ELSEWEDY UNIVERSITY OF TECHNOLOGY
- POLYTECHNIC OF EGYPT -

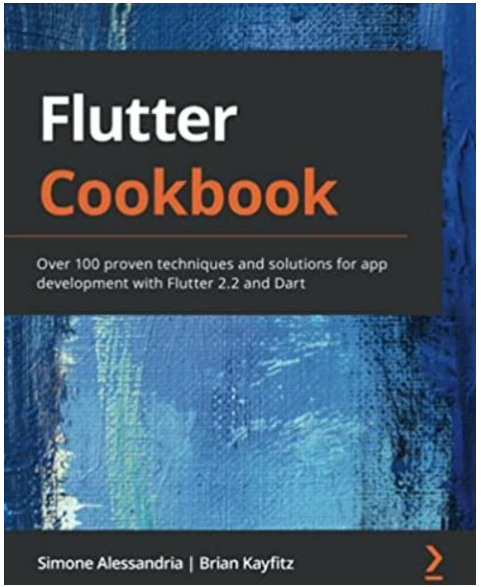
CET215: Mobile Application Development

Lecture 1: Overview

© Spring 2025– **Dr. Ahmed Elrefaiy**
Ahmed.elrefai@sut.edu.eg
Linkedin: ahmed-Elrefaiy

References

- **Flutter Complete Reference:** Create beautiful, fast and native apps for any device
- **Flutter Cookbook**



LMS

- Course Materials: Lectures and Lab Assignments
- Online Quizzes
- Project Submission
- Lab Assignment Submission

Grades

- Midterm: 15 Degree
- Activities
  - Project: 20 Degree
  - Quizzes (Practical/LMS): 20 Degree (6 quizzes, Inside lab, best 5)
  - Practical Assignments: 20 Degree (LMS + Discussion)
- Final Exam: 25 Degree

Introduction

- Mobile application development:
  - Creating software applications that run on mobile devices (smartphones, tablets).
- Existing Operating Systems:
  - IOS
    - Developed by Apple
    - iPhone, iPad
  - Android
    - Developed by Google

محلی

- Programming Languages for Each OS: (**Native** Languages)

OPERATING SYSTEM	PROGRAMMING LANGUAGES
iOS	Swift, Objective-C
Android	Kotlin, Java

Available Technologies for Mobile App Development

- **Native** Development:
  - Java, Kotlin for Android
  - Objective-C, Swift for IOS
- **Hybrid** Development:
  - Uses web technologies (HTML, CSS, JavaScript) wrapped in a native container
  - Use internal WebView to run the APP + Native plugins
  - Ex: Ionic, Cordova
- **Cross-Platform** Development:
  - Single codebase for multiple platforms
  - Compiled to native components
  - Ex: Flutter, React Native, Xamarin, .NET MAUI

Native VS Hybrid VS Cross-Platform

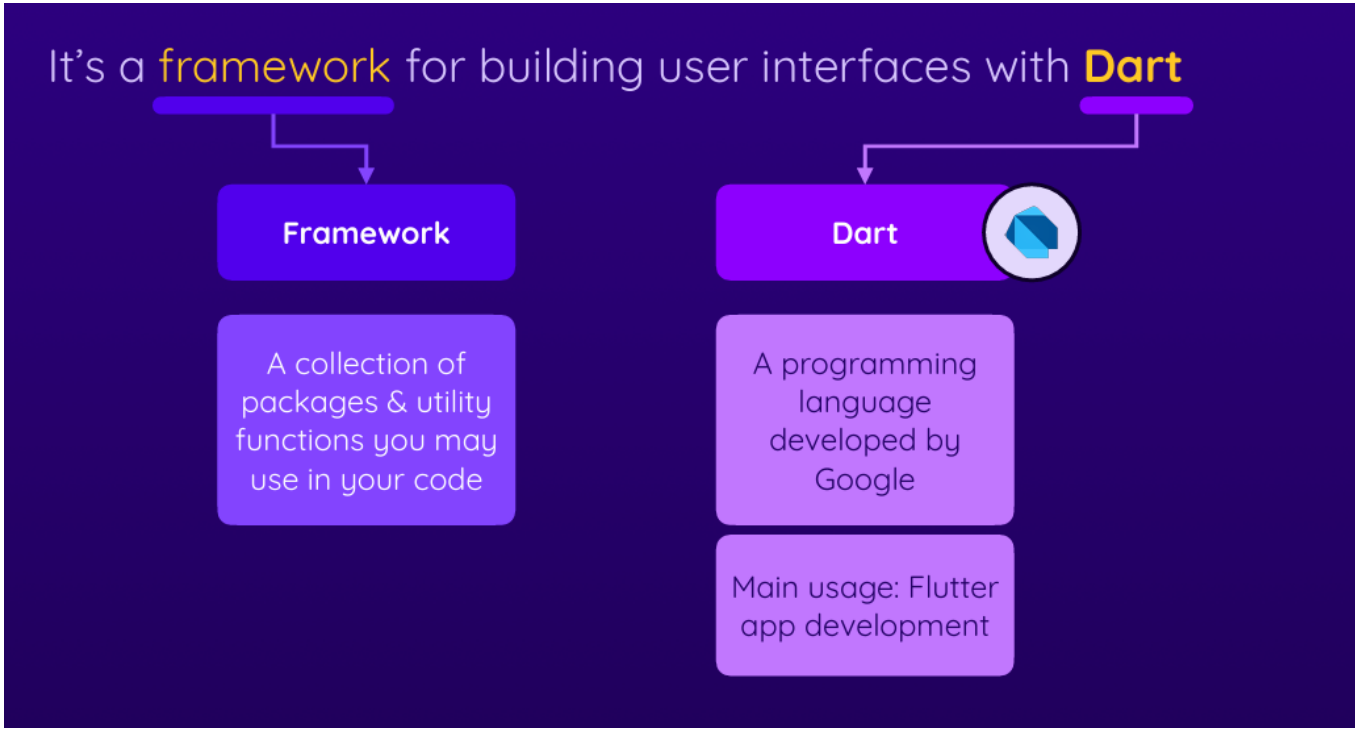
FEATURE	NATIVE	HYBRID	CROSS-PLATFORM
Performance	High	Moderate	High
Development Time	Long	Short	Moderate
Code Reusability	Low	High	High
Platform Support	Single platform	Web-based	Multi-platform
App Size	Small, optimized	Larger, includes extras	Often larger, native components
Examples	Swift, Kotlin	Ionic, Cordova	Flutter, React Native

Cross-Platform Trending Technologies

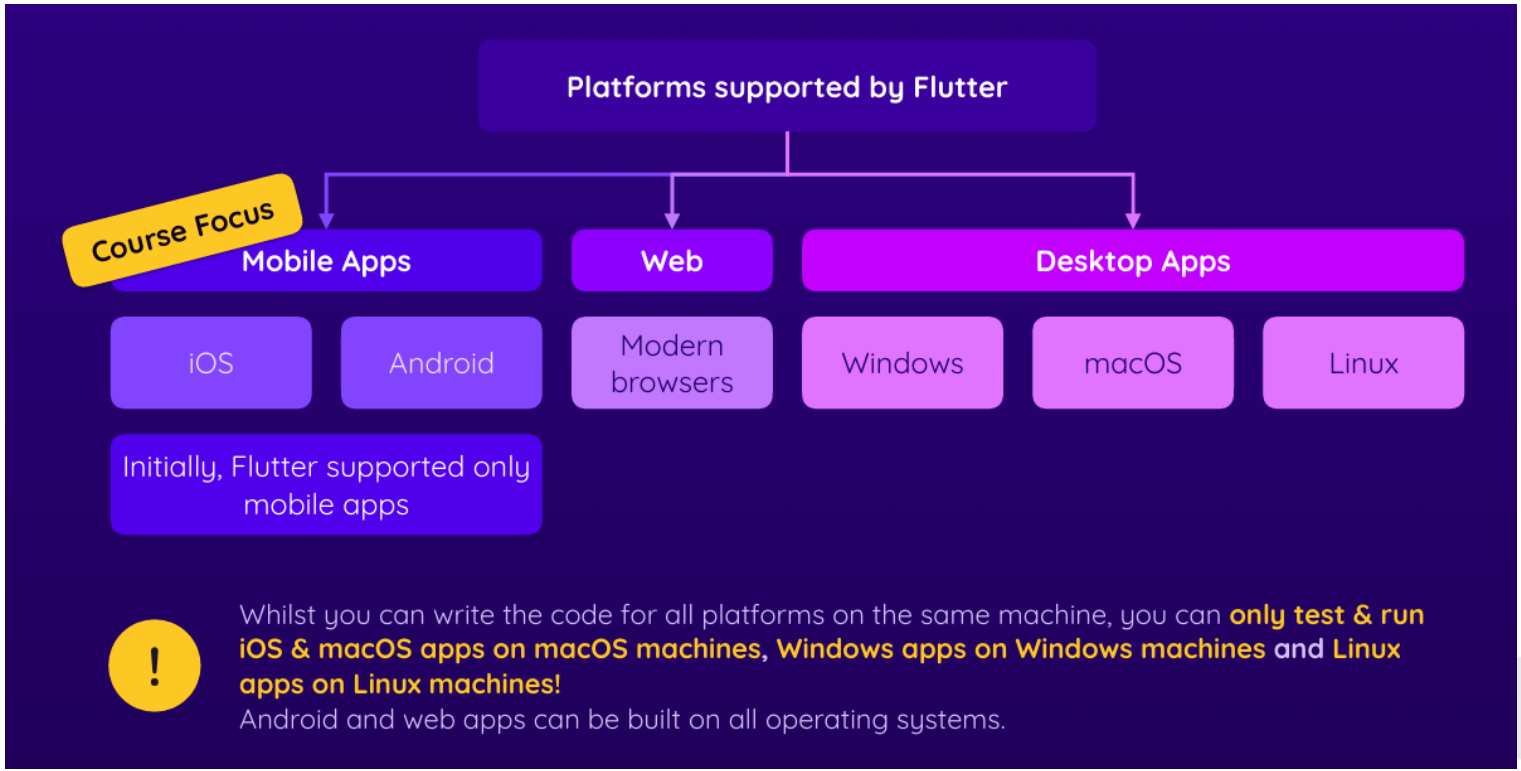
- **React Native**:
  - Best for web developers who know **JavaScript**
  - Apps feel more "native" but can be **slower**

- **Flutter**:
  - Great for custom designs (beautiful design)
  - **Faster** apps
  - Uses **Dart**, which is easy to learn

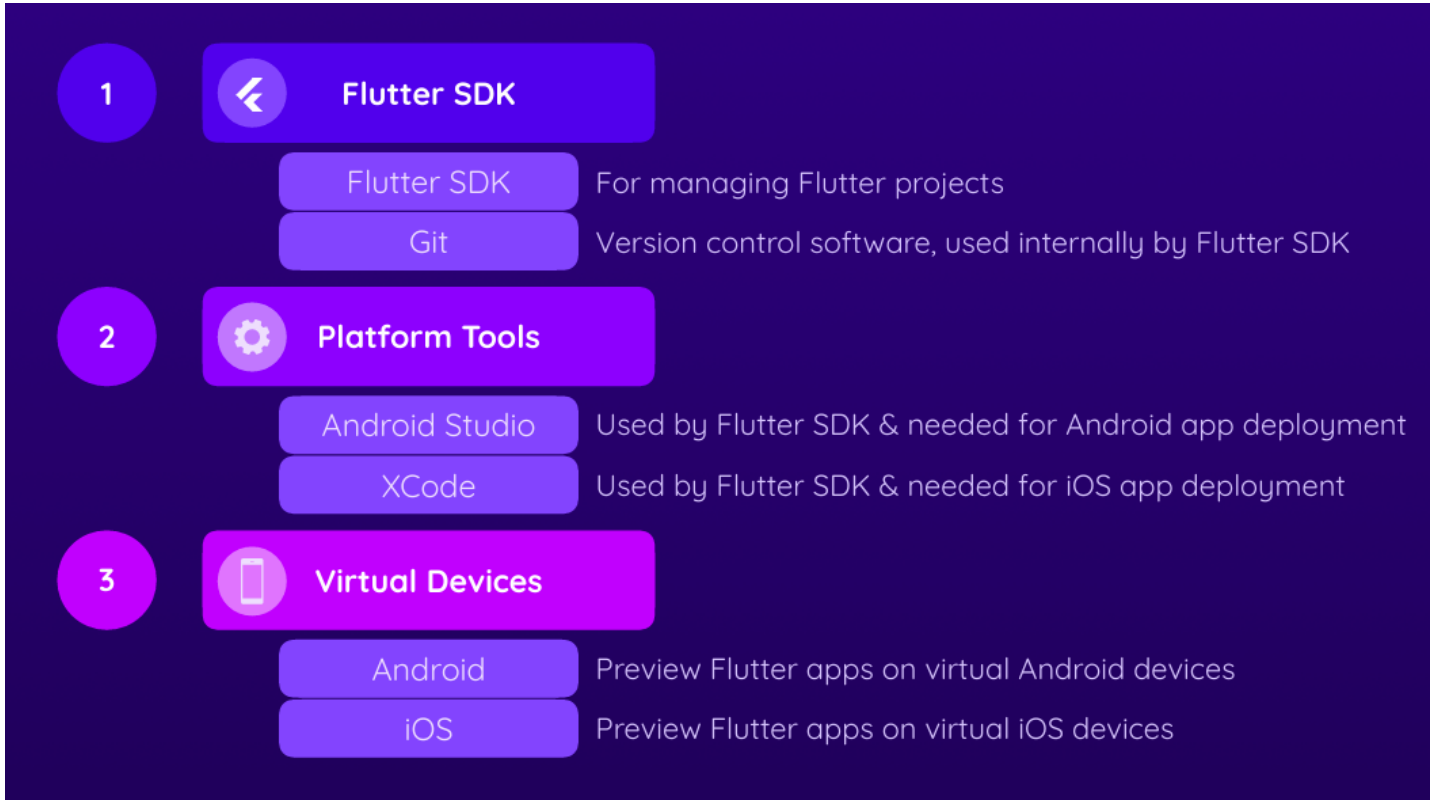
What is Flutter



What I need to install?



What I need to install?

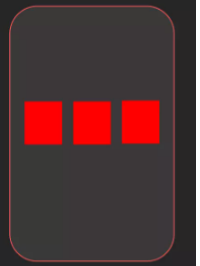


How Flutter Work?

Widgets Examples

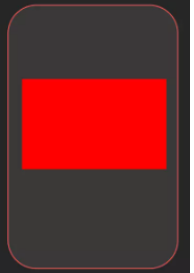
Container

A widget that provides a rectangular visual element for displaying other widgets.



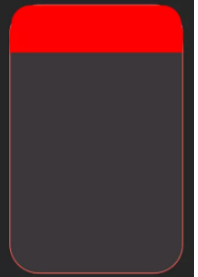
Image

A widget that displays an image on the screen



App Bar

A widget that provides a top app bar with navigation buttons and a title.

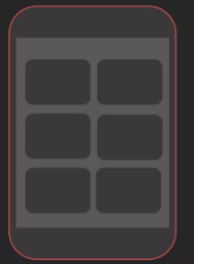


Text

A widget that displays a string of text on the screen.

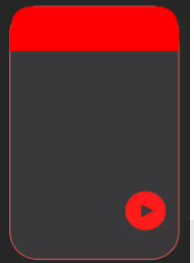
List View

A widget that displays a scrollable list of widgets.

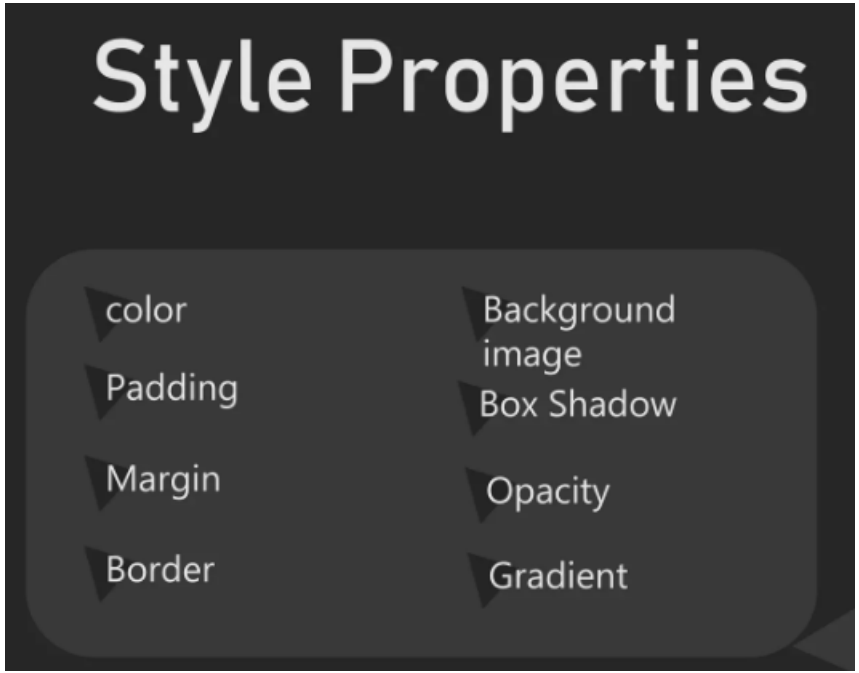


Floating Action Button

A widget that provides a floating action button for triggering a primary action in the app.



Widgets Can be Styled



What Next?

- 1 or 2 lectures: Overview on Dart Language + OOP
- Remaining Lectures: Flutter + APPs