

Introduction to Dart & Flutter Mobile App Development

Nature of the course: Theory + Practical

Total hours per day: 2 hours

Course duration: 4 weeks

Course Summary

Flutter is Google's UI toolkit for building beautiful, natively compiled applications for mobile, web, and desktop from a single codebase. The goal is to enable developers to deliver high performance apps that feel natural on different platforms, embracing differences where they exist while sharing as much code as possible. It is Google's mobile app SDK, complete with a framework, widgets, and tools, that gives developers an easy way to build and deploy visually attractive, fast mobile apps on both Android and iOS platforms. It enables a smooth and easy cross-platform mobile app development

Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

1. Has attended 90% of all classes held
2. Has received an average grade of 80% on all assignments
3. Has received an average of 60% in assessments
4. The tutor believes the student has grasped all of the concepts and is ready to go on to the second module.

Required Text Books

1. Beginning App Development with Flutter.
2. Beginning Flutter: A Hands on Guide to App Development.

Prerequisites

- Basic knowledge about programming, bits/bytes, procedures, classes, computer architecture, etc. If you just have a theoretical knowledge that is perfectly okay but you should have strong convictions on what programming is, and what you hope to achieve from this class.
- There is no prior educational level requirement for this course. Anyone from 10+2 student to someone who is doing their PHD in Genetic Engineering is welcome to take this course.
- If you are only interested in theory and have no interest/patience in spending at least 10 hours every week throughout the duration of the course, then this course might not be for you.
- If you have absolutely no idea about programming or do not see yourself doing programming in the next six -odd months, then this class may not be for you!

Course Details

WEEK 1

Introduction and Installation

- Introduction to Flutter
- Introduction to cross platform mobile application
- Project Structure

Basics of Dart Programming Language

- Hello World
- Variables and Datatypes
- Control flow statements
- Functions
- Comments
- Imports and Classes
- Async and Await

Exploring Flutter

- Flutter Hello World Application
- Understanding Material
- Project Structure
- Concept of pub

WEEK 2

Understanding Widgets

- Introduction to widgets
- Text
- Container
- Row
- Column
- Buttons
- Scaffold and many more
- Creating custom widget

List of Items

- Using List views
- Using List view builder

Navigation

- Using Navigator
- Using Routes
- Named Routes

WEEK 3

Basics of Stateful and Stateless widgets

- Introduction to stateless widgets
- Introduction to stateful widgets
- Understanding set state

Using plugins and packages

- Installing plugins on application
- Using plugins (image picker, camera etc)

WEEK 4

Data persistence

- Shared Preferences
- Using database

HTTP request

- Getting data from the remote server
- Working with data and creating data models

Projects we will be doing throughout the course

- To-do App
- Crypto Currency Tracker
- Blog Application and many more

Learning Outcomes

- You'll begin by studying the principles of Flutter widgets while constructing a Hello World app with Flutter.
- Building a contact profile page for an Android device's address book will teach you about layouts.
- You'll learn how to style apps with Flutter themes.