SOS in Computer Science and Applications
Jiwaji University

Class: MBA (E-commerce) IV semester

Subject: Introduction to Linux & Android O.S.(402E3)

Topics: (I) Android, History

(II) Advantages, features, API levels

Android

- Android is an open source and Linux-based **Operating System** for mobile devices such as smart phones and tablet computers. Android was developed by the *Open Handset Alliance*, led by Google, and other companies.

- Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

- The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.

- On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 **Jelly Bean**. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance.

- The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

History of android

- Android was created in 2003 by Andy Rubin, who first started developing the OS for digital cameras. Soon, he realized that the market for digital camera operating systems perhaps wasn't all that big, and Android, Inc. diverted its attention toward smartphones.

- It wasn't until 2005 that Google purchased Android, Inc., and while not much about Android was known at the time, many took it as a signal that Google would use the platform to enter the phone business. Eventually, Google did enter the smartphone business — but not as a hardware manufacturer. Instead, it marketed Android to other manufacturers, first catching the eye of HTC, which used the platform for the first Android phone, the HTC Dream, in 2008.

- Beginning with that initial version of the operating system running on the HTC Dream, join us as we take a look at how Android has changed in the past decade.

Android advantages

- Android Is More Customizable Can change almost anything.
- In Android, any new publication can be done easily and without any review process
- Use a Different Messaging App for SMS
- Android Offers an Open Platform
- Easy access to the Android App Market
- Cost Effective
- Upcoming versions have a support to save RAW images
- Built in Beta Testing and staged rollout
- Native integration with Google cloud storage. 15GB free, $2/mo for 100GB, 1TB for $10. Apps available for Amazon Photos, OneDrive and Dropbox.
- Booming Job Prospects

Android features

- **Beautiful UI**

  Android OS basic screen provides a beautiful and intuitive user interface.

- **Connectivity**

  GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, Wi-Fi, LTE, NFC and WiMAX.

- **Storage**

  SQLite, a lightweight relational database, is used for data storage purposes.

- **Media support**

  H.263, H.264, MPEG-4 SP, AMR, AMR-WB, AAC, HE-AAC, AAC 5.1, MP3, MIDI, Ogg Vorbis, WAV, JPEG, PNG, GIF, and BMP.

- **Messaging**

  SMS and MMS

Android features

- **Web browser**

  Based on the open-source WebKit layout engine, coupled with Chrome's V8 JavaScript engine supporting

  HTML5 and CSS3.

- **Multi-touch**

  Android has native support for multi-touch which was initially made available in handsets such as the HTC Hero.

- **Multi-tasking**

  User can jump from one task to another and same time various application can run simultaneously.

- **Resizable widgets**

  Widgets are resizable, so users can expand them to show more content or shrink them to save space.

Android features

- **Multi-Language**

  Supports single direction and bi-directional text.

- **GCM**

  Google Cloud Messaging (GCM) is a service that lets developers send short message data to their users on Android devices, without needing a proprietary sync solution.

- **Wi-Fi Direct**

  A technology that lets apps discover and pair directly, over a high-bandwidth peer-to-peer connection.

- **Android Beam**

  A popular NFC-based technology that lets users instantly share, just by touching two NFC-enabled phones together.

Android API levels

API Level is an integer value that uniquely identifies the framework API revision offered by a version of the Android platform.

Platform Version	API Level	VERSION_CODE
Android 6.0	23	MARSHMALLOW
Android 5.1	22	LOLLIPOP_MR1
Android 5.0	21	LOLLIPOP
Android 4.4W	20	KITKAT_WATCH
Android 4.4	19	KITKAT
Android 4.3	18	JELLY_BEAN_MR2
Android 4.2, 4.2.2	17	JELLY_BEAN_MR1
Android 4.1, 4.1.1	16	JELLY_BEAN
Android 4.0.3, 4.0.4	15	ICE_CREAM_SANDWICH_MR1

Android API levels

Platform Version	API Level	VERSION_CODE
Android 4.0, 4.0.1, 4.0.2	14	ICE_CREAM_SANDWICH
Android 3.2	13	HONEYCOMB_MR2
Android 3.1.x	12	HONEYCOMB_MR1
Android 3.0.x	11	HONEYCOMB
Android 2.3.4		
Android 2.3.3	10	GINGERBREAD_MR1
Android 2.3.2		
Android 2.3.1		
Android 2.3	9	GINGERBREAD

Android API levels

Platform Version	API Level	VERSION_CODE
Android 2.2.x	8	FROYO
Android 2.1.x	7	ECLAIR_MR1
Android 2.0.1	6	ECLAIR_0_1
Android 2.0	5	ÉCLAIR
Android 1.6	4	DONUT
Android 1.5	3	CUPCAKE
Android 1.1	2	BASE_1_1
Android 1.0	1	BASE