



Hewlett Packard Enterprise

Course Datasheet

ANDROID

Education Services course product number – HPE-AND-v1.0

Course length – 72 Hrs.

Delivery mode – Instructor Led Training (ILT)

Virtual Instructor Led Training (vILT)

Android is an open source project of the Open Handset Alliance that has revolutionized the user experience of a mobile device. Android is a platform for mobile devices, which includes an OS, middleware and some key applications. The OS is based on a variant of Linux Kernel. The biggest advantage is that the success of Android depends on the availability of unique and engaging user applications created by developers.

Course Objective

To understand the android platform architecture:

- Difference between Android and other mobile development environments.
- Design, develop, debug, and deploy Android applications,
- Use Android SDK's simulator to test and debug applications,
- Construct user interfaces with built-in views and layouts.
- Advantage of APIs for data storage, retrieval, files, databases etc.

Prerequisite

Understanding of Java SE.

Course Modules

Chapter 01 – Android Overview

- Android Anatomy and Physiology
- Mobile Application Development Overview
- Comparison with other development platform (J2me, Symbian etc)

Chapter 02 – Android Architecture

- Android Stack Overview of Stack Linux Kernel
- Native libraries
- Dalvik VM
- Application Framework

Course Datasheet

Chapter 03 – Android SDK Overview

- Platform
- Tools
- Android Development Kit
- AVD
- Emulators
- Mksdcard
- Sqlite 3
- Plug in
- Eclipse

Chapter 04 – Setup Android Development Environment

- System requirements
- Eclipse and SDK installation, AVD creation
- Creating first Android application
- Project Structure

Chapter 05 – Android Application Fundamental

- Android application building blocks
- Activating components
- Shutting down components
- LifeCycle of Application

Chapter 06 – Main Building Block

- Activity
- Intents
- Services
- Content Providers
- Broadcast Receivers

Chapter 07 – User Interfaces

- XML Vs Java UI
- Layouts
- Common UI Component
- Drag and Drop UI Design
- Menu Creation, Dialog, Toast, Alert, Time Picker, Date Picker, Custom Dialog
- Pre-condition and Post-condition

Chapter 08 – Handling User Event

- Event listeners
- Event handlers
- Touch mode
- Focus Mode

Chapter 09 – Notifying User

- Toast Notification
- Status Notification
- Applying Style and them

Course Datasheet

Chapter 10 – Application Resource

- Providing Resources
- Accessing Resources
- Handling Run Time changes
- Localization
- Resources Type

Chapter 11 – Android System Overview

- Preferences
- Notifications
- Security model
- File System

Chapter 12 – Multimedia in Android

- Multimedia Supported audio formats
- Simple media playback
- Supported video formats
- Simple video playback

Chapter 13 – Data Storage

- Shared Preferences
- Internal Storage (Files)
- External Storage(SD Card)
- SQLite Databases

Chapter 14 – Security and Permissions

- Security Architecture
- Debug Certification
- Certificate & keystone creation
- Self certifications
- Application Signing

Chapter 15 – Graphics

- 2D Graphics
- 3D Graphics

Chapter 16 – Location and Map

- Map Layout
- Get user Location

Chapter 17 – Basic Content Provider

- Content provider MIME types
- Searching for content
- Adding, changing, and removing content
- Working with content files

Chapter 18 – Services

- Overview of services in Android
- Implementing a Service

Course Datasheet

- Service life-cycle
- Bound versus unbound services

Chapter 19 – Broadcast Receiver

- What are Broadcast Receivers
- Implementing broadcast receiver
- System broadcasts and how to use them

Chapter 20 – Intent Filter

- Role of filters
- Intent-matching rules
- Filters in your manifest
- Filters in dynamic Broadcast Receivers

Chapter 21 – Sensors

- How Sensors work
- Listening to Sensor readings

Chapter 22 – WiFi

- Monitoring and managing Internet connectivity
- Managing active connections
- Managing WiFi

Chapter 23 – Camera

- Taking pictures
- Rendering previews

Chapter 24 – Bluetooth

- Controlling local Bluetooth device
- Discovering and bonding with Bluetooth devices
- Managing Bluetooth connections
- Communicating with Bluetooth