Android Mobile Application Development

Course Duration: 64 Hours **Course code: AMAD**

1. Course Overview

This course provides participants with the knowledge and skills to design, develop, and deploy Android mobile applications. It covers Android architecture, UI/UX design, data handling, APIs, sensors, and deployment to the Google Play Store. Participants will gain hands-on experience building functional Android apps.

2. What you'll learn?

- Understand Android OS architecture and app components.
- Build responsive and interactive user interfaces using Android Studio.
- Handle data storage, APIs, and integrate cloud services.
- Utilize device features like camera, GPS, sensors, and Bluetooth.
- Test, debug, and optimize Android applications.
- Deploy Android apps to the Google Play Store.

3. Target Audience

- Beginners and intermediate developers aiming to develop Android apps.
- Students and IT professionals exploring mobile app development.
- Developers transitioning from other platforms to Android.
- Product managers and designers wanting technical understanding of Android apps.

4. Pre-Requisites

- Basic programming knowledge (Java or Kotlin recommended).
- Familiarity with object-oriented programming (OOP) concepts.
- Basic understanding of mobile devices and operating systems.

Phone: +91-999-911-1686 **Mail Us:** info@ssdntech.com

5. Course content

Module 1: Introduction to Android

- Android platform overview and ecosystem
- Android architecture: Linux kernel, libraries, runtime, framework, apps
- Setting up Android Studio and SDK
- Building your first Android app

Module 2: Android Application Fundamentals

- Activities, fragments, and lifecycle
- Intents and navigation between screens
- UI components: Views, Layouts, Widgets
- Event handling and user interaction

Module 3: UI/UX Design for Android Apps

- Material Design principles and guidelines
- Layouts: LinearLayout, RelativeLayout, ConstraintLayout
- Styling, themes, and resources
- Designing responsive UIs for multiple screen sizes

Module 4: Data Handling and Storage

- Shared Preferences, SQLite, Room database
- Working with JSON and REST APIs
- Cloud data integration (Firebase, Realtime Database)
- Hands-on: Build a simple CRUD app

Module 5: Device Features and Sensors

- Accessing GPS and location services
- Camera integration and media handling
- Working with device sensors (accelerometer, gyroscope)
- Bluetooth basics for Android apps

Module 6: Permissions, Security, and Best Practices

- Runtime permissions and security policies
- Data security and encryption
- App optimization and best practices
- Handling errors and exceptions

Module 7: Testing and Debugging

- Debugging using logcat and Android Studio tools
- Unit testing and UI testing
- Emulator and real-device testing
- Performance monitoring and optimization

Module 8: Deployment and Publishing

- Preparing APKs and App Bundles
- Signing and provisioning for release
- Publishing on Google Play Store
- Managing updates and app store compliance

Module 9: Capstone Project

- Build a full-featured Android app incorporating UI, data handling, and device features
- Test and optimize the app for real-world scenarios
- Project presentation and review