1. **What is Android?**

 Is a mobile operating system developed by Google, based on a modified version of the Linux Kernel and other open source software and designed primarily for touch screen mobile devices such as smartphones and tablet. In addition, Google has further developed Android TV for televisions, Android Auto for cars, and Wear OS for wrist watches, each with a specialized user interface. Variants of Android are also used on game consoles, digital cameras, PCs and other electronics.

Initially developed by Android Inc., which Google bought in 2005, Android was unveiled in 2007, with the first commercial Android device launched in September 2008. The operating system has since gone through multiple major releases, with the current version being 9.0 "Pie", released in August 2018. The core Android source code is known as Android Open Source Project (AOSP), and is primarily licensed under the Apache License.

Android is software for mobile phones, tablets and a growing range of devices encompassing everything from wearable computing to in-car entertainment. It launched in 2003 and is the world’s most popular mobile operating system (OS).

1. **List all android versions**

[1. Cupcake](https://en.droidwiki.org/wiki/List_of_Android_version_names#Cupcake)

[2. Donut](https://en.droidwiki.org/wiki/List_of_Android_version_names#Donut)

[3. Eclair](https://en.droidwiki.org/wiki/List_of_Android_version_names#Eclair)

[4. Froyo](https://en.droidwiki.org/wiki/List_of_Android_version_names#Froyo)

[5. Gingerbread](https://en.droidwiki.org/wiki/List_of_Android_version_names#Gingerbread)

[6. Honeycomb](https://en.droidwiki.org/wiki/List_of_Android_version_names#Honeycomb)

[7. Ice Cream Sandwich](https://en.droidwiki.org/wiki/List_of_Android_version_names#Ice_Cream_Sandwich)

[8. Jelly Bean](https://en.droidwiki.org/wiki/List_of_Android_version_names#Jelly_Bean)

[9. KitKat](https://en.droidwiki.org/wiki/List_of_Android_version_names#KitKat)

[10. Lollipop](https://en.droidwiki.org/wiki/List_of_Android_version_names#Lollipop)

[11. Marshmallow](https://en.droidwiki.org/wiki/List_of_Android_version_names#Marshmallow)

[12. Nougat](https://en.droidwiki.org/wiki/List_of_Android_version_names#Nougat)

[13. Oreo](https://en.droidwiki.org/wiki/List_of_Android_version_names#Oreo)

[14. Pie](https://en.droidwiki.org/wiki/List_of_Android_version_names#Pie)

1. **Explain the update in each version of Android**

* [**Android 1.5 Cupcake**](https://en.wikipedia.org/wiki/Android_Cupcake)**(API 3)** April 27, 2009
* Support for third-party virtual keyboards with text prediction and user dictionary for custom words
* Support for Widgets – miniature application views that can be embedded in other applications (such as the Home screen) and receive periodic updates
* Video recording and playback in MPEG-4 and 3GP formats
* Auto-pairing and stereo support for Bluetooth (A2DP and AVRCP profiles)
* Copy and paste features in web browser
* User pictures shown for Favourites in Contacts
* Specific date/time stamp shown for events in call log, and one-touch access to a contact card from call log event
* Animated screen transitions
* Auto-rotation option
* New stock boot animation
* Ability to upload videos to YouTube
* Ability to upload photos to Picasa

[**Donut**](https://en.wikipedia.org/wiki/Android_Donut)**(API 4)**

September 15, 2009

* Voice and text entry search enhanced to include bookmark history, contacts, and the web
* Ability for developers to include their content in search results
* Multi-lingual speech synthesis engine to allow any Android application to "speak" a string of text
* Easier searching and ability to view app screenshots in Android Market
* Gallery, camera and camcorder more fully integrated, with faster camera access
* Ability for users to select multiple photos for deletion
* Updated technology support for [CDMA](https://en.wikipedia.org/wiki/IS-95)/EVDO, [802.1x](https://en.wikipedia.org/wiki/IEEE_802.1X), [VPNs](https://en.wikipedia.org/wiki/Virtual_private_network), and a text-to-speech engine
* Support for [WVGA](https://en.wikipedia.org/wiki/Wide_VGA) screen resolutions
* Speed improvements in searching and camera applications
* Expanded Gesture framework and new Gesture Builder development tool

[**Android 2.0 Eclair**](https://en.wikipedia.org/wiki/Android_Eclair)**(API 5)** October 26, 2009

* Expanded Account sync, allowing users to add multiple accounts to a device for synchronization of email and contacts
* Microsoft Exchange email support, with combined inbox to browse email from multiple accounts in one page
* Bluetooth 2.1 support
* Ability to tap a Contacts photo and select to call, SMS, or email the person
* Ability to search all saved SMS and MMS messages, with delete oldest messages in a conversation automatically deleted when a defined limit is reached
* Numerous new camera features, including flash support, digital zoom, scene mode, white balance, color effect and macro focus
* Improved typing speed on virtual keyboard, with smarter dictionary that learns from word usage and includes contact names as suggestions
* Refreshed browser UI with bookmark thumbnails, double-tap zoom and support for [HTML5](https://en.wikipedia.org/wiki/HTML5)
* Calendar agenda view enhanced, showing attending status for each invitee, and ability to invite new guests to events
* Optimized hardware speed and revamped UI
* Support for more screen sizes and resolutions, with better contrast ratio
* Improved [Google Maps](https://en.wikipedia.org/wiki/Google_Maps) 3.1.2
* Motion Event class enhanced to track multi-touch events
* Addition of live wallpapers, allowing the animation of home-screen background images to show movement

[**Android 2.2 Froyo**](https://en.wikipedia.org/wiki/Android_Froyo)**(API 8)** May 20, 2010

* Speed, memory, and performance optimizations
* Additional application speed improvements, implemented through JIT compilation[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-60)
* Integration of [Chrome](https://en.wikipedia.org/wiki/Google_Chrome)'s [V8 JavaScript engine](https://en.wikipedia.org/wiki/V8_(JavaScript_engine)) into the Browser application
* Support for the [Android Cloud to Device Messaging](https://en.wikipedia.org/wiki/Android_Cloud_to_Device_Messaging) (C2DM) service, enabling push notifications
* Improved Microsoft Exchange support, including security policies, auto-discovery, GAL look-up, calendar synchronization and remote wipe
* Improved application launcher with shortcuts to Phone and Browser applications
* USB tethering and [Wi-Fi hotspot](https://en.wikipedia.org/wiki/Wi-Fi_hotspot) functionality[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-wired_sorrel_2010-61)
* Option to disable data access over mobile network
* Updated Market application with batch and automatic update features
* Quick switching between multiple keyboard languages and their dictionaries
* Support for [Bluetooth](https://en.wikipedia.org/wiki/Bluetooth)-enabled car and desk docks
* Support for numeric and alphanumeric passwords
* Support for file upload fields in the Browser application
* The browser now shows all frames of animated GIFs instead of just the first frame only
* Support for installing applications to the expandable memory
* [Adobe Flash](https://en.wikipedia.org/wiki/Adobe_Flash) suppor
* Support for high-[PPI](https://en.wikipedia.org/wiki/Pixel_density) displays (up to 320 ppi), such as four-inch [720p](https://en.wikipedia.org/wiki/720p) screens[
* Gallery allows users to view picture stacks using a zoom gesture

[**Android 2.3 Gingerbread**](https://en.wikipedia.org/wiki/Android_Gingerbread)**(API 9)** December 6, 2010

* Updated user interface design with increased simplicity and speed
* Support for extra-large screen sizes and resolutions ([WXGA](https://en.wikipedia.org/wiki/WXGA_(graphics)) and higher)
* Native support for [SIP](https://en.wikipedia.org/wiki/Session_Initiation_Protocol) [VoIP](https://en.wikipedia.org/wiki/Voice_over_IP) internet telephony
* Faster, more intuitive text input in virtual keyboard, with improved accuracy, better suggested text and voice input mode
* Enhanced copy/paste functionality, allowing users to select a word by press-hold, copy, and paste
* Support for [Near Field Communication](https://en.wikipedia.org/wiki/Near_Field_Communication) (NFC), allowing the user to read an NFC tag embedded in a poster, sticker, or advertisement
* New audio effects such as reverb, equalization, headphone virtualization, and bass boost
* New [Download Manager](https://en.wikipedia.org/wiki/Download_Manager), giving users easy access to any file downloaded from the browser, email, or another application
* Support for multiple cameras on the device, including a front-facing camera, if available
* Support for [WebM](https://en.wikipedia.org/wiki/WebM" \o "WebM)/VP8 video playback, and [AAC](https://en.wikipedia.org/wiki/Advanced_Audio_Coding) audio encoding
* Improved [power management](https://en.wikipedia.org/wiki/Power_management) with a more active role in managing applications that are keeping the device awake for too long
* Enhanced support for native code development
* Switched from [YAFFS](https://en.wikipedia.org/wiki/YAFFS) to [ext4](https://en.wikipedia.org/wiki/Ext4) on newer devices
* Audio, graphical, and input enhancements for game developers
* Concurrent [garbage collection](https://en.wikipedia.org/wiki/Garbage_collection_(computer_science)) for increased performance
* Native support for more sensors (such as [gyroscopes](https://en.wikipedia.org/wiki/Gyroscope) and [barometers](https://en.wikipedia.org/wiki/Barometer))
* First Android version to feature an Easter egg. It was an image of the Bugdroid standing next to a zombie gingerbread man, with many more zombies in the background.

[**Android 3.0 Honeycomb**](https://en.wikipedia.org/wiki/Android_Honeycomb)**(API 11) February 22, 2011**

* Optimized tablet support with a new “holographic” user interface (removed again the following year with version 4.2)
* New easter egg, an image of a [Tron](https://en.wikipedia.org/wiki/Tron)-themed bumblebee
* Added System Bar, featuring quick access to notifications, status, and soft navigation buttons, available at the bottom of the screen
* Added Action Bar, giving access to contextual options, navigation, widgets, or other types of content at the top of the screen
* Simplified multitasking – tapping Recent Applications in the System Bar allows users to see snapshots of the tasks underway and quickly jump from one application to another
* Redesigned keyboard, making typing fast, efficient and accurate on larger screen sizes
* Simplified, more intuitive copy/paste interface
* Multiple browser tabs replacing browser windows, plus form auto-fill and a new “incognito” mode allowing anonymous browsing
* Quick access to camera exposure, focus, flash, zoom, front-facing camera, time-lapse, and other camera features
* Ability to view albums and other collections in full-screen mode in Gallery, with easy access to thumbnails for other photos
* New two-pane Contacts UI and Fast Scroll to let users easily organize and locate contacts
* New two-pane Email UI to make viewing and organizing messages more efficient, allowing users to select one or more messages
* Hardware acceleration
* Support for [multi-core processors](https://en.wikipedia.org/wiki/Multi-core_processor)
* Ability to encrypt all user data
* HTTPS stack improved with [Server Name Indication](https://en.wikipedia.org/wiki/Server_Name_Indication) (SNI)
* [Filesystem in Userspace](https://en.wikipedia.org/wiki/Filesystem_in_Userspace) (FUSE; kernel module)
* Disallows applications from having write access to secondary storage (memory cards on devices with internal primary storage) outside of designated, application-specific directories. Full access to primary internal storage is still allowed through a separate application-level permission.

[Ice Cream Sandwich](https://en.wikipedia.org/wiki/Android_Ice_Cream_Sandwich) (API 14) October 18, 2011

* Major refinements to the "Holo" interface with new Roboto font family
* Soft buttons from Android 3.x are now available for use on phones
* Separation of widgets in a new tab, listed in a similar manner to applications
* Easier-to-create folders, with a drag-and-drop style
* Improved visual voicemail with the ability to speed up or slow down voicemail messages
* Pinch-to-zoom functionality in the calendar
* Integrated screenshot capture (accomplished by holding down the Power and Volume-Down buttons)
* Improved error correction on the keyboard
* Ability to access applications directly from [lock screen](https://en.wikipedia.org/wiki/Lock_screen)
* Improved copy and paste functionality
* Better voice integration and continuous, real-time speech to text dictation
* Face Unlock, a feature that allows users to unlock handsets using facial recognition software[
* Automatic syncing of browser with users' Chrome bookmarks
* Data Usage section in settings that lets users set warnings when they approach a certain usage limit, and disable data use when the limit is exceeded
* Ability to shut down applications from the recent apps list with a swipe
* Improved camera application with zero shutter lag, time lapse settings, panorama mode, and the ability to zoom while recording
* Built-in photo editor
* New gallery layout, organized by location and person
* Refreshed "People" application with social network integration, status updates and hi-res images
* [Android Beam](https://en.wikipedia.org/wiki/Android_Beam), a near-field communication feature allowing the rapid short-range exchange of web bookmarks, contact info, directions, YouTube videos and other data[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-CWnostalgia-87)
* Support for the [WebP](https://en.wikipedia.org/wiki/WebP" \o "WebP) image format[
* Hardware acceleration of the UI[
* [Wi-Fi Direct](https://en.wikipedia.org/wiki/Wi-Fi_Direct)[
* [1080p](https://en.wikipedia.org/wiki/1080p) video recording for stock Android devices
* Android VPN Framework (AVF), and TUN (but not TAP) kernel module. Prior to 4.0, VPN software required rooted Android.

[**Jelly Bean**](https://en.wikipedia.org/wiki/Android_Jelly_Bean)**(API 16) July** 9, 2012

* Smoother user interface:
  + Vsync timing across all drawing and animation done by the Android framework, including application rendering, touch events, screen composition and display refresh
  + Triple buffering in the graphics pipeline
  + CPU input boost
  + Synchronizing touch to vsync timing
* Enhanced [accessibility](https://en.wikipedia.org/wiki/Accessibility)
* Bi-directional text and other language support
* User-installable keyboard maps
* Expandable notifications
* Ability to turn off notifications on an application-specific basis
* Shortcuts and widgets can automatically be re-arranged or re-sized to allow new items to fit on home screens
* Bluetooth data transfer for Android Beam
* Tablets with smaller screens now use an expanded version of the interface layout and home screen used by phones.
* Improved camera application
* Multichannel audio
* The [Fraunhofer FDK AAC](https://en.wikipedia.org/wiki/Fraunhofer_FDK_AAC" \o "Fraunhofer FDK AAC) codec becomes standard in Android, adding AAC 5.1 channel encoding/decoding
* USB audio (for external sound [DACs](https://en.wikipedia.org/wiki/Digital-to-analog_converter))
* Audio chaining (also known as [gapless playback](https://en.wikipedia.org/wiki/Gapless_playback))
* Ability for other launchers to add widgets from the application drawer without requiring root access

[**Android 4.4 KitKat**](https://en.wikipedia.org/wiki/Android_KitKat)**(API 19)** October 31, 2013[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-Android_4.4_KitKat-151)

* Refreshed interface with white elements instead of blue
* Clock no longer shows bold hours; all digits are thin. The H, M, and S markings for the stopwatch and timer have been removed, leaving just the numbers.
* Ability for applications to trigger translucency in the navigation and status bars
* Ability for applications to use "immersive mode" to keep the navigation and status bars hidden while maintaining user interaction
* Action overflow menu buttons are always visible, even on devices with a "Menu" key, which was officially deprecated by Android 4.0
* Restriction for applications when accessing external storage, except for their own directories
* Optimizations for performance on devices with lower specifications, including [zRAM](https://en.wikipedia.org/wiki/Zram" \o "Zram) support and "low RAM" device API[
* Wireless printing capability[
* NFC [host card emulation](https://en.wikipedia.org/wiki/Host_card_emulation), enabling a device to replace [smart cards](https://en.wikipedia.org/wiki/Smart_card)[
* WebViews now based on [Chromium](https://en.wikipedia.org/wiki/Chromium_(web_browser)) engine (feature parity with [Chrome for Android](https://en.wikipedia.org/wiki/Google_Chrome_for_Android) 30)
* Expanded functionality for notification listener services[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-Nexus_5_review-149)
* Public API for developing and managing [text messaging](https://en.wikipedia.org/wiki/Short_Message_Service) clients[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-adb-kitkatsms-156)
* Storage Access Framework, an API allowing apps to retrieve files in a consistent manner. As part of the framework, a new system file picker allows users to access files from various sources (including those exposed by apps, such as online storage services)
* New framework for UI transitions
* Sensor batching, step detector and counter APIs[
* Settings application now makes it possible to select default text messaging and home (launcher) application
* Audio tunneling, audio monitoring and loudness enhance[
* Built-in screen recording feature (primarily for developers, as usage of [ADB](https://en.wikipedia.org/wiki/Android_Debug_Bridge) is required)[
* Native [infrared blaster](https://en.wikipedia.org/wiki/Infrared_blaster) API
* Verified boot
* Enforcing [SELinux](https://en.wikipedia.org/wiki/SELinux" \o "SELinux)
* Expanded accessibility APIs and system-level [closed captioning](https://en.wikipedia.org/wiki/Closed_captioning) settings
* [Android Runtime](https://en.wikipedia.org/wiki/Android_Runtime) (ART) introduced as a new experimental application [runtime environment](https://en.wikipedia.org/wiki/Runtime_environment), not enabled by default, as a replacement for the [Dalvik](https://en.wikipedia.org/wiki/Dalvik_(software)" \o "Dalvik (software)) virtual machine[
* [Bluetooth Message Access Profile](https://en.wikipedia.org/wiki/Message_Access_Profile) (MAP) support
* Disabled access to battery statistics by third-party applications1
* Settings application no longer uses a multi-pane layout on devices with larger screens
* Wi-Fi and mobile data activity (TX/RX) indicators are moved to quick settings[
* Disables text wrapping in the WebView browser component

[**Lollipop**](https://en.wikipedia.org/wiki/Android_Lollipop)**(API 21)** November 12, 2014

* [Android Runtime](https://en.wikipedia.org/wiki/Android_Runtime) (ART) with [ahead-of-time (AOT) compilation](https://en.wikipedia.org/wiki/Ahead-of-time_compilation" \o "Ahead-of-time compilation) and improved garbage collection (GC), replacing [Dalvik](https://en.wikipedia.org/wiki/Dalvik_(software)" \o "Dalvik (software)) that combines bytecode [interpretation](https://en.wikipedia.org/wiki/Interpreter_(computing)) with [trace-based just-in-time (JIT) compilation](https://en.wikipedia.org/wiki/Tracing_just-in-time_compilation)
* Support for [64-bit](https://en.wikipedia.org/wiki/64-bit_computing) CPUs
* [OpenGL ES](https://en.wikipedia.org/wiki/OpenGL_ES) 3.1 and Android Extension Pack (AEP) on supported GPU configurations
* Recent activities screen with tasks instead of applications, up to a configured maximum of tasks per application
* [Vector drawables](https://en.wikipedia.org/wiki/Vector_graphics), which scale without losing definition
* Support for print previews
* [Material design](https://en.wikipedia.org/wiki/Material_design), bringing a restyled user interface
* Refreshed lock screen, no longer supporting widgets
* Refreshed notification tray and quick settings pull-down
* [Project Volta](https://en.wikipedia.org/wiki/Project_Volta), for battery life improvements
* Searches can be performed within the system settings for quicker access to particular settings
* Lock screen provides shortcuts to application and notification settings[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-IndiaTimes-186)
* Guest logins and multiple user accounts are available on more devices, such as phones
* Audio input and output through USB devices
* Third-party applications regain the ability to read and modify data located anywhere on external storage, such as on [SD cards](https://en.wikipedia.org/wiki/SD_card).
* Pinning of an application's screen for restricted user activity.
* Recently used applications are remembered even after restarting the device.
* WebViews receive updates independently through [Google Play](https://en.wikipedia.org/wiki/Google_Play) for security reasons, instead of relying on system-wide vendor updates
* Addition of 15 new languages: Basque, Bengali, Burmese, Chinese (Hong Kong), Galician, Icelandic, Kannada, Kyrgyz, Macedonian, Malayalam, Marathi, Nepali, Sinhala, Tamil and Telugu
* *Tap and Go* allows users to quickly migrate to a new Android device, using NFC and Bluetooth to transfer Google Account details, configuration settings, user data and installed applications
* A flashlight-style application is included, working on supported devices with a camera flash.
* User-customizable priorities for application notifications.
* Smart lock feature
* [SELinux](https://en.wikipedia.org/wiki/SELinux) in enforcing mode for all domains
* Updated emoji[[](https://en.wikipedia.org/wiki/Android_version_history#cite_note-emojipedia-50-194)
* Improved [accessibility](https://en.wikipedia.org/wiki/Accessibility) support (e.g. [switch access](https://en.wikipedia.org/wiki/Switch_access) support)
* Block-based over-the-air (OTA) updates for new devices[

[**Marshmallow**](https://en.wikipedia.org/wiki/Android_Marshmallow)**(API 23)** October 5, 2015

* Contextual search from keywords within apps
* Introduction of Doze mode, which reduces CPU speed while the screen is off in order to save battery life
* App Standby feature
* Alphabetically accessible vertical application drawer[
* Application search bar and favorites
* Native fingerprint reader support
* Direct Share feature for target-specific sharing between apps
* Renamed "Priority" mode to "Do Not Disturb" mode
* App Linking for faster instinctive opening of links with corresponding applications
* Larger Application folders with multiple pages
* Post-install/run-time permission requests
* [USB-C](https://en.wikipedia.org/wiki/USB-C) support
* Demo Mode feature for screenshot-capture usage[
* Automatic full data backup and restore for apps[
* 4K display mode for apps
* Adoptable External storage to behave like Internal Storage[ (However, this causes more actual problems than the hypothetical ones it was probably designed to solve.
* [MIDI](https://en.wikipedia.org/wiki/MIDI) support for musical instruments
* Experimental multi-window feature
* Support for actions by third-party apps in the text selection menu
* App permissions now granted individually at run-time, not all-or-nothing at install time.[
* Miracast support dropped

[**Nougat**](https://en.wikipedia.org/wiki/Android_Nougat)**(API 24)** August 22, 2016

* [Unicode 9.0](https://en.wikipedia.org/wiki/Unicode_9.0) [emoji](https://en.wikipedia.org/wiki/Emoji) and skin tone modifier support (and exposes a subset of [ICU4J](https://en.wikipedia.org/wiki/ICU4J) APIs)
* Ability to display color calibration
* Ability to screen zoom
* Ability to switch apps by double tapping in overview button
* Added Emergency information part
* Added the "Clear All" button in Overview screen
* Another system partition, which gets updated when not in use, allowing for seamless system updates
* [Daydream](https://en.wikipedia.org/wiki/Daydream_(Google)) virtual reality platform (VR interface)
* Improved Doze functionality, which aims to prolong battery life
* Improvements to file browser
* More Quick Settings options
* Multi-window support, which supports floating apps on a desktop layout
* New Data Saver mode, which can force apps to reduce bandwidth usage
* New JIT Compiler, making for 75 percent faster app installations and a 50 percent reduction in compiled code size
* Just in Time (JIT) compiler with code profiling to ART, which lets it constantly improve the performance of Android apps as they run[
* [Picture-in-picture](https://en.wikipedia.org/wiki/Picture-in-picture) support for Android TV
* Redesigned notification shade, featuring instant access to certain settings
* Redesigned Overview screen
* Replaced notification cards with notification sheets
* Settings app navigation drawer
* [Vulkan 3D](https://en.wikipedia.org/wiki/Vulkan_(API)) rendering API
* Multiple Device Locales

[**Pie**](https://en.wikipedia.org/wiki/Android_Pie)**(API 28) August 6, 2018**

* New user interface for the quick settings menu
* The clock has moved to the left of the notification bar.
* The "dock" now has a semi-transparent background
* Battery saver no longer shows an orange overlay on the notification and status bars.
* A "screenshot" button has been added to the power options.
* A new "Lockdown" mode which disables biometric authentication once activated
* Rounded corners across the UI
* New transitions for switching between apps, or activities within apps
* Richer messaging notifications, where a full conversation can be had within a notification, full scale images, and smart replies akin to Google's new app, Reply
* Support for display cutouts
* Redesigned volume slider
* Battery percentage now shown in Always-On Display
* Lock screen security changes include the possible return of an improved NFC Unlock.
* Experimental features (which are currently hidden within a menu called Feature Flags) such as a redesigned About Phone page in settings, and automatic Bluetooth enabling while driving
* [DNS over TLS](https://en.wikipedia.org/wiki/DNS_over_TLS)
* A new optional gesture-based system interface, allowing users to navigate the OS using swipes more often than the traditional UI
* Redesigned multitask app switcher with Google search bar and app drawer built in.
* Android Dashboard, which tells the user how much time you're spending on your device and in apps, and allows the user to set time limits on apps
* "Shush", an enhanced version of Do Not Disturb mode activated by placing the phone face down, which mutes standard notifications
* "Adaptive Battery" prediction, which makes use of Doze to hibernate user apps the OS determines the user will not use
* Auto Brightness feature modifies screen brightness based on user habits
* Wind Down option lets Android users set a specific bed time that enables Do Not Disturb and turns the entire phone's interface gray to discourage further use at night
* Vulkan 1.1 Support

[**Oreo**](https://en.wikipedia.org/wiki/Android_Oreo)**(API 27)** December 5, 2017

* **Project Treble**, the biggest change to the foundations of Android to date: a modular architecture that makes it easier and faster for hardware makers to deliver Android updates
* Picture-in-picture support
* Support for Unicode 10.0 emoji (5.0) and replacement of all blob-shaped emojis by round ones with gradient and outline
* Redesigned Quick Settings and Settings with white background and respectively black and Accent font color
* Restructured Settings by regrouping in sections similar entries
* Adaptive icons
* Notification improvements
  + Notification channels
  + Notification dots (badges)
  + Notification snoozing
  + Notification shade multi-colors (for music album art, messengers etc)
* System-wide Autofill framework
* Sony [LDAC](https://en.wikipedia.org/wiki/LDAC_(codec)) codec support
* App-specific unknown sources
* Multi-display support
* 2 times faster boot time
* Apps background execution and location limits
* Google Play Protect
* Downloadable fonts
* Integrated printing support
* Color management (deep color and wide color gamut)
* Wi-Fi Assistant