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Introduction to Android



Learning Objectives

- Defined android.
- Review the android versions.
- Determine the android features.



What Is Android?

Android is a programming platform and mobile operating system that is based on a modified version of Linux. In 2005, Google purchased Android and took over its development work.

The majority of the Android source code was made available under the Apache License because Google intended Android to be open and free. As a result, anyone who wants to utilize Android can do so by downloading the complete Android source code. Vendors can also alter Android and add their own proprietary extensions to it.

The main advantage of adopting Android is that it offers a unified approach to application development. Android represents an *ecosystem* for mobile apps. It's a powerful development framework that includes everything you need to build great apps using a mix of Java and XML. Developers need only develop for Android, and their applications should be able to run on numerous different devices from many different manufacturers, as long as the devices are powered using Android.

• Android Versions

Android has gone through quite a number of updates conceptually, visually, and functionally since its first release to provide advanced features to its users. Table 1-1 shows the various versions of Android and their codenames.

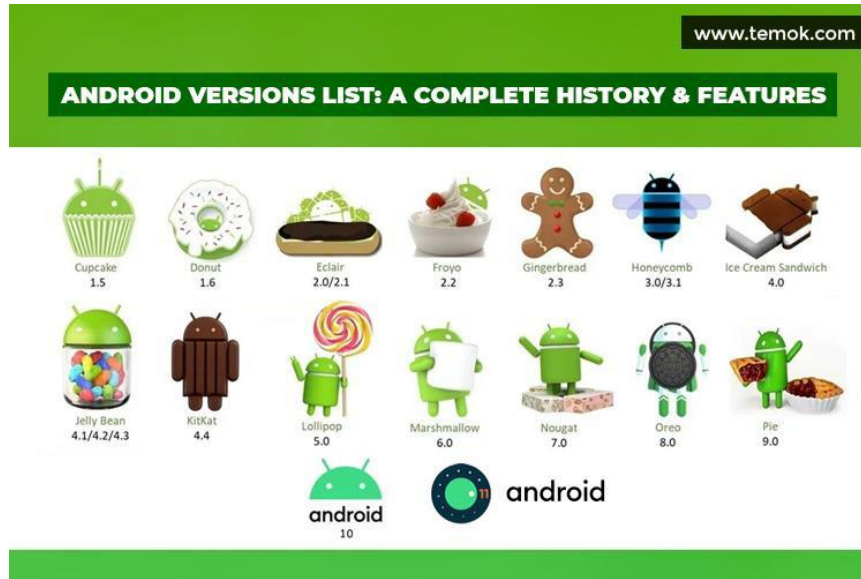



figure 1: Android Versions list

Code name	Version number	Initial release date	API level
N/A	1.0	23 September 2008	1
1.1	9 February 2009	2	
<u>Cupcake</u>	1.5	27 April 2009	3
<u>Donut</u> 	1.6	15 September 2009	4



 <u>Eclair</u>	2.0 – 2.1	26 October 2009	5–7
 <u>Froyo</u>	2.2 – 2.2.3	20 May 2010	8
 <u>Gingerbread</u>	2.3 – 2.3.7	6 December 2010	9–10
 <u>Honeycomb</u>	3.0 – 3.2.6	22 February 2011	11–13
 <u>Ice Cream Sandwich</u>	4.0 – 4.0.4	18 October 2011	14–15
 <u>Jelly Bean</u>	4.1 – 4.3.1	9 July 2012	16–18
 <u>KitKat</u>	4.4 – 4.4.4	31 October 2013	19–20

 Lollipop	5.0 – 5.1.1	12 November 2014	21–22
 Marshmallow	6.0 – 6.0.1	5 October 2015	23
 Nougat	7.0	22 August 2016	24
 Oreo	8.0	August 21, 2017	26

Table 1-1 the various versions of Android and their codenames.

• Features of Android

Android is open source and freely available to manufacturers for customization, there are no fixed hardware or software configurations. However, Android itself supports the following features:

- 1. Storage** — Uses SQLite, a lightweight relational database, for data storage.
- 2. Connectivity** — Supports GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth (includes A2DP and AVRCP), Wi-Fi, LTE, and WiMAX.
- 3. Messaging** — Supports both SMS and MMS.



- 4. Web browser** — Based on the open source WebKit, together with Chrome's V8 JavaScript engine.
- 5. Media support** — Includes support for the following media: H.263, H.264 (in 3GP or MP4 container), MPEG-4 SP, AMR, AMR-WB (in 3GP container), AAC, HE-AAC (in MP4 or 3GP container), MP3, MIDI, Ogg Vorbis, WAV, JPEG, PNG, GIF, and BMP.
- 6. Hardware support** — Accelerometer Sensor, Camera, Digital Compass, Proximity Sensor, and GPS
- 7. Multi-touch** — Supports multi-touch screens.
- 8. Multi-tasking** — Supports multi-tasking applications.
- 9. Flash support** — Android 2.3 supports Flash 10.1.
- 10. Tethering** — Supports sharing of Internet connections as a wired/wireless hotspot.



References

- DiMarzio, J. (2016). *Beginning Android Programming with Android Studio*. John Wiley & Sons.
- Smyth, Neil. *Android Studio 3.0 Development Essentials-Android 8 Edition*. Payload Media, Inc., 2017.