Dart & Flutter Course

1. What is Dart and about it

a. JIT Just In Time Compiler

b. AOT - Ahead Of Time

2. Installation and Setup for Dart environment

a.Dart Pad Online Tool

b. **VS Code offline Tool (Recommended)

c.   IDE - integrated Development Environment

3. Data types, Variables and comments

4. Operators

5. Conditional Statements

a.If

b. else

c. Nested if else

d. switch

e. Conditional Expressions

i.Ternary operators

ii. Null-aware conditional operator

6. Looping Statements

a. For

i.For

ii. For Each

iii. For In

b.While

c. Do While

d.Continue and break keywords.

7. What is class and objects and examples Constructor

a. Class

i.Properties

ii.Methods (.. also referred as functions)

b. Objects

8. Function/Methods

a.What is the method and how to use it?

b.Normal Method

c.Required parameters method

d. Optional parameters method

e. Default parameters method

9.Explain passing values to constructor

10. Inheritance Concept

11. const, final, fat arrow notation

12. Var and dynamic

13. Dart Collection Topics: List, Set, Map etc.

14. Exception Handling

15. Asynchronous Programming

a.What is an asynchronous programming language?

b. Await, Async, Future explanation

16. Null Safety and null handling and its operators

a. Late

b.?

c. ??

d. !

17.Flutter Intro and Installation and Setup

a. Intro to Flutter

b. Installation and Setup

i.Download Android Studio

ii.JAVA SDK install

iii. Download Flutter SDK

iv. Download Flutter And Dart Extensions in Android Studio (File -> Plugins then search for "Flutter" and "Dart", and install them Download VS Code

v.Download Flutter And Dart Extensions in VS Code (Go To Extensions screen and search "Flutter" and "Dart", install them)

vi. Setting Path

1. Setting Path for Windows

2. Setting Path in MacOS

18. Flutter Project Explanation

a. Flutter project creation

b. Flutter Project directories explanation

c. Flutter Default Code explanation

d. What is the PubSpec.yaml file?

e. main and runApp?

f. What is MaterialApp?

i.Material Design-3

ii. Material Design-2

g. What is a Scaffold Widget?

h.Assignment: setup and create first flutter App

19.Basic Widgets - 1
a.Clear Existing Code
b. Scaffold Widget
c.AppBar
d. IconWidget
e. Font_awesome_icons
f. Colors
g. FAB Widget (Floating Action Button)
h. Container Widget
i.Text Widget
j.Center Widget
k.Assignment: Create a screen using today's class Widgets

20. Basic Widgets - 2
a. Padding & Margin
i.Padding - always inside
ii. Margin - always outside
iii. Padding vs margin
b. Padding Widget
c. IconButton Widget
d. TextButton Widget
e.InkWell Widget
f.GestureDetector Widget
g. Button Widget
h.TextField Widget
i.Assignment: Create screen with using today class Widgets

21. Row - Column - Stack
a. Row Widget
i.mainAxisAlignement for row => horizontal
ii.crossAxisAlignement for row => vertical
b. Column Widget
i.mainAxisAlignement for Column => vertical
ii.crossAxisAlignement for Column => horizontal
c. Stack Widget
i.Positioned Widget
d. Spacer
e. SizedBox
f.Assignment: Create a Login Page

22. Image Widget
a.How to create assets folder
b.How to add Images or other media and Register them in pubspec.yaml
c.Cached network Image
d. Image Widget
e.Circle Avatar Widget
f.How to show from URL and assets
g.Change app Icon
h.Assignment: Create 2 Image one shows image from Assets and URL.

23. Custom Font
a.How to create assets folder
b.How to add fonts to asset folder and Register them in pubspec.yaml
c.Change whole App Font Style
d. Change Particular Widget Text Font Style
https://fonts.google.com/specimen/Poppins
e.Assignment:Create app and use any custom font

24.Stateless Widget
a. RichText Widget
b.Clip Widget
c.Create a Stateless Widget
d.Explain its life cycle
e.Assignment: Create a stateless widget with your own design

25. Stateful Widget
a. Create a Stateful Widget
b. Explain its life cycle
c. Short cuts for creating Widgets
Assignment: Create a stateful widget with your own design

26. State Management Technique
a.setState method
b.Assignment Implement Count increment & Decrement App
Application Life

27. Form Validation
a.Create a real time form with all the widgets
b.TextFormField Widget
c. With Image.file() example (ImagePicker)

28. Named Navigation

a. Navigation Using Router

b. How to move from one Screen to other screen

c. Passing data from one screen to other screen

d.Assignment: Create a Screen with List of Items using ListView Builder whenever the user clicks on the item then needs to show that item in the next Screen.

29. Drawer & Bottom Navigation Bar

a. Bottom Navigation Bar Widget

b.Drawer Widget

c. AppBar Actions

d.Assignment Create a Flipkart Just a Simple, Don't need to be Pro

30. Lists

a. ListView

b.ListView Builder

c.ListView Divider

d.GridView Builder

e.PageView Widget, PageController

f.TabLayout

g.Bottom Sheets

h.Assignment: Create 2 Screens one with ListView Builder and GridView.

.31.Other Useful Widgets - 3

a. Expanded Widget

i.Match Parent (full -> width, height) (MAX)

ii. Expanded widget extends Flexible Widget only

a. Give row column example

b.Flexible Widget

i.Wrap Content (min -> width, height)(MIN)

c.Spacer Widget

d. SizedBox Widget

e.AbsorbPointer and IgnorePointer Widget

i.For disabling the touches

f.PlaceHolder Widget

g. Scrollbar Widget

h. CheckBox Widget

i.For multi-value selection

i.RadioTitle Widget

i.For Single option selection

j.DropDown Button

i.Single selection from multiple options

k. Dialog Widget

l.SingleChildScrollView Widget

m. Chips

n. LayoutBuilder Widget

o. SafeArea

32. Streams

33. Web Services & Rest API Integration

a. API stands for Application Programming Interface

b. What is an API request and how to get data from server

c. API operations

i.CRUD

1. C - Create (post or insert)

2. R - Read (Fetching or getting)

3. U - Update

4. D - Delete

d. What is json? JsonObject and JSONArray

i.JSON stands for JavaScript Object Notation

ii.Alternative to JSON is XML.

iii.[ ] => JSON Array (Multiple records)

iv.{ } => JSON Object (single record)

1. Nothing but Dart Map

e. Http & Dio packages

i. HTTP status codes

1. 200 - get success

f. How to parse the json data

g. How to create Model Classes / Data Class / POJO Class

h. How to get Data from Server and Shown to User

i.Showing Directly

ii.Using FutureBuilder

iii.Using StreamBuilder

i.Assignment: Build a screen which shows data from Server

34. Shared Preference

a. What is the shared Preference (SP)?

b. Examples and use cases of the shared Preference

c. Shared Preference with Example

i.User logged in or not

ii.To store User profile data

iii.User Preference ex: Dark Mode

a.Assignment: Create Login and Home Screen Using SP

35. Payment Gateway Integration (Razorpay)

36. Deploying Developed app in the Play Store

a. Using APK

i.Ex: Apk Size 24 MB

ii. Command: flutter build apk --release/--debug/—profile

iii. Extension: .apk

b.Using AppBundle

i.Ex: AppBundle 8 to 10 MB

ii. Command: flutter build app bundle --release/--debug

iii.Extension: .aab

c. Ios

i..ipa

37.

a. Play Store $25 dollars lifetime (Android)

b. App Store $99 dollars per year (iPhone/iOS)