Android Development Training

Course Description:

This hands-on course conveys the fundamental skills necessary to deploy Android Apps on mobile devices such as phones and tablets. Attendees will design and build a variety of Android Apps throughout the course. Previous Java programming knowledge is not essential, but basic programming experience is required. Java code used in the exercises is fully explained.

The course emphasizes proper layout of the user interface (UI), including how to add buttons, labels, textboxes, checkboxes, images and other widgets to the UI. Students will learn how to utilize Android's XML-based layout system, which builds the UI with containers and widgets, as well as how to set wallpapers and add menus to the UI. Students practice with dialog techniques including the display of popup messages.

Students also learn how to handle screen rotation, and how to define UIs so they can adjust for different screen sizes. The course teaches students how to accept user input from keyboards (either externally attached or from the built-in keyboard), how to use the date/time picker, and how to present users with choices using Selection Lists. Students will learn how to add tabs to the UI, as well as how to display HTML content using the built-in WebKit browser.

Students will learn how to program control of state changes in the Activity Lifecycle: active, paused, stopped or dead. For instance, since Apps often run on phones, taking a call may send an App from the active state to the paused state. Or, if battery life is low the App may be forced

into the dead state. Student will learn how to manage Activities moving between these states so that Apps can, for example, save inputted data before transitioning into the dead or paused state. Also related to this is the ability for an Activity to launch Sub-Activities, which allows Apps to run processes in the background (such as downloading files).

Coverage of data storage includes best practices for storing images and files. Student will also learn how to embed SQLite databases in Apps, and then use these databases to store and retrieve any kind of data.

The course emphasizes Service Oriented Architecture (SOA), and students learn how to connect Apps to web services such as Google Maps and UPS's package tracking API. In addition to using outside web services, the course also demonstrates how to use many of a phone or tablet's built-in features such as the camera, location service (which determines where the device is physically located), and the Accelerometer (which determines if the device is being tilted and how fast it's being tilted). Additional topics include how to play audio and video, and standard techniques for storage and retrieval.

Students employ Android Studio to perform comprehensive hands on exercises throughout the course to reinforce learning and develop real competency. Various alternative App development environments are compared to Android Studio, including Flex, Air, PhoneGap and Eclipse.

Course Prerequisites:

Prior experience of programming language is required. Java skills are a plus point.

Target Audience:

This course is specially designed for the B.Tech /B.E(CSE/IT/EEE/ECE/Mech) and all other IT related Graduates and Post Graduate students. Mission Professionalism has conquered the job scenario and companies seek for well qualified, professional and skilled manpower. Quality Education and Performance Oriented Training is our motto.

What Student/Professionals Will Learn?

- Creating Android apps for mobile devices
- Setting up the IDE to develop and test Android apps for smartphones and tablets

- Using XML-based layouts to place buttons, checkboxes, images and other widgets on the screen
- Managing different screen sizes and phone/tablet rotation
- Accepting keyboard input, as well as responding to screen touches, touch-and-holds and swipes
- Displaying pop-up messages and notifications
- Managing the lifecycle of an app, including when it's interrupted by a phone call
- Embedding SQLite databases in apps for persistent storage
- Connecting Android apps to web services and Java libraries
- Using MapView, location services, the camera and other built-in features
- Using the Accelerometer to respond to tilts and shakes
- Packaging and deploying apps to phones and tablets
- Upload the app on the Play store

COURSE-CONTENT

Module 1: Android Overview and History

- How it all got started
- Why Android is different and important

Module 2: Android Stack

- Overview of the stack
- Linux kernel
- Native libraries
- Dalvik
- App framework

Module 3: Main Building Blocks

- Activities
- Activity lifecycle
- Intents
- Services

- Content Providers
- Broadcast Receivers

Module 4: Advanced UI

- Selection components
- Adapters
- Complex UI components
- Building UI for performance
- Menus and Dialogs

Module 5: SQLite Database

- Introducing SQLite
- SQLite OpenHelper and creating a database
- Opening and closing a database
- Working with cursors Inserts, updates and deletes

Module 6: Location Based Services and Google Maps

- Using Location Based Services
- Working with Google Maps

INTEGER Innovation will provide:

- Training Slides taught during training by trainers
- Programmatic Examples
- Assignments of each topic in a module
- Demos executed during training session.
- Software's and installation guide (for future help)
- E-books for further reading in depth
- Reference links
- 24X7 online support for any queries or doubts.