***Mobile Application Development Lab***

***CSL-341***

***Lab Journal***



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# Lab 1 – Flutter Introduction

## Objectives:

Installation of Flutter and setting up the environment

## Tools Used:

VS Code

### Submission Date:

## Evaluation Signatures of Lab Instructor

# Tasks

1. Write the main steps involved in Flutter installation.
2. How you connect your mobile phone in replacement of Virtual Device? Write step by step procedure.
3. In VS Code, which extension you install for flutter and Dart?
4. How can we create a flutter project?
5. What is the advantage of setting path in environment variables?

**1. Main Steps Involved in Flutter Installation**

1. **Download Flutter SDK**: Get it from the official Flutter website.
2. **Extract Flutter**: Unzip the Flutter SDK into a preferred location.
3. **Set Environment Variables**: Add the flutter/bin directory to the system’s path.
4. **Install Dependencies**: Run flutter doctor in Command Prompt to check missing dependencies. Install any missing tools like Git, Android SDK, etc.
5. **Install Android Studio (Optional)**: Install Android Studio and set up the Android SDK.
6. **Install VS Code (Optional)**: Install VS Code and add the Flutter and Dart extensions.
7. **Enable USB Debugging on Mobile**: If using a real device, enable Developer Mode & USB Debugging.

**2. Steps to Connect a Mobile Phone Instead of a Virtual Device**

To use a real device for Flutter development instead of an emulator:

1. **Enable Developer Mode on the Phone**
   * Go to **Settings** > **About Phone** > Tap **Build Number** 7 times to enable Developer Mode.
2. **Enable USB Debugging**
   * In Developer Options, turn on **USB Debugging** and **Allow USB Installation** (if needed).
3. **Connect the Phone to the PC**
   * Use a USB cable to connect the mobile phone to the computer.
4. **Verify Connection**
   * Run the command:

flutter devices

This should list your device.

1. **Run the App on the Phone**
   * Use the command:

flutter run

It will launch the app on your real device.

**3. Extensions to Install in VS Code for Flutter and Dart**

To develop Flutter apps in VS Code, install the following extensions:

1. **Flutter Extension**
   * Adds Flutter development tools, widget snippets, debugging, etc.
2. **Dart Extension**
   * Provides Dart language support, linting, and debugging capabilities.

To install:

1. Open **VS Code**.
2. Go to **Extensions (Ctrl + Shift + X)**.
3. Search for **Flutter** and install it.
4. Search for **Dart** and install it.

**4. How to Create a Flutter Project?**

To create a new Flutter project:

1. **Using VS Code**
   * Open **Command Palette** (Ctrl + Shift + P).
   * Select **Flutter: New Project**.
   * Choose **Application** and enter the project name.
   * Select the folder to create the project.
   * Wait for Flutter to set up the project.
2. **Using Command Line**
   * Open a terminal and run:

flutter create my\_project

cd my\_project

flutter run

**5. Advantage of Setting Path in Environment Variables**

Setting the Flutter PATH in environment variables allows:

1. **Global Access**: You can run Flutter commands (flutter doctor, flutter run) from any location in the terminal.
2. **Easy Updates**: No need to specify the full path of the Flutter SDK each time.
3. **Smooth Integration**: Works seamlessly with VS Code and Android Studio.
4. **Better Development Workflow**: Avoids manual navigation to the Flutter SDK directory.