

Android Training

Java • Operating Systems Concepts • Android



Why Android?

Android is an open source mobile OS platform that's running on top of Linux kernel. It uses a non-standard Java Virtual Machine called Dalvik, specialized to handle mobile device processes. The main programming language used for Android is Java, with many libraries from J2SE and third party open source projects, such as Apache commons, sqlite, webkit, etc.

Why so much popular?

Android's open source nature enables manufacturers to design and customize the platform to their own likings. So fragmentation is a concern here. However, the core Android OS provides more than enough features for current mobile devices' needs. As it evolves, it might include more standardized features, and the OS platform can only become better and better.

Android Market - Android Market is the online software stores developed by Google for Android devices. It's having millions of free applications, games, etc. and has a huge scope in development of apps.

Is Android the Future of Mobile Computing?

Android is also being developed for Netbook, eBook readers, and a slew of other electronic appliances. So it's more than a mobile device OS. Android's greatest strength, however, is its development kit.

The Android SDK also provides a very robust emulator so that application developers can test their Android applications without relying on physical hardware to do so.

Android VS other Mobile OS's

- Android is tightly integrated with Google's cloud services, such as Gmail, Calendar, Contacts, Gtalk, etc.
- This positions Google at a very good edge to monetize mobile ad revenues. Most of the applications are freely available
- Free GPS support for Map navigation, Ndrive is for real time navigation
- User friendly look, easy to use
- Great support for wireless communication protocols like WIFI, Bluetooth, etc.
- Different widgets that give advantages for on home screen interface.
- Extremely good media file quality, because major difference in media framework of Android OS

Who can join the course?

One can join with prerequisite of having knowledge of C/Java programming.

Course Contents:

Java

Data Types and Concepts of Type Casting • Inheritance • Abstract Classes • Packages and Interface • Exception Handling • Wrapper Classes • Streams and files in Java • Networking in java • Threads • Java Database Connectivity • Applet / Awt / Swings • http client / http connection / http request / http response (hc.apache.org) • java.io - Reader/Writer , Input/output stream • Files Socket , Socket connection • SQL queries - insert , update , delete , modify • J2EE - SAX - simple APIs for XML -DOM - Document Object Model • RPC - Remote Procedure Call -RMI - Remote method invocation

Operating Systems Concepts

System Call • Microkernel •Virtual Machines • Java Virtual Machine • Components of Operating Systems • Services Provided By OS • System Programs • Layered Approach • I/O (Interrupt Driven) • DMA (Direct Memory Access) • Cache • Dual Mode Operation • Process Control Block (PCB) • Schedulers • Context Switching • IPC(Inter Process Communication • RPC(Remote Procedure Call) • RMI (Remote Method Invocation) • Types of Scheduling • Dispatcher • Swapping • Paging • Segmentation • Fragmentation • Virtual Memory • Demand Paging • Page Replacement

Android

Android Core Concepts: Project Structure • inside Manifest File

Activities: Creating a Skeleton Application • Using XML-Based Layouts • Employing Basic Widgets • Working with Containers • Using Selection Widgets • Getting Fancy with Lists • Employing Fancy Widgets and Containers • Applying Menus • Fonts • Embedding the Web Kit Browser • Showing Pop-Up Messages • Dealing with Threads • Handling Activity Lifecycle Events

Data Stores, Network Services, and APIs: Using Preferences • Accessing Files • Working with Resources • Managing and Accessing Local Database • Leveraging Java Libraries • Communicating via the Internet

Intents: Creating Intent Filters • Launching Activities and Sub-Activities • Finding Available Actions via Introspection • Handling Rotation

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