ANDROID MEET UP

THE PAST, PRESENT AND FUTURE OF ANDROID

A SHORT HISTORY OF ANDROID VERSIONS

1.0 UP TO NOW

THE DAWN OF ANDROID

- Google bought a company called Android back in July 2005

- There appears to be no codename assigned to versions 1.0 Android OS

- In November 2007, when Google suddenly announced that they were indeed working on a phone (Google Phone). More than that, they were also working on a brand-new mobile operating system called Android, based on the Linux kernel, to be used by the Open Handset Alliance, a group of 84 different hardware makers, carriers, and other mobile-related companies

OPEN HANDSET ALLIANCE

- Mobile operators: Vodafone, Telecome Italia, Telus, T-Mobile, KDDI, China Mobile

- Handset manufacturers: Acer, Alcatel, ASUS, Dell, HTC, Samsung, NEC

- Semiconductor companies: ARM, Intel, NVIDIA, Synaptics, Qualcomm

- Software companies: Google, NXP, eBay, ACCESS Co, SVOX, SkyPop

- Commerc companies: Accenture, Aplix, Noser, WindRiver, etc.

1.1

- HTC was the first phone maker to get a real consumer phone out, the T-Mobile G1 (also known as the HTC Dream outside of US), on October 2008

- An update of Android, version 1.1, was released in February 2009. According to Android Police, this version was officially named "Petit Four", but since it was rarely seen, the name was also rarely mentioned

1.5 CUPCAKE

- The first significant version of Android OS that really showcased the power of the platform was V1.5, codenamed "Cupcake."

- As Cupcake starts with letter "C", many have suspected that 1.0 had a codename starting with "A" and 1.1 had one starting with "B," but no actual codenames were ever assigned. Someone assumed that an earlier mention of "Astro" and "Bender" by Android engineers

- Among the many changes with Cupcake, third-party keyboard and Widgets were enabled and phone could upload directly to YouTube and Picasa

1.6 DONUT

- Android V1.6, codenamed "Donut," was released in September 2009

- Quick search box: search results from the web and your phone's local content

- Screen size diversity: now Android runs on a variety of screen resolutions (other than 320 x 480) and aspect ratios

- Android Market: before there was Google Play, there was Android Market

2.0, 2.1 ECLAIR

- Android 2.0 was released in October 2009, with a bugfix version (2.0.1) coming out in December 2009. Android 2.1 was released in January 2010

- Google Maps navigation: forward-looking 3D view, voice guidance and traffic information

- Home screen customization: custom ringtones, live wallpapers, ability to arrange apps and widgets across multiple screens and in folders

- Speech-To-Text: Éclair replaced the comma key on the soft keyboard with a microphone, now your spoken words appeared on your screen

2.2 FROYO

- Voice actions: searching, getting directions, making notes, setting alarms and more – with just the sound of your voice

- Portable hotspot: USB tethering let you turn your phone into a portable Wi-Fi hotspot

- Performance: introduction of Dalvik JIT compiler which delivered up to 5x performance improvement in CPU-bound code. IT also brought the V8 JavaScript engine to the browser, resulting in 2-3x improvement in JavaScript performance

2.3, 2.4 GINGERBREAD

- On December 6th, 2010, Google officially announced the first phone with Android OS 2.3 Gingerbread. The phone was the Nexus S, which Google co-developed with Samsung

- Gaming APIs: rich, graphic-intensive 3D games thanks to new lower level access audio, device controls, graphics and storage

- NFC: transmit information between devices just by bringing them close together

- Battery management: find out how much of energy each aspect of your device consumes

- Easter eggs

3.0, 3.1, 3.2 HONEYCOMB

- Honeycomb was released in February 2011, and was rapidly followed by 3.1 and 3.2 in July and August of 2011

- Tablets: with larger layout pattern, it enhanced the experience of reading books, watching videos, exploring maps and more

- System bar: physical Home, Back and Menu buttons became a legacy

- Quick Settings: time, date, battery life, connection status, etc. - all in one place

4.0 ICE CREAM SANDWITCH

- Released in October 2011

- Custom Home screen: introduced app folders and favorite tray. Widgets became more flexible, expand them to show more content or shrink to save space

- Data usage control: track how much data you use, set warning levels and hard limits

- Android beam: share apps, contacts, music and videos with someone else – all without needing to open menu or pair devices

4.1 JELLY BEAN

- Jelly Bean came out in 2012

- Google Now: pioneering a new level of mobile assistance

- Actionable notifications: notifications became expandable, showing more information and let you respond quickly

- Account switching: enabled multiple users on one device

4.4 KITKAT

- Google announced that Android 4.4 would be named KitKat on September 3, 2013

- Voice "OK Google": get things done without touching your screen (Alexa, Siri, Bixby)

- Dalvik to ART: experimental

- Smart dialer: look for matches from local listing in Google Maps

5.0 LOLLIPOP

- Now relies on ART: Dalvik became discontinued

- Material design: new look and feel based on shadows and motion

- Multiscreen: since Lollipop works on all devices, you can pick up where you left off with songs, apps, photos and even recent searches

- Notifications: moved to lockscreen, which let you view and respond at once

6.0 MARSHMALLOW

- Now on tap: get context assistance tapping and holding Home button at any place (app, browser, etc)

- Permissions: define what you wnt to share with your app and when

- Battery: Doze mode let idle apps consume little to no battery, hibernating the phone

7.0 NOUGAT

- Released in 2016

- New AOT compiler based on ART

- Unicode 9.0 Emoji support: genders and skintone

- Vulkan 3D rendering API

- Split screen: Now it was official in Android, not only for Samsung

8.0 OREO

- Released in 2017

- Project Treble: companies like Qualcomm and NVIDIA can add their required software outside of the main Android framework (vendor partition and Android partition)

- Connectivity: high quality Bluetooth audio, Neighborhood Aware Networking – using Wi-Fi w/o central point

- Android Go edition: low end devices supported

- Neural Network API: computationally intensive operations on mobile devices

9.0 PIE

- Notifications update: enhance on smart reply

- Multi-camera support: access streams simultaneously from two or more cameras – seamless zoom, bokeh and stereo vision

- Indoor positioning: if device measured 3 or more Wi-Fi access points, it is possible to estimate device position within 1 to 2 meters accuracy

THINGS AROUND ANDROID THESE DAYS: KOTLIN

- In July 2011, JetBrains unveiled Project Kotlin, a new language for the JVM

- The name comes from Kotlin island, near St. Petersburg (analogy to Java island in Indonesia)

- The inspiration was taken from Scala, but compile time is said to be as in Java

- At Google I/O 2017, Google announced first-class support for Kotlin on Android

- Kotlin v1.2 was released on November 28, 2017. Sharing code between JVM and Javascript platforms feature was newly added to this release

- Kotlin v1.3 was released on October 29, 2018, bringing coroutines for asynchronous programming

FIREBASE

- Authentication: sign in and onbording experience for end users

- Realtime database: cloud-hosted NoSQL database that lets you store and sync data between your users in realtime

- Crashlytics: track, prioritize, and fix stability issues that erode app quality, in realtime

- Test Lab: physical and virtual devices that allow you to run tests that simulate actual usage environments

- Google Analytics: reporting on up to 500 distinct events as well as custom events

- Firebase Cloud Messaging: former GCM, allows you to deliver and receive messages and notifications

- Remote config: change the behavior and appearance of your app on the fly. Customize by audience segment, release new content, and split test to validate improvements, all without waiting for app store approval

- Deep links: smart URLs that allow you to send existing and potential users to any location within your iOS or Android app

FLUTTER

- It is used to develop applications for Android and iOS, as well as being the primary method of creating applications for Google Fuchsia

- Dart platform: Dart VM, JIT compiler for Android, AOT compiler for IOS, hot reload support

- Widgets: stateful and stateless, Material and Cupertino

- Composing instead of extention: like ViewGroup in Android

- Navigation: Routes (screens) in Navigator instead of Intents

- Resources: assets instead of res/drawable-XXX (same as IOS)

- And a lot more....

FUCHSIA

HYBRIDS/CROSSPLATFORM

ANDROID JETPACK