Mobile Application Development- Android Intro, Installation

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Introduction to Android

- Android is an OS based on Linux with a Java programming interface. It is a comprehensive open source platform designed for mobile devices.
- First beta version of Android Software Development Kit (SDK) was released by Google in 2007 where as first commercial version, Android 1.0, was released in September 2008.

Features of Android:

- Beautiful UI, Connectivity, Storage, Media support, Messaging, Web browser, Multi-touch, Multi-tasking, Resizable widgets, Multi-Language, GCM, Wi-Fi Direct, Android Beam

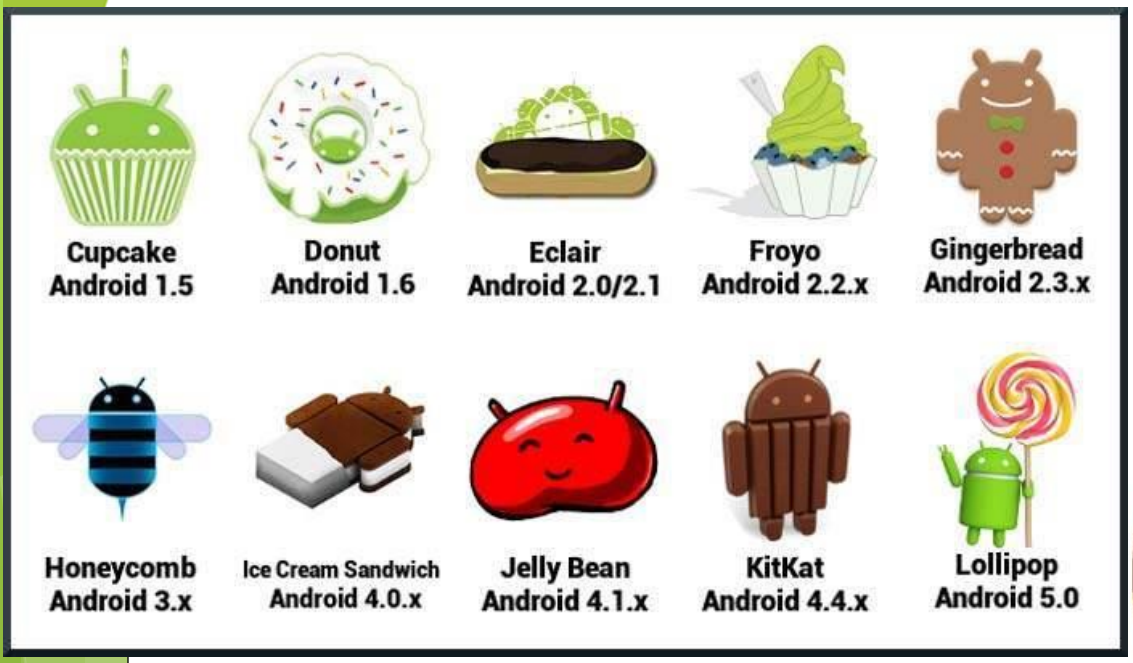
Android Applications:

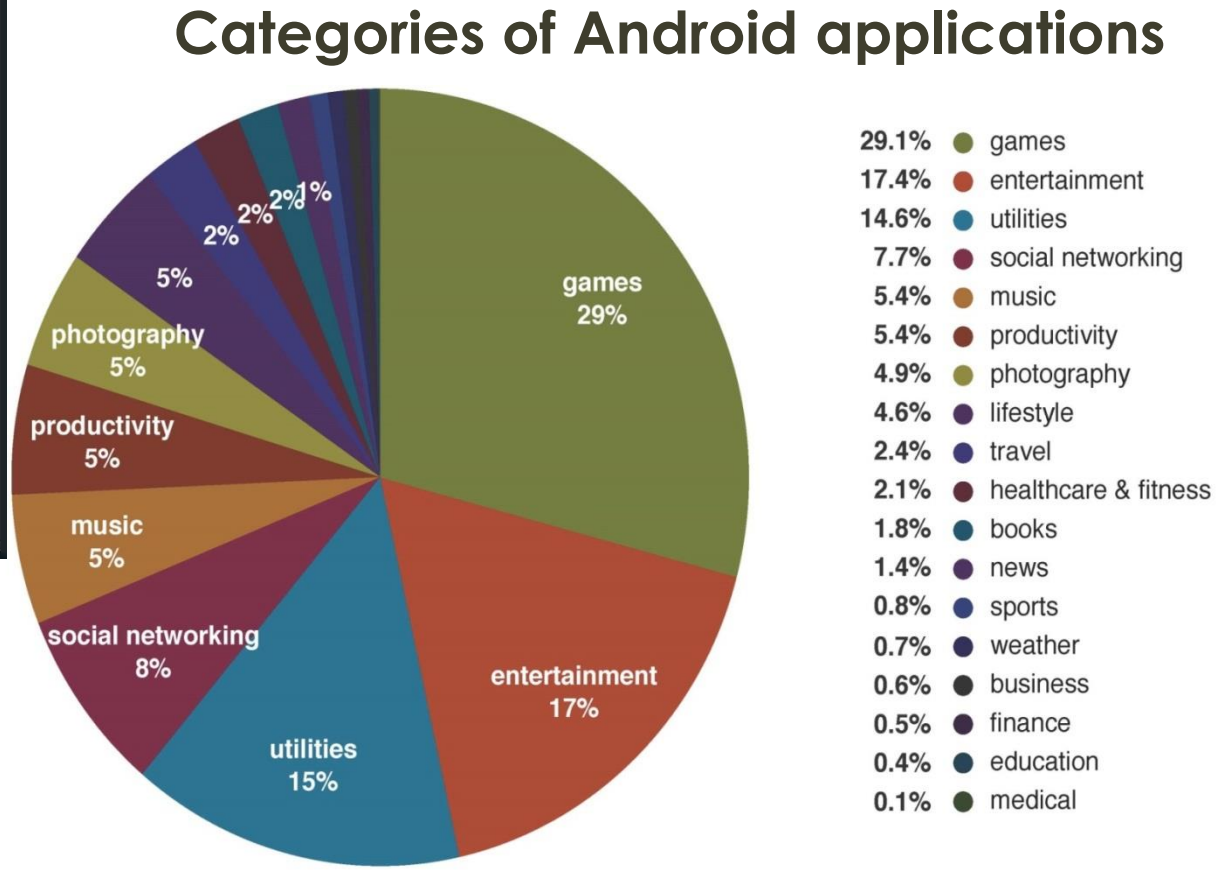
- Android applications are usually developed in the Java language using the Android Software Development Kit.
- Once developed, Android applications can be packaged easily and sold out either through a store such as Google Play, SlideME, Opera Mobile Store, Mobango, F-droid and the Amazon Appstore.

Introduction to Android

History of Android

- The code names of android ranges from A to L currently, such as Aestro, Blender, etc…





Requirements for Android

- **OS**

Android application development on either of the following operating systems:

- Microsoft Windows.
- Mac OS X 10.5.8 or later version with Intel chip.
- Linux including GNU C Library 2.7 or later.

- **Tools**

All the required tools to develop Android applications are freely available and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming.

1. Java JDK5 or later version
2. Android Studio / Android SDK and Eclipse IDE for Java Developers (optional) and Android Development Tools (ADT) Eclipse Plug-in (optional)

Requirements for Android

- **Download Android Studio**
- From http://developer.android.com/sdk/installing/index.html
- **System Requirements for Windows**
- Microsoft® Windows® 8/7/Vista (32 or 64-bit)
- 2 GB RAM minimum, 4 GB RAM recommended
- 400 MB hard disk space
- At least 1 GB for Android SDK, emulator system images, and caches
- 1280 x 800 minimum screen resolution
- Java Development Kit (JDK) 7
- Optional for accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality

Installation

- **Java**

1. Visit http://www.oracle.com/technetwork/java/javase/downloads/index.html
2. Install it.

- **Android Studio**

3. Visit http://developer.android.com/sdk/index.html
4. click the button *Download Android Studio*.
5. Accept terms, and click *Download*.
6. Run executable file of setup.
7. Follow the setup wizard to install Android Studio and any necessary SDK tools.
8. On some Windows systems, the launcher script does not find where Java is installed. If you encounter this problem, you need to set an environment variable indicating the correct location.
9. Select Start menu > Computer > System Properties > Advanced System Properties. Then open Advanced tab > Environment Variables and add a new system variable JAVA_HOME that points to your JDK folder, for example C:\Program Files\Java\jdk1.7.0_45

Installation

10. The individual tools and other SDK packages are saved outside the Android Studio application directory. If you need to access the tools directly, use a terminal to navigate to the location where they are installed. For example:
11. \Users\<user>\sdk\
12. Android Studio is now ready and loaded with the Android developer tools, but there are still a couple packages you should add to make your Android SDK complete.

Run

1. Run Android Studio as Administrator.
2. Before you create new project, click *Configure* from splash screen. Click *SDK Manager*.
3. Don’t select all. In bottom, in *Extra* section, select *Intel x86 Emulator Accelerator*.
4. Click *Install* button.

Android Emulator

- The Android SDK includes a mobile device emulator — a virtual mobile device that runs on your computer. The emulator lets you develop and test Android applications without using a physical device.

Limitations

- No support for placing or receiving actual phone calls. You can simulate phone calls (placed and received) through the emulator console, however.
- No support for USB connections
- No support for device-attached headphones
- No support for determining network connected state
- No support for determining SD card insert/eject
- No support for Bluetooth

Good Luck!