Android Application Development

Introduction:

Android software development is the process by which applications are created for devices running the Android operating system. Google states that "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit (SDK), while using other languages is also possible. All non-JVM languages, such as Go, JavaScript, C, C++ or assembly, need the help of JVM language code, that may be supplied by tools, likely with restricted API support. Some programming languages and tools allow cross-platform app support (i.e. for both Android and iOS). Third party tools, development environments, and language support have also continued to evolve and expand since the initial SDK was released in 2008. The official Android app distribution mechanism to end users is Google Play; it also allows staged gradual app release, as well as distribution of pre-release app versions to testers.

Topics to be covered:

Session 1 (Introduction to Android technology)

- Structure of Android applications
- Students will install the SDK Tools, Eclipse, and other Tools or Android Studio as feasible for the session.
- Students will be informed well in advance with the installation process.
- Students will get ready to develop by creating Android virtual device and setting an Android Device.
- Starting with Manifest

Session 2 (Working with Activities)

- Creating Skelton Application
- Using XML based layouts
- Using Basic Widgets
- Working with Containers
- Using Selection Widgets
- Applying Menus and Fonts
- Showing Pop-up Messages
- Dealing with Threads
- Handling Activity Lifecycle events

By this time the students will be able to develop the simple buttons, menu box, how to create a toast, pop up messages, etc and other basic structures of the app.

Session 3 (Intents)

- Create Intent Filters

- Launching Activities
- Introspection with action
- Handling Rotation

Session 4 (Data stores, Network services and APIs)

- Setting Preferences
- Accessing the Files
- Working with Resources
- Managing Local Databases
- Communicating with Internet

Students will learn on how to create database and connect your app to internet.

Session 5 (Content Provider and services)

- Using a Content Provider
- Creating a Content Provider
- Managing Permissions
- Creating and Using the Services
- Creating Alerts with Notifications

Students will learn to set permissions for app that are needed by the user.

Session 6 (Telephony and SMS)

- How to send an automated message using your App to the user.
- Audio, Video and using the Camera
- Students will learn to use the media player / Camera.
- Sample activity is creating a Media player to play audio/video songs.
- Publishing your App.

Benefits:

- Internship offers by the Organizing partner
- Training coupons
- Participation certificate from Wissenaire, IIT Bhubaneswar and Organizing partner.

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