



IDM TECHPARK
GUIDE'S FOR PERFECT CAREER PATHWAY



Flutter Development Course Syllabus



N.S.D.C.
National
Skill Development
Corporation



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About Us

IDMTECHPARK global retail & corporate training solutions provider in Coimbatore, Erode, Trichy & Salem that offers a comprehensive range of training and placement services for both fresher's and professionals seeking new opportunities. The company commenced its IT training business in 2016. A pioneer in IT education, over the years, we have trained over 50k students. Idmtechpark has a wide range of courses, maintains education standards & provides placement assistance.

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About IDMTECHpark Education Quality

IDMTECHPARK is managed and developed by industry specialists with more than 8 years of expertise in the field. IDMTECHPARK offers a staff of highly skilled professional trainers who deliver effective IT training in a friendly setting, concentrating on the needs of each individual to help them succeed in a demanding work world. In the book of career and success, our staff never leaves a page unturned.

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IDMTECHPARK's versatile instructor-led training class rooms and lower-class sizes enable people to engage more easily and absorb knowledge, resulting in remarkable results for both themselves and the organizations for which they work. Our training programmes are adaptable and customizable to ensure that each participant gets the most out of their time with us. IDMTECHPARK focuses in providing hands-on IT training in over 30 different courses.

- We teach in-demand courses
- We provide impactful learning material
- Our teachers are well-selected & trained
- We follow world-class teaching methods
- Our courses include E-Projects
- We conduct technical workshops
- Exams are held and based on Exams providing Certification
- Certificates are recognized the world over
- Our course timings are flexible



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Our Recent Placement

Idmtechpark assists students in getting job placements on successful completion of their courses. Idmtechpark also provides recruitment assistance to organizations. Idmtechpark students are shortlisted based on the organization's requirement. To make students job-ready, Idmtechpark conducts workshops e.g. How to do Group Discussions, how to behave in a Personal Interview. From time to time, job fairs & campus recruitments are conducted. Workplace skills such as time management, making effective presentations and communication skills are also provided. All this helps students find appropriate jobs in the IT industry while also helping save companies recruitment costs.

Krishnaveni M

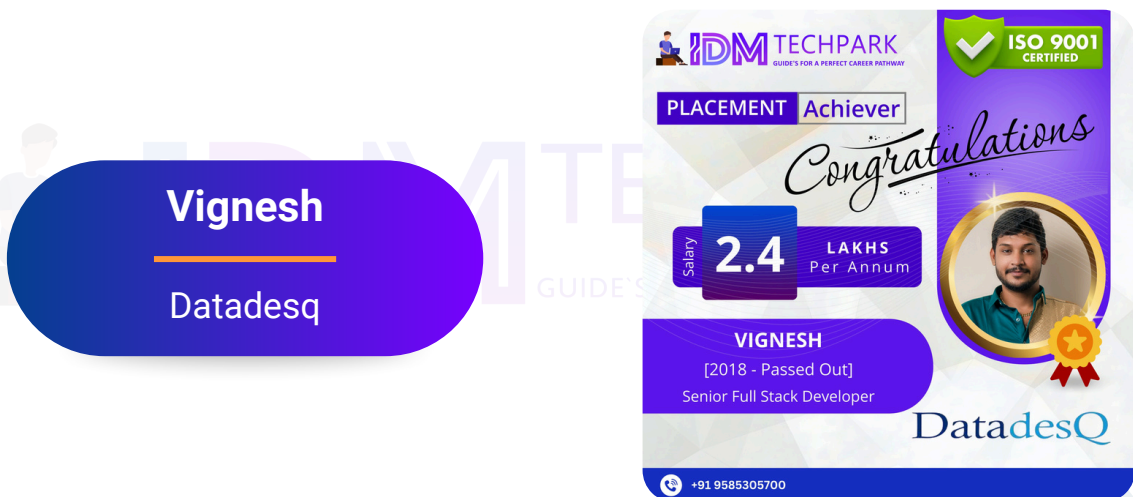
Frutterlabs





Joshwa

Xccessor



Vignesh

Datadesq



Madhumitha

Accenture

Keerthana

AJS



Brindha Boopathi

AJS



Kavin Kumar

AJS

Ajithkumar

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Gowthami

Genpact



Surya

ZUCI

Pavithra

Vel Info Tech



Poovitha

Gray Matter



Ramesh

TDT

Siva Sankar
ST Cloudspark tech

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PLACEMENT Achiever

Congratulations

Salary **3.2** LAKHS Per Annum

Siva sankar
[2018 - Passed Out]
Software Engineer

ISO 9001 CERTIFIED

Cloudspark Tech
Knowledge | Growth | Success

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PLACEMENT Achiever

Congratulations

Salary **1.4** LAKHS Per Annum

Mohammed Nabeel Hisham
[2019 - Passed Out]
Digital Marketing Executive

ISO 9001 CERTIFIED

VTail
CORPORATE POLICY

+91 9585305700

Nabeel Hisham
VTail

Kalayarasan
Violet Infotech

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PLACEMENT Achiever

Congratulations

Salary **3** LAKHS Per Annum

Kalayarasan
[2021 - Passed Out]
Junior Python Developer

ISO 9001 CERTIFIED

Violet Infotech
Software Solutions

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Our Alumni Working At



MODULE 1

Introduction to Flutter

● What is Flutter?

☐ Overview of Flutter and its benefits (cross-platform development)

☐ History and evolution of Flutter

● Setting Up the Development Environment

☐ Installing Flutter, Android Studio, and Xcode (for macOS)

☐ Setting up a development environment for iOS and Android

☐ Introduction to Dart programming language

MODULE 2

Understanding Dart Basics

● Introduction to Dart

- ☐ Overview of Dart and its syntax
- ☐ Variables, data types, and operators

● Control Flow and Functions in Dart

- ☐ Conditionals, loops, and functions
- ☐ Lists, maps, sets, and collections

MODULE 3

Flutter Project Structure

● Understanding Flutter Project Structure

- Overview of Flutter project directories (lib, assets, android, ios)
- Key files: main.dart, pubspec.yaml, assets

● Flutter Widgets

- Introduction to widgets: StatelessWidget vs StatefulWidget
- The role of MaterialApp, Scaffold, and AppBar

MODULE 4

Building Basic UI with Flutter

● Creating Basic Widgets

- ☐ Text, Container, Column, Row, Stack, and Align
- ☐ Using Images and Icons in Flutter

● Understanding Layouts

- ☐ Row, Column, Stack, and GridView for flexible UI design
- ☐ Aligning and positioning widgets

MODULE 5

State Management in Flutter (Intro to Stateful Widgets)

● Introduction to Stateful Widgets

☐ How state works in Flutter

☐ Creating a simple counter app with StatefulWidget

● Managing State within a Single Widget

☐ setState() method for managing widget state

MODULE 6

Flutter Navigation and Routing

● Introduction to Navigation

- ☐ Push and pop navigation using Navigator widget
- ☐ Routes and named routes

● Passing Data Between Screens

- ☐ Sending and receiving data between screens
- ☐ Using arguments in named routes

MODULE 7

Forms and Input Validation

● Creating Forms in Flutter

- ☐ TextFormField widget and validation
- ☐ Using TextEditingController for form field data handling

● Form Validation

- ☐ Implementing real-time form validation
- ☐ Custom form validation logic

MODULE 8

Working with Lists and Grids

● ListView and GridView

☐ Creating dynamic lists and grids using `ListView.builder()` and `GridView.builder()`

☐ Understanding ListView items and layouts

● Interactive Lists

☐ Adding `onTap` and `onDismissed` events

☐ Using `ListTile` for item interaction

MODULE 9

Flutter Animation Basics

● Introduction to Animations

- ☐ Overview of Flutter's animation framework
- ☐ Using AnimatedContainer, AnimatedOpacity, and AnimatedCrossFade

● Creating Simple Animations

- ☐ Implicit and explicit animations
- ☐ Using Tween and AnimationController

MODULE 10

Advanced Flutter Animations

- Complex Animations with AnimationController
 - Using AnimationController for smooth, timed animations
 - Creating custom animations and transitions
- Animation Libraries in Flutter
 - Overview of popular animation libraries in Flutter like flutter_animate and rive

MODULE 11

Networking and API Integration

● Making HTTP Requests

- ☐ Sending HTTP requests using http package
- ☐ Understanding GET, POST, PUT, DELETE requests

● Parsing JSON Data

- ☐ Parsing JSON responses using dart:convert
- ☐ Using models and factory constructors for JSON data

MODULE 12

Working with Firebase in Flutter

● Introduction to Firebase

- ☐ Setting up Firebase in Flutter
- ☐ Overview of Firebase services: Authentication, Firestore, Firebase Storage

● Firebase Authentication

- ☐ User authentication with Firebase (email/password, Google, Facebook)
- ☐ Handling login, signup, and authentication states

MODULE 13

Firestore and Real-Time Database

- Introduction to Firestore
 - Firestore vs Firebase Realtime Database
 - Setting up Firestore in Flutter
- CRUD Operations with Firestore
 - Adding, updating, reading, and deleting data in Firestore
 - Listening to real-time data updates from Firestore

MODULE 14

Flutter Packages and Plugins

● Using Flutter Packages

- ☐ Finding and using third-party packages from pub.dev
- ☐ Installing and integrating packages into Flutter projects

● Creating Custom Packages

- ☐ How to create a custom Flutter package
- ☐ Publishing packages to pub.dev

MODULE 15

Local Storage in Flutter

● Introduction to Local Storage

- ☐ Using shared_preferences for small data storage
- ☐ Introduction to sqflite for SQLite database management

● Database Operations

- ☐ Performing CRUD operations with SQLite
- ☐ Using moor or floor for more advanced local databases

MODULE 16

Flutter Testing Basics

● Unit Testing in Flutter

☐ Introduction to unit testing in Flutter with test package

☐ Writing basic unit tests for business logic

● Widget Testing

☐ Writing widget tests with flutter_test

☐ Simulating user interaction and validating widget behavior

MODULE 17

Advanced State Management

● Introduction to State Management

- Overview of different state management techniques (setState, Provider, Riverpod, BLoC)

- Choosing the right state management approach

● Using Provider for State Management

- Implementing state management with provider package

- Managing app-wide state using ChangeNotifier

MODULE 18

BLoC Pattern for State Management

● Introduction to BLoC Pattern

- Understanding BLoC (Business Logic Component) architecture
- Streams and Sinks in BLoC

● Implementing BLoC in Flutter

- Creating and managing BLoC using flutter_bloc package
- Using Cubit for simple state management with BLoC

MODULE 19

Flutter for Desktop and Web

● Building Flutter Web Applications

- Overview of Flutter web support and compatibility
- Setting up a Flutter web project and building responsive layouts

● Building Flutter Desktop Applications

- Introduction to building macOS, Windows, and Linux apps with Flutter
- Running and deploying Flutter desktop applications

MODULE 20

Flutter Plugins and Native Code Integration

● Integrating Native Code with Flutter

☐ How to call Android and iOS native code using platform channels

☐ Writing custom platform-specific code

● Using Native Features

☐ Accessing device features such as Camera, GPS, Sensors, and Bluetooth

MODULE 21

Flutter Performance Optimization

● Optimizing Flutter Apps

- ☐ Profiling and debugging Flutter apps with DevTools
- ☐ Identifying performance bottlenecks (UI rendering, frame drops)

● Best Practices for Flutter Performance

- ☐ Minimizing rebuilds with const constructors
- ☐ Efficient use of state management techniques

MODULE 22

Flutter and Internationalization (i18n)

● Internationalization Basics

- ☐ Setting up localization in Flutter apps
- ☐ Using intl package for date, time, and number formatting

● Localization and Translations

- ☐ Adding multiple languages to Flutter apps
- ☐ Generating localization files and handling translations

MODULE 23

Building and Publishing Flutter Apps

● Preparing for App Release

- ☐ Building APK, AAB for Android, and IPA for iOS
- ☐ Code signing and versioning for release builds

● Publishing to Google Play and App Store

- ☐ Uploading to Google Play Store and Apple App Store
- ☐ Handling app store metadata and release notes

MODULE 24

Flutter CI/CD (Continuous Integration/Continuous Deployment)

● Setting Up CI/CD for Flutter

☐ Introduction to CI/CD pipelines for Flutter apps

☐ Using GitHub Actions, Bitrise, or Codemagic for automation

● Automated Testing and Deployment

☐ Automating tests, builds, and deployments to app stores

MODULE 25

Capstone Project and Case Studies

● Capstone Project

- ☐ Building a complete, fully-featured app from scratch
- ☐ Incorporating all learned concepts: UI design, state management, networking, database, Firebase, and testing

● Case Studies and Review

- ☐ Review of real-world Flutter applications
- ☐ Best practices, performance tips, and app optimization strategies

Thank You

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