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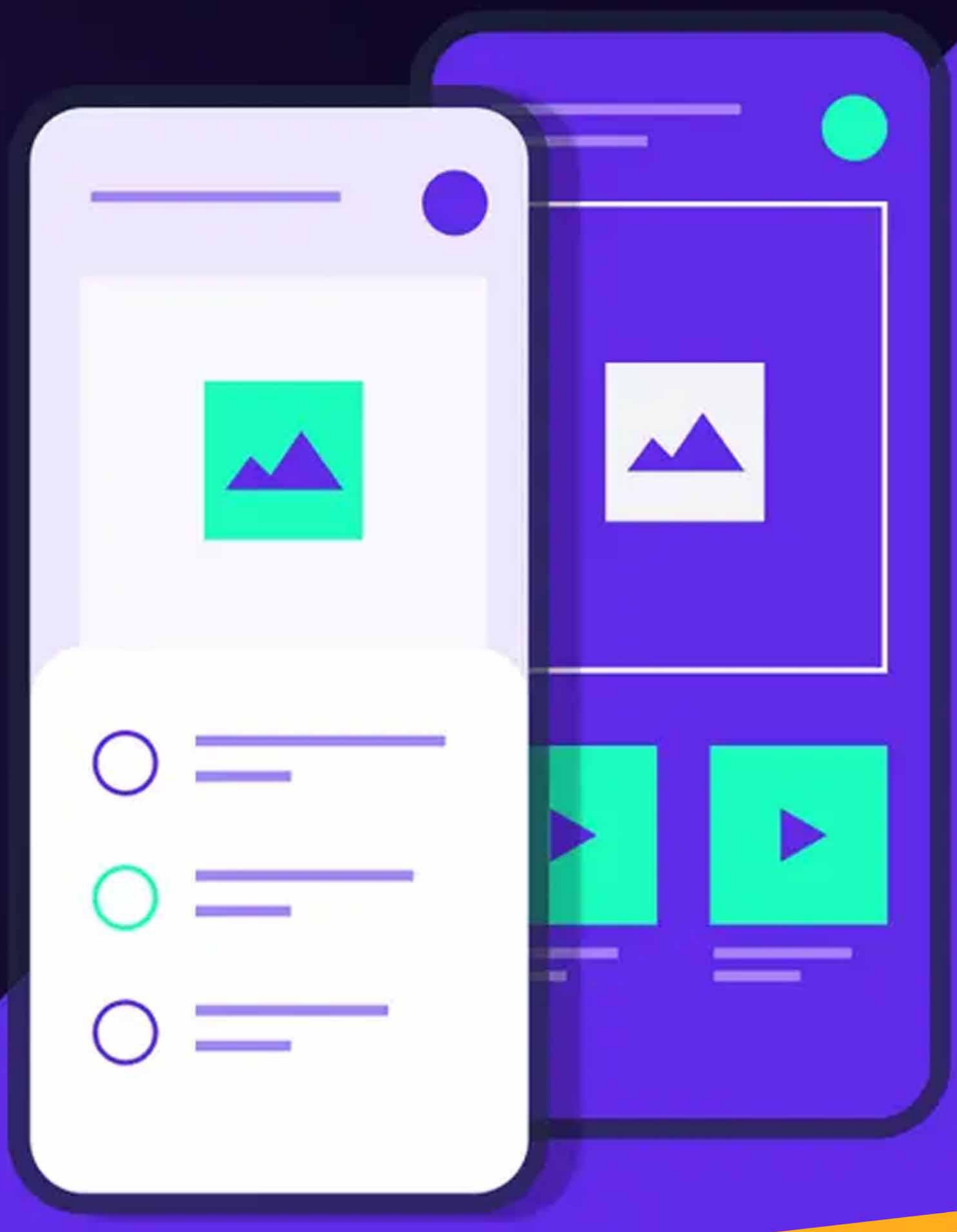
Tech Solutions Pvt. Ltd.



Flutter

@softcrayons

About Course

Flutter is Google's free and open-source UI framework for creating native mobile applications. Released in 2017, Flutter allows developers to build mobile applications with a single codebase and programming language. This capability makes building both iOS and Android apps simpler and faster.

FLUTTER

CURRICULUM

1 Overview

- What is Dart..?
- Dart Introduction
- Basic Language requirement for Dart

2 Environment

- Setting Up the Local Environment
- Using the Text Editor
- Installing the Dart SDK
- IDE Support

3 Syntax

- Your First Dart Code
- Execute a Dart Program
- Dart Command-Line Options
- Keywords in Dart
- Comments in Dart

4 **Basic Fundamentals**

- Data Types
- Variables
- Functions
- Operators
- Loops
- Decision Making
- Numbers
- String

5 **Implementation of OOPs**

- Classes
- Object
- Inheritance
- Interface

6 **Collection**

- Lists
- Map
- Generics
- Libraries & Packages

7 **INTRODUCTION TO FLUTTER**

Learn to set up a new Flutter project using Android Studio.
Understand the Widget tree and learn to use pre-made Flutter Widgets for user interface design.
Learn to incorporate Image and Text Widgets to create simple user interfaces.
Learn to incorporate App Icons for iOS and Android.
Learn how to add and load image assets to Flutter projects.
Run Flutter apps on iOS Simulator, Android Emulator and physical devices.

8 CREATING BEAUTIFUL UI WITH FLUTTER

Use Hot Reload and Hot Restart to quickly refresh the app UI and understand when to use each.
Dependencies, custom assets and fonts.
An introduction to the Widget build() method.
Learning to use layout widgets such as Columns, Rows, Containers and Cards.
Incorporating Material icons using the Icons class.
Customise apps with Theme widgets.
Refactoring widgets by extracting them as separate Widget classes.

- Create custom Flutter Widgets by combining smaller widgets
- Learn to build multi-screen Flutter apps by learning about routes and the Navigator widget.
- Understand why flutter favours composition vs. inheritance when customising widgets.

9 BUILDING APPS WITH STATES

- Understand the difference between Stateful and Stateless Widgets and when they should each be used.
- Understand how callbacks can be used detect user interaction in button widgets.
- Understand the declarative style of UI programming and how Flutter widgets react to state changes.
- Learn to import dart libraries to incorporate additional functionality.
- Build flexible layouts using the Flutter Expanded widget.
- Understand the relationship between setState(), State objects and Stateful Widgets.

10 FLUTTER PACKAGES

- Learn to use the Dart package manager to incorporate Flutter compatible packages into your projects
- Incorporate the audioplayers package to play sound.
- Learn more about functions in Dart and the arrow syntax.
- Learn to refactor widgets and understand Flutter's philosophy of UI as code.

11 STRUCTURING FLUTTER APPS

- Learn about how lists and conditionals work in Dart.
- Learn about classes and objects in Dart and how it apply to Flutter widgets.
- Understand Object Oriented Dart and how to apply the fundamentals of OOP to restructuring a Flutter app.
- Learn to use Dart Constructors to create customisable Flutter widgets.
- Apply common mobile design patterns to structure Flutter apps.
- Learn about structuring and organising Flutter apps

12 FLUTTER APPS WITH BACKEND DATA

Getting location data from both iOS and Android.
Using the http package to perform networking and get live data from open APIs.
Flutter Database using SQLite
Understanding how to parse JSON data using the dart:convert library.
Understand how to pass data to State objects via the Stateful Widget.
Use the TextField Widget to take user input.
Understand how to pass data backwards using the Navigator widget

13 FLUTTER APPS WITH FIREBASE

Flutter with firebase Database
Flutter with firebase Authentication
Flutter with cloud Storage

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