

Quadrant II – Transcript and Related Materials

Programme	: Bachelor of Science (Second Year)
Subject	: Electronics
Paper Code	: ELS 104
Paper Title	: Smart phone Apps development
Unit	: II
Module Name	: What is Android, Advantages and Future of Android Tools and about Android SDK, Installing Java
Module No	: 01
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Notes:

What is Android?

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers.

Versions of Android

- 1.Android Astro1.0
- 2.Android CupCake1.5
- 3.Android Donut 1.6
- 4.Android Éclair 2.0
- 5.Android Froyo2.2
- 6.Android Gingerbread 2.3
- 7.Android Honeycomb 3.0
- 8.Android IceCreamSandwich4.0
- 9.Android JellyBean4.2
- 10.Android Lollipop5.0
- 11.Marshmallow 6.0

12.Nougat 7.0

13.Oreo 8

Features of Android

- Better interface than previous touchscreen mobiles
- Android support advance audio/video still media formats such as MPEG,JPEG,PNG,GIF, etc.
- Can run multiple applications at the same time
- Features like camera and GPS is also available
- Supports multitasking
- Supports sharing of internet using Hotspot

Advantages of Android

1. Open Source:

- Android SDK can be leveraged **without having to worry about the licensing costs or royalty.**
- Developers **can interact with the Android developer community for the forthcoming versions** which they can incorporate into their app development projects.
- These benefits make Android a lucrative prospect for** development of the various applications.

2. Customizable User Interface:

- Android-based applications are **highly customizable and easier to manage.**
- Google is highly focused on making its user interface customizable** to help developers create custom Android apps.
- Being an open source platform, it **allows developers to turn their creative ideas into reality and build innovative and interactive apps.**

3. Low Investment & High ROI:

- Android has a relatively low barrier to entry. Its **SDK is available for free to developers** which significantly reduces the development costs.
- **App development costs can be bifurcated into three major parts:** development, testing, and deployment.
- **Developers are required to pay a one-time registration fee for application distribution.** Thereafter, they can leverage any computer device to build and test the product on their smartphones, ensuring low investment and increased

engagement among users. Ultimately, users get an interactive app and the enterprise gains a higher return on investment.

4. Multiple sales channel

Unlike other mobile platforms, Android applications can be deployed in different ways. **You do not have to rely on a single market to distribute your applications.**

• **Besides using Google Play Store and other third-party app marketplaces**, you can create your own distribution and sales channels. You build it, you publish it. With your choice of promotional strategy, you can reach your end users through multiple channels.

5. Easy to Adopt

Android apps are scripted in Java programming language that leverages a rich set of libraries.

- Any developer familiar with Java can build Android applications easily.
- As per a developer survey, many Java experts find it easier to write apps for Android as compared to programmers with command over other programming languages.

Tools required for android application development

- Tools are **freely available**.
- Following is the list of software's you will need before you start your Android application programming.
- Java Development Kit (JDK)
- Android Software Development Kit (SDK)
- Eclipse IDE
- Android Development Tools (ADT)
- Android Virtual Device (AVD)

Java Development Kit (JDK)

- The Android SDK makes **use of the Java SE (Standard Edition) Development Kit (JDK)**.
- If your computer does not have the JDK installed, you should start by downloading it from www.oracle.com/technetwork/java/javase/downloads/index.html and installing it.

- Set the path: Right-click on My Computer, select Properties, then Advanced, then Environment Variables. Then, you would update the PATH value and press the OK button.

JDK is used so that we can create applications using JAVA

Android Software Development Kit

A Software Development Kit (SDK) **that enables developers to create applications for the Android platform.**

•SDK consists of:

Debugger

Libraries

emulator

Documentation

Sample code

Tutorials

When **google releases a new version of android**, it also releases the **SDK** to required to develop features of that android version.

Installing the Android SDK Tools

- Use the setup wizard to install the tools.
- At end of the process, **SDK Manager has to be configured.**

Configuring the Android SDK Manager

•The **Android SDK Manager manages the various versions of the Android SDK** currently installed on your computer. When it is launched, you will see a list of items and whether or not they are currently installed on your computer. Check the relevant tools, documentation, and platforms you need for your project. Once you have selected the items you want, click the Install button to download them.

