

## Flutter Lectureflow

<b>MODULE 1: Career Orientation &amp; Flutter Ecosystem</b>	<b>3</b>
<ul style="list-style-type: none"> <li>• Session 2: Mobile Development Landscape &amp; Why Flutter</li> <li>• Session 1: How Mobile Apps Are Built in the Industry</li> <li>• Session 3: Flutter Architecture &amp; Widget Thinking</li> </ul>	
<b>MODULE 2: Flutter &amp; Dart Environment Setup and Programming</b>	<b>20</b>
<ul style="list-style-type: none"> <li>• Session 1: Flutter SDK Setup &amp; Project Structure</li> <li>• Session 2: IDE Configuration &amp; Emulator Setup</li> <li>• Session 3: Real Device Debugging</li> <li>• Session 4: flutter doctor &amp; Environment Troubleshooting</li> <li>• Session 5: Flutter Project Structure Deep Dive</li> <li>• Session 6: Hot Reload, Hot Restart &amp; Debugging Tools</li> <li>• Session 7: First Complete Flutter Screen</li> <li>• Session 8: Module Assignment &amp; Assessment</li> <li>• Session 9: Dart Language Basics &amp; Program Structure</li> <li>• Session 10: Strings, Operators &amp; Expressions</li> <li>• Session 11: Conditional Statements &amp; Decision Making</li> <li>• Session 12: Looping Statements &amp; Iteration</li> <li>• Session 15: Working with Lists &amp; Sets</li> <li>• Session 16: Working with Maps &amp; Key-Value Data</li> <li>• Session 17: Functions &amp; Code Reusability</li> <li>• Session 18: Object-Oriented Programming – Classes &amp; Objects</li> <li>• Session 19: OOP Concepts – Inheritance, Polymorphism &amp; Keywords</li> <li>• Session 20: Asynchronous Programming &amp; Exception Handling</li> </ul>	
<b>MODULE 3: Flutter UI Fundamentals&amp; Development</b>	<b>10</b>
<ul style="list-style-type: none"> <li>• Session 1: Flutter Project Structure &amp; Widget Tree Fundamentals</li> <li>• Session 2: Stateless vs Stateful Widgets</li> <li>• Session 3: MaterialApp, Scaffold &amp; App Structure</li> <li>• Session 5: Core UI Widgets – Text, Button, Icon, Image</li> <li>• Session 4: Layout Widgets – Row, Column &amp; Container</li> <li>• Session 7: Responsive UI &amp; Screen Adaptation</li> <li>• Session 6: Handling User Interaction &amp; setState</li> <li>• Session 9: Custom Reusable Widgets</li> <li>• Session 8: Themes &amp; App-Wide Styling</li> </ul>	

<b>MODULE 4: Navigation, Forms &amp; State</b>	<b>10</b>
<ul style="list-style-type: none"> <li>• Session 1: Navigation Basics – Moving Between Screens</li> <li>• Session 2: Named Routes &amp; Centralized Navigation</li> <li>• Session 4: Returning Data from Screens</li> <li>• Session 3: Passing Data Between Screens</li> <li>• Session 5: Forms &amp; Input Widgets</li> <li>• Session 6: Form Validation &amp; User Feedback</li> <li>• Session 7: Controllers, Focus &amp; Keyboard Handling</li> <li>• Session 8: Widget Lifecycle &amp; initState Usage</li> <li>• Session 9: Basic State Management with Provider</li> <li>• Session : Capstone Architecture &amp; App Skeleton Build</li> <li>• Session 2: Authentication Flow, Forms &amp; State Integration</li> </ul>	
<b>MODULE 5: Advanced UI Components &amp; App Structure</b>	<b>8</b>
<ul style="list-style-type: none"> <li>• Session 1: Building Scrollable UI with ListView</li> <li>• Session 2: GridView &amp; Card-Based Layouts</li> <li>• Session 3: List Items, Dividers &amp; Visual Separation</li> <li>• Session 4: Handling Gestures on List &amp; Grid Items</li> <li>• Session 5: Bottom Navigation Bar for App-Level Navigation</li> <li>• Session 6: Tab Bar Navigation for Section-Level Content</li> <li>• Session 7: Navigation Drawer with Header &amp; Menu Items</li> <li>• Session 8: Module Review, Assignment &amp; Assessment</li> <li>• Capstone Session 1: Dashboard &amp; Service Browsing Flow</li> <li>• Capstone Session 2: Drawer, Tabs &amp; UI Refinement</li> </ul>	
<b>MODULE 6: Local Storage &amp; Offline Database</b>	<b>8</b>
<ul style="list-style-type: none"> <li>• Session 1: Understanding Local Storage in Mobile Applications</li> <li>• Session 2: SharedPreferences for Lightweight Data</li> <li>• Session 3: Introduction to SQLite &amp; Structured Data Storage</li> <li>• Session 4: Database Initialization &amp; Model Class Design</li> <li>• Session 5: CRUD Operations – Insert &amp; Read</li> <li>• Session 6: CRUD Operations – Update &amp; Delete</li> <li>• Session 7: Async Handling, Error Management &amp; Performance</li> <li>• Capstone Session 1: Implementing Offline Favorites &amp; Saved Data</li> <li>• Capstone Session 2: Offline UX Refinement &amp; Data Sync Preparation</li> </ul>	
<b>MODULE 7: API Integration &amp; JSON Handling</b>	<b>8</b>
<ul style="list-style-type: none"> <li>• Session 1: Understanding APIs &amp; Client–Server Communication</li> <li>• Session 2: HTTP Package &amp; Making GET Requests</li> </ul>	

- Session 3: JSON Parsing & Model Mapping
- Session 4: Displaying API Data in UI
- Session 5: POST Requests & Sending Data to Server
- Session 6: Error Handling, Status Codes & Timeouts
- Session 7: Network State Management & Caching
- Capstone Session 1: Integrating Live Services API
- Capstone Session 2: Offline + Online Sync Strategy

## **MODULE 8: Firebase Integration & Device Features**

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- Session 1: Introduction to Firebase & Cloud-Based Mobile Apps
- Session 2: Firebase Project Setup & Flutter Configuration
- Session 3: Firebase Authentication – Email & Password Login
- Session 4: Firestore Database – Reading & Writing Data
- Session 5: Real-Time Updates & Stream Handling
- Session 6: Cloud Storage & Media Uploads
- Session 7: Device Features – Camera, Gallery & Permissions
- Capstone Session 1: Firebase Auth & User Profile Integration
- Capstone Session 2: Media Upload & Real-Time Data Sync

## **MODULE 9: Advanced State Management, App Architecture & Deployment**

**8**

- Session 1: Limitations of Basic State Management
- Session 2: Introduction to Bloc / Cubit Architecture
- Session 3: Implementing Bloc for Feature-Level State
- Session 4: Clean Architecture & Layered App Structure
- Session 5: Dependency Injection & Service Management
- Session 6: App Configuration, Flavors & Environment Setup
- Session 7: Build Optimization, Debugging & Performance
- Capstone Session 1: Refactoring the Capstone to Production Architecture
- Capstone Session 2: Testing, Debugging & Pre-Release Checklist
- Capstone Session 3: App Build, APK Generation & Deployment Overview