly without restarting the app.
- **Rich Widget Set:** Pre-built, customizable widgets that save time.

Real-World Applications:

- Discuss popular apps like Google Ads, Reflectly, Alibaba, etc., that are built using Flutter.

2. Setting Up Flutter (30 minutes)

Installing Flutter SDK:

- Walk learners through downloading and installing the Flutter SDK from the official website.

Setting Up the IDE:

- **Installing Android Studio or Visual Studio Code:** Which IDE should they use and why?
- **Flutter Plugin:** Install the Flutter plugin to work with Flutter in your chosen IDE.

Verification:

- Learners run `flutter doctor` to check if their installation is set up correctly.



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Hands-on Activity:

- Guide learners through installing the Flutter SDK and setting up the IDE.
 - Ensure learners can verify the installation successfully using `flutter doctor`.
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3. Getting Started with Flutter Widgets (45 minutes)

Understanding Widgets:

- **What are Widgets?** Everything in Flutter is a widget. UI elements are all widgets.
- **Types of Widgets:** Discuss stateless vs. stateful widgets and their use cases.

Building Simple Stateless Widgets:

- **Stateless Widgets:** Explore basic widgets like `Text`, `Button`, `Image`, and `Container`.
- **Creating a Simple App:** Show how to create a Flutter app that uses these basic widgets.

Hands-on Activity:

- **Step-by-Step Coding:**
 1. Build a basic Flutter app with a `Text` widget that says "Hello, Flutter!"
 2. Add a `Button` that prints a message to the console when pressed.
 3. Display an image from the internet or local assets using an `Image` widget.
- **Engagement:**

Encourage learners to use AI tools like **ChatGPT** or **Gemini** to assist in their



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coding tasks, search for documentation, or even troubleshoot common errors they might encounter during the activity.

4. Recap and Q&A (10 minutes)

Recap Key Points:

- **Summary:** Flutter's architecture, benefits, setting up the development environment, and building simple stateless widgets.

Q&A Session:

- Open the floor for learners to ask questions, clarify doubts, and get additional support for any tricky concepts or tasks.

Assignment:

- Learners will complete a set of exercises on the **LMS**:
 - **Install Flutter SDK** and set up the environment.
 - **Build a basic app** using the widgets covered in class (Text, Button, Image).