Android

Android (As of 2015, Android has the largest installed base of all operating systems world-wide)

Largely from https://en.wikipedia.org/wiki/Android_(operating_system)

Android, Inc. was founded in Palo Alto, California in October 2003 by Andy Rubin (co-founder of Danger), Rich Miner (co-founder of Wildfire Communications, Inc.), Nick Sears (once VP at T-Mobile), and Chris White (headed design and interface development at WebTV to develop, in Rubin's words, "smarter mobile devices that are more aware of its owner's location and preferences". In July 2005, Google acquired Android Inc. for at least $50 million, whose key employees, including Rubin, Miner and White, stayed at the company after the acquisition.

On November 5, 2007, the Open Handset Alliance, a consortium of technology companies including Google, device manufacturers such as HTC, Sony and Samsung, wireless carriers such as Sprint Nextel and T-Mobile, and chipset makers such as Qualcomm and Texas Instruments, unveiled itself, with a goal to develop open standards for mobile devices. That day, Android was unveiled as its first product, a mobile device platform built on the Linux kernel. The first commercially available smartphone running Android was the HTC Dream, released on October 22, 2008.

Android's source code is released by Google under open source licenses, although most Android devices ultimately ship with a combination of open source and proprietary software, including proprietary software required for accessing Google services. Android is popular with technology companies that require a ready-made, low-cost and customizable operating system for high-tech devices. Its open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which add new features for advanced users or bring Android to devices originally shipped with other operating systems. At the same time, as Android has no centralised update system most Android devices fail to receive security updates: research in 2015 concluded that almost 90% of Android phones in use had known but unpatched security vulnerabilities due to lack of updates and support. The success of Android has made it a target for patent litigation as part of the so-called "smartphone wars" between technology companies.

In 2014, Google launched Android One, a line of smartphones mainly targeting customers in the developing world. In May 2015, Google announced Project Brillo as a cut-down version of Android that uses its lower levels (excluding the user interface), intended for the "Internet of Things" (IoT) embedded systems.

In addition to running on smartphones and tablets, several vendors run Android natively on regular PC hardware with a keyboard and mouse. In addition to their availability on commercially available hardware, similar PC hardware–friendly versions of Android are freely available from the Android-x86 project, including customized Android 4.4. Using the Android emulator that is part of the Android SDK, or by using BlueStacks or Andy, Android can also run non-natively on x86. Chinese companies are building a PC and mobile operating system, based on Android, to "compete directly with Microsoft Windows and Google Android". The Chinese Academy of Engineering noted that "more than a dozen" companies were customizing Android following a Chinese ban on the use of Windows 8 on government PCs.

Applications ("apps"), which extend the functionality of devices, are written using the Android software development kit (SDK) and, often, the Java programming language that has complete access to the Android APIs. Java may be combined with C/C++, together with a choice of non-default runtimes that allow better C++ support;

the Go programming language is also supported since its version 1.4, which can also be used exclusively although with a restricted set of Android APIs. The SDK includes a comprehensive set of development tools, including a debugger, software libraries, a handset emulator based on QEMU, documentation, sample code, and tutorials. Initially, Google's supported integrated development environment (IDE) was Eclipse using the Android Development Tools (ADT) plugin; in December 2014, Google released Android Studio, based on IntelliJ IDEA, as its primary IDE for Android application development. Other development tools are available, including a native development kit (NDK) for applications or extensions in C or C++, Google App Inventor, a visual environment for novice programmers, and various cross platform mobile web applications frameworks. In January 2014, Google unveiled an framework based on Apache Cordova for porting Chrome HTML 5 web applications to Android, wrapped in a native application shell. Android's kernel is based on one of the Linux kernel's long-term support (LTS) branches. Since April 2014, Android devices mainly use versions 3.4 or 3.10 of the Linux kernel. The specific kernel version depends on the actual Android device and its hardware platform; Android has used various kernel versions since the version 2.6.25 that was used in Android 1.0.

Google provides major incremental upgrades to Android every six to nine months, with confectionery-themed names, which most devices are capable of receiving over the air. The latest major release is Android 6.0 "Marshmallow".

Android is a Linux distribution according to the Linux Foundation, Google's open-source chief Chris DiBona, and several journalists. Others, such as Google engineer Patrick Brady, say that Android is not Linux in the traditional Unix-like Linux distribution sense; Android does not include the GNU C Library (it uses Bionic as an alternative C library) and some of other components typically found in Linux distributions.

Linux Mint

Linux Mint is a community-driven Linux distribution based on Debian and Ubuntu that strives to be a "modern, elegant and comfortable operating system which is both powerful and easy to use." Linux Mint provides full out-of-the-box multimedia support by including some proprietary software and comes bundled with a variety of free and open-source applications. Its motto is "from freedom came elegance."

(Largely from https://en.wikipedia.org/wiki/Linux_Mint)

In 2010, Linux Mint released Linux Mint Debian Edition. Unlike the other Ubuntu-based editions, LMDE was originally a rolling release based directly on Debian and was not tied to Ubuntu packages or its release schedule. It was announced on May 27, 2015 that the Linux Mint team would no longer support the original rolling release version of LMDE after January 1, 2016. LMDE 2 "Betsy," the current release of LMDE, is a long term support release based on Debian Jessie. When LMDE 2 was released it was announced that all LMDE users would be automatically upgraded to new versions of MintTools software and new Desktop Environments before they were released into the main edition of Linux Mint.

On 20 February 2016, the Linux Mint website was breached by unknown hackers, who briefly replaced download links for a version of Linux Mint with a modified version that contained malware. The hackers also breached the database of the website's user forum. An interesting blog was posted (http://blog.linuxmint.com/?p=3007) explaining the steps taken to address future issues.

According to http://distrowatch.com/, over the last year Mint attracted unique visits daily from over three thousand different IP addresses followed by Debian at two thousand and Ubuntu at over sixteen hundred attesting to the popularity of this line of distributions. I would go so far as saying it is the most used distribution among individual personal systems.

BSD

Largely from: https://en.wikipedia.org/wiki/Berkeley_Software_Distribution

4.3BSD-Reno came in early 1990. It was an interim release during the early development of 4.4BSD, and its use was considered a "gamble", hence the naming after the gambling center of Reno, Nevada. This release was explicitly moving towards POSIX compliance, and, according to some, away from the BSD philosophy (as POSIX is very much based on System V, and Reno was quite bloated compared to previous releases. Among the new features were an NFS implementation from the University of Guelph and support for the HP 9000 range of computers, originating in the University of Utah's "HPBSD" port.

In August 2006, InformationWeek magazine rated 4.3BSD as the "Greatest Software Ever Written". They commented: "BSD 4.3 represents the single biggest theoretical under-girder of the Internet."

Net/2 was the basis for two separate ports of BSD to the Intel 80386 architecture: the free 386BSD by William Jolitz and the proprietary BSD/386 (later renamed BSD/OS) by Berkeley Software Design (BSDi). 386BSD itself was short-lived, but became the initial code base of the NetBSD and FreeBSD projects that were started shortly thereafter.

BSDi soon found itself in legal trouble with AT&T's Unix System Laboratories (USL) subsidiary, then the owners of the System V copyright and the Unix trademark. The USL v. BSDi lawsuit was filed in 1992 and led to an injunctionon the distribution of Net/2 until the validity of USL's copyright claims on the source could be determined.

The lawsuit slowed development of the free-software descendants of BSD for nearly two years while their legal status was in question, and as a result systems based on the Linux kernel, which did not have such legal ambiguity, gained greater support. Although not released until 1992, development of 386BSD predated that of Linux. Linus Torvalds has said that if 386BSD or the GNU kernel had been available at the time, he probably would not have created Linux.

The lawsuit was settled in January 1994, largely in Berkeley's favor. Of the 18,000 files in the Berkeley distribution, only three had to be removed and 70 modified to show USL copyright notices. A further condition of the settlement was that USL would not file further lawsuits against users and distributors of the Berkeley-owned code in the upcoming 4.4BSD release.

Code copying and theft of trade secrets was alleged. The actual infringing code was not identified for nearly two years. The lawsuit could have dragged on for much longer but for the fact that Novell bought USL from AT&T and sought a settlement. In the end, three files were removed from the 18,000 that made up the distribution, and a number of minor changes were made to other files. In addition, the University agreed to add USL copyrights to about 70 files, with the stipulation that those files continued to be freely redistributed.

In June 1994, 4.4BSD was released in two forms: the freely distributable 4.4BSD-Lite contained no AT&T source, whereas 4.4BSD-Encumbered was available, as earlier releases had been, only to AT&T licensees.

The final release from Berkeley was 1995's 4.4BSD-Lite Release 2, after which the CSRG was dissolved and development of BSD at Berkeley ceased. Since then, several variants based directly or indirectly on 4.4BSD-Lite (such as FreeBSD, NetBSD, OpenBSD and DragonFly BSD) have been maintained.

SUSE https://www.**opensuse**.org/

On May 11, 2006, the openSUSE Project released SUSE Linux 10.1, with the mailing list announcement identifying Xgl, NetworkManager, AppArmor and Xen as prominent features.

“42” The OpenSUSE team decided the next version will be based on SUSE Linux Enterprise Server (SLES) and named "Leap 42" (42 being the answer to life, the universe and everything)

From “The Hitchhiker's Guide to the Universe” (Douglas Adams)
"What do you get if you multiply six by nine?"

"Six by nine. Forty two." "That's it. That's all there is."

"I always thought something was fundamentally wrong with the universe"

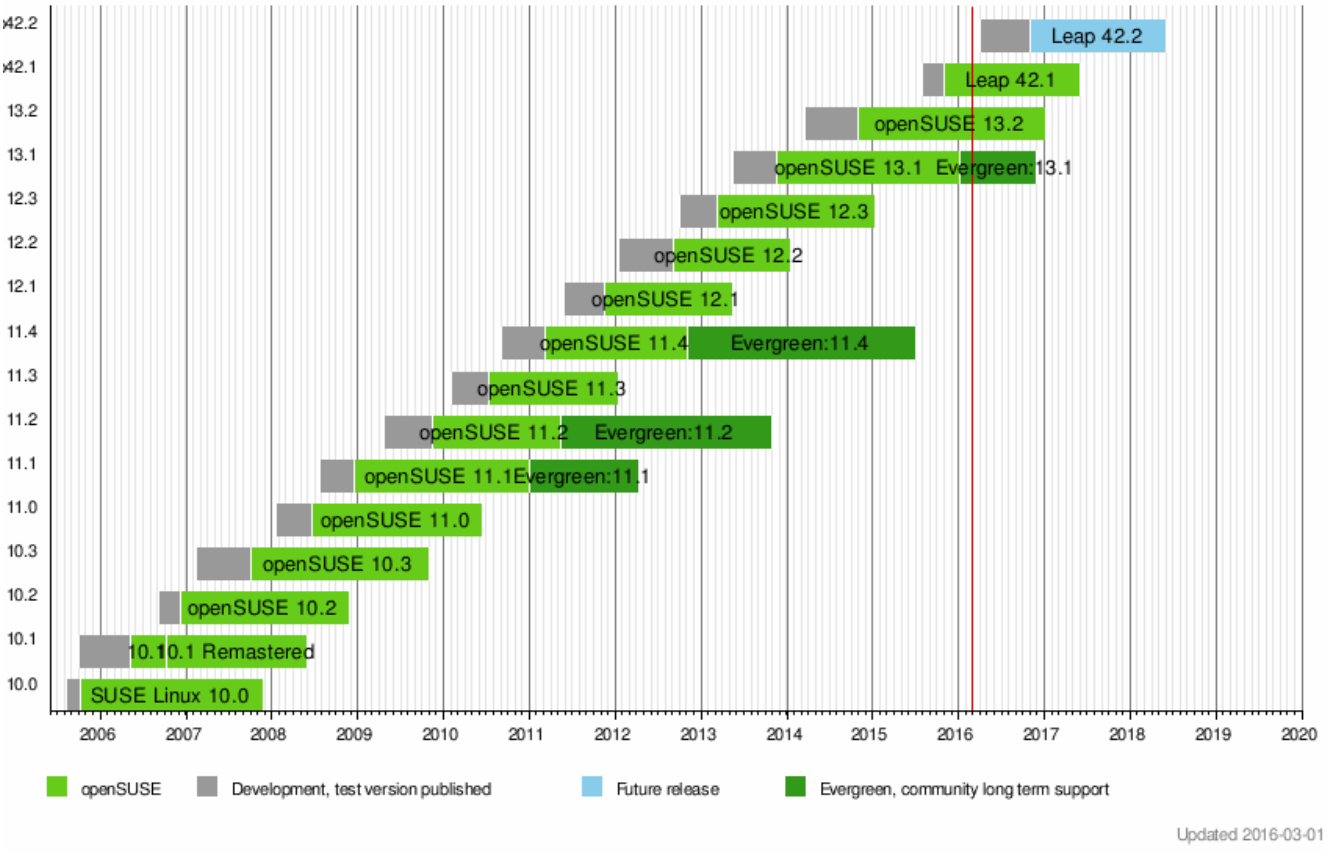
The openSUSE project aims to release a new version every eight months. Since version 11.2, critical updates have been provided for two releases plus two months, which results in a support lifetime of 18 months.

Starting with version 12.1, to add predictability and to prevent people from thinking the .0 releases are more major, the openSUSE version scheme has changed. All November releases have a .1, all July releases have a .2, and all March releases have a .3. Every two years, when another .1 version is released, the major version number is bumped up.

Starting with version Leap 42.1 (after version 13.2), each major release is expected to be supported for at least 36 months, until the next major version is available (e.g. 43.1), aligned with SUSE Linux Enterprise Releases. Each minor release (e.g. 42.1, 42.2, etc.) is expected to be released annually, aligned with SUSE Linux Enterprise Service Packs, and users are expected to upgrade to the latest minor release within 6 months of its availability, leading to a similar support lifecycle of 18 months as earlier.

Evergreen

is a community effort to prolong maintenance of selected openSUSE versions after they reach official end-of-life.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Leap 42.2
Leap 42.1
openSUSE 13.2
openSUSE 13.1
Evergreen:13.1
openSUSE 12.3
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Evergreen:11.4
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Evergreen:11.2
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SUSE Linux 10.0
2006
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2019
2020
openSUSE
Development, test version published
Future release
Evergreen, community long term support
Updated 2016-03-01

CentOS

CentOS (abbreviated from **Community Enterprise Operating System**) is a Linux distribution that attempts to provide a free, enterprise-class, community-supported computing platform which aims to be functionally compatible with its upstream source, Red Hat Enterprise Linux (RHEL).

Largely from: https://en.wikipedia.org/wiki/CentOS

This is the system in use by Maple Park Development (me, the presenter) primarily because of its longer lifetime support (10 years) and enterprise use.

In January 2014, Red Hat announced that it would sponsor the CentOS project, "helping to establish a platform well-suited to the needs of open source developers that integrate technologies in and around the operating system". As the result of these changes, ownership of CentOS trademarks was transferred to Red Hat, which now employs most of the CentOS head developers; however, they work as part of the Red Hat's Open Source and Standards team, which operates separately from the Red Hat Enterprise Linux team. A new CentOS governing board was also established.

RHEL is available only through a paid subscription service that provides access to software updates and varying levels of technical support. The product is largely composed of software packages distributed under free software licenses and the source code for these packages is made public by Red Hat.

CentOS developers use Red Hat's source code to create a final product very similar to RHEL. Red Hat's branding and logos are changed because Red Hat does not allow them to be redistributed. CentOS is available free of charge. Technical support is primarily provided by the community via official mailing lists, web forums, and chat rooms.

The project is affiliated with Red Hat but aspires to be more public, open, and inclusive. While Red Hat employs most of the CentOS head developers, the CentOS project itself relies on donations from users and organizational sponsors.