Week 1: Getting Started with Flutter Development

CS991 Mobile App Development

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Overview

In this first lab session, you will set up your development environment, explore Flutter's basics, and take your first steps toward understanding mobile app development. By the end of this session, you'll have created a sample project and begun investigating its functionality.

Task Instructions

1. Understanding Mobile App Design

In small groups, think about a mobile app you've used in the past and reflect on your experience:

- What did you enjoy about it?
- What aspects frustrated you or made it less enjoyable?
- Propose three improvements for the app. For each improvement:
  - Identify what needs to change in the app.
  - Consider the elements (e.g., design, interactivity, navigation) that would need adjustment to implement your ideas.

This reflective exercise will help you begin to think critically about app design and user experience.

2. Setting Up Your Development Environment

Before diving into Flutter, ensure your tools are properly configured. Follow these steps:

1. **Configure VS Code**
   - Locate and rune both VS Code and Android Studio to initialise their setups.
   - Run Will's Flutter setup script (check MyPlace for the script).
   - Install the required extensions for Flutter and Dart in VS Code.
     - Flutter Extension Documentation.
     - Dart Extension Documentation.
2. **Create an Android Virtual Device (AVD)**
   - Open Android Studio and use the Virtual Device Manager to create an emulator.
   - Follow the official guide here: Create and Manage Virtual Devices.
   - I recommend creating a medium phone and using default settings
3. **Run Flutter Doctor**
   - In your terminal, run `flutter doctor` to ensure all tools are installed correctly.
   - Address any issues listed to get your environment ready for Flutter development.

3. Creating Your First Flutter Project

1. Open VS Code and create a new Flutter project.
   - Run the `Flutter: New Project` command in the Command Palette.
   - Select a project name and directory, then let Flutter scaffold the project for you.
2. Once the project is created, run it on your newly configured Android Virtual Device.
   - Use the `flutter run` command in the terminal or the play button in VS Code.
   - Verify that the app launches on your emulator. You should see a simple counter app.

4. Exploring and Understanding the Code

Now that your sample project is running, let's dive into the code:

1. Open the `lib/main.dart` file in your project.
   - This is the main entry point for your app and contains the default counter app logic.
2. Investigate the code and identify the part responsible for the button that increases the counter.
   - Look for:
     - The `FloatingActionButton` widget that creates the button.
     - The `setState` method, which updates the counter value.

Here's a hint: The `onPressed` property of the `FloatingActionButton` is where the counter increment logic resides. For more details, refer to the documentation: FloatingActionButton Documentation.

Additional Notes

- Use this opportunity to familiarize yourself with the Flutter development process.
- Don't hesitate to ask for help if you encounter issues during setup.

This foundational week is designed to prepare you for building interactive and dynamic Flutter apps. Let's get started!