## What is Android?

* Android is an operating system, its purpose is to connect the user and the device.
* Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers.
* Android was developed by the *Open Handset Alliance*, led by Google, and other companies.
* 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.

**Android version and history:**

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| --- | --- | --- | --- |
| **Code name** | **Version numbers** | **API level** | **Release date** |
| No codename | 1.0 | 1 | September 23, 2008 |
| No codename | 1.1 | 2 | February 9, 2009 |
| Cupcake | 1.5 | 3 | April 27, 2009 |
| Donut | 1.6 | 4 | September 15, 2009 |
| Eclair | 2.0 - 2.1 | 5 - 7 | October 26, 2009 |
| Froyo | 2.2 - 2.2.3 | 8 | May 20, 2010 |
| Gingerbread | 2.3 - 2.3.7 | 9 - 10 | December 6, 2010 |
| Honeycomb | 3.0 - 3.2.6 | 11 - 13 | February 22, 2011 |
| Ice Cream Sandwich | 4.0 - 4.0.4 | 14 - 15 | October 18, 2011 |
| Jelly Bean | 4.1 - 4.3.1 | 16 - 18 | July 9, 2012 |
| KitKat | 4.4 - 4.4.4 | 19 - 20 | October 31, 2013 |
| Lollipop | 5.0 - 5.1.1 | 21- 22 | November 12, 2014 |
| Marshmallow | 6.0 - 6.0.1 | 23 | October 5, 2015 |
| Nougat | 7.0 | 24 | August 22, 2016 |
| Nougat | 7.1.0 - 7.1.2 | 25 | October 4, 2016 |
| Oreo | 8.0 | 26 | August 21, 2017 |
| Oreo | 8.1 | 27 | December 5, 2017 |
| Pie | 9.0 | 28 | August 6, 2018 |
| Android 10 | 10.0 | 29 | September 3, 2019 |
| Android 11 | 11 | 30 | September 8, 2020 |

**History:**

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| Android Architecture **android architecture or Android software stack is categorized into five parts:**   1. **linux kernel** 2. **native libraries (middleware),** 3. **Android Runtime** 4. **Application Framework** 5. **Applications**   **Let's see the android architecture first.**  **android software stack, architecture** 1) Linux kernel It is the heart of android architecture that exists at the root of android architecture. Linux kernel is responsible for device drivers, power management, memory management, device management and resource access. 2) Native Libraries On the top of linux kernel, there are Native libraries such as WebKit, OpenGL, FreeType, SQLite, Media, C runtime library (libc) etc.  The WebKit library is responsible for browser support, SQLite is for database, FreeType for font support, Media for playing and recording audio and video formats. 3) Android Runtime In android runtime, there are core libraries and DVM (Dalvik Virtual Machine) which is responsible for running android applications. DVM is like JVM but it is optimized for mobile devices. It consumes less memory and provides fast performance. 4) Android Framework On the top of Native libraries and android runtime, there is android framework. Android framework includes Android APIs such as UI (User Interface), telephony, resources, locations, Content Providers (data) and package managers. It provides a lot of classes and interfaces for android application development. 5) Applications On the top of the android framework, there are applications. All applications such as home, contact, settings, games, browsers are using android framework that uses android runtime and libraries. Android runtime and native libraries are using linux kernel. Android Activity Lifecycle Android Activity Lifecycle is controlled by 7 methods of android.app.Activity class. The android Activity is the subclass of ContextThemeWrapper class.  **Method:**  **onCreate :called when activity is first created.**  **onStart :called when activity is becoming visible to the user.**  **onResume :called when activity will start interacting with the user.**  **onPause :called when activity is not visible to the user.**  **onStop :called when activity is no longer visible to the user.**  **onRestart : called after your activity is stopped, prior to start.**  **onDestroy:called before the activity is destroyeandroid activity lifecycle** |

[**TextView**](https://www.tutlane.com/tutorial/android/android-textview-with-examples)

[**EditText**](https://www.tutlane.com/tutorial/android/android-edittext-with-examples)

[**AutoCompleteTextView**](https://www.tutlane.com/tutorial/android/android-autocompletetextview-with-examples)

[**Button**](https://www.tutlane.com/tutorial/android/android-button-with-examples)

[**ImageButton**](https://www.tutlane.com/tutorial/android/android-imagebutton-with-examples)

[**ToggleButton**](https://www.tutlane.com/tutorial/android/android-toggle-button-with-examples)

[**CheckBox**](https://www.tutlane.com/tutorial/android/android-checkbox-with-examples)

[**RadioButton**](https://www.tutlane.com/tutorial/android/android-radiobutton-with-examples)

[**RadioGroup**](https://www.tutlane.com/tutorial/android/android-radiogroup-with-examples)

[**ProgressBar**](https://www.tutlane.com/tutorial/android/android-progressbar-with-examples)

[**Spinner**](https://www.tutlane.com/tutorial/android/android-spinner-dropdown-list-with-examples)

[**TimePicker**](https://www.tutlane.com/tutorial/android/android-timepicker-with-examples)

[**DatePicker**](https://www.tutlane.com/tutorial/android/android-datepicker-with-examples)

[**SeekBar**](https://www.tutlane.com/tutorial/android/android-seekbar-with-examples)

[**AlertDialog**](https://www.tutlane.com/tutorial/android/android-alertdialog-with-examples#divaldg)

[**Switch**](https://www.tutlane.com/tutorial/android/android-switch-on-off-button-with-examples)

[**RatingBar**](https://www.tutlane.com/tutorial/android/android-ratingbar-with-examples)