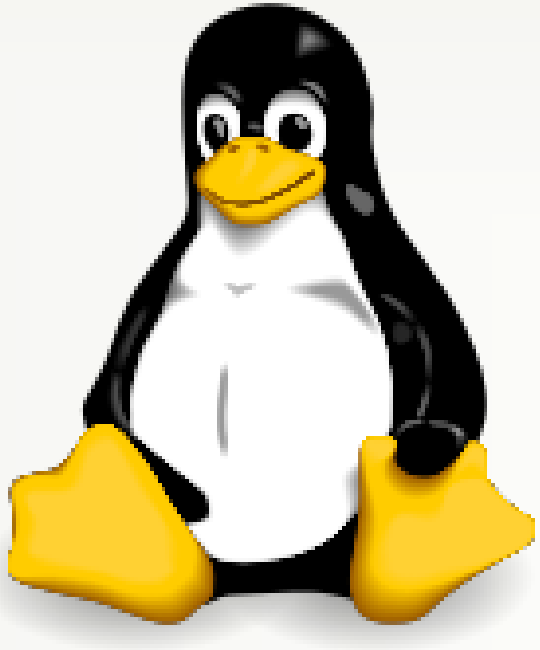
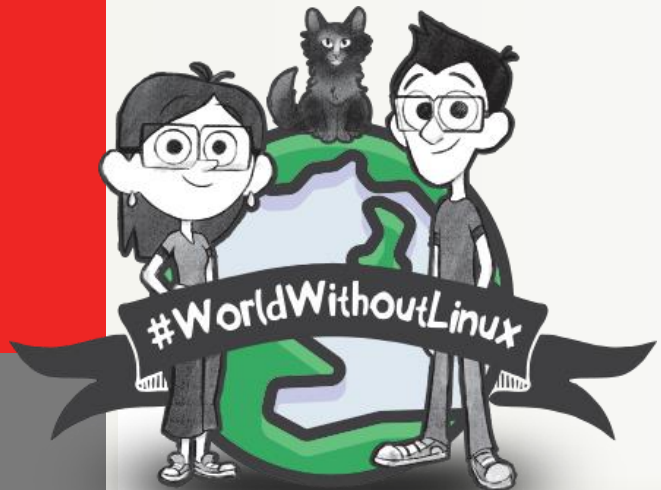


A word without Linux is hard to imagine

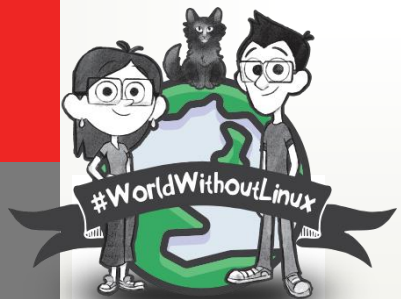


Basics of Linux

Atefe HosseinZadeh

Goals :

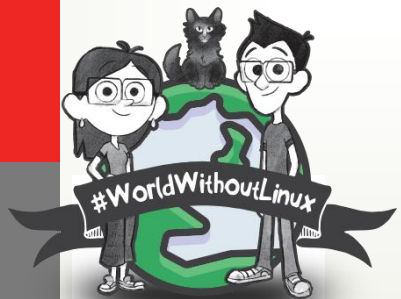
- What is Unix/Linux?
- History of Linux
- Features Supported Under Linux



Components of Linux System

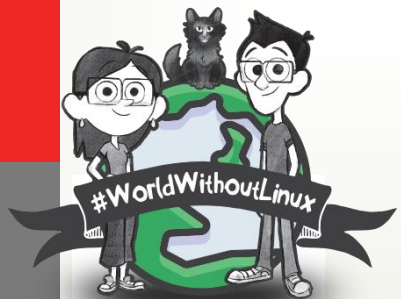
Linux Operating System has primarily three components :

Kernel
Kernel is the core part of Linux. It is responsible for all major activities of this operating system
System Library
System libraries are special functions or programs using which application programs or system utilities accesses Kernel's features
System Utility
System Utility programs are responsible to do specialized, individual level tasks



Before Linux

- In 80’s, Microsoft’s DOS was the dominated OS for PC
- Apple MAC was better, but expensive
- UNIX was much better, but much, much more expensive. Only for minicomputer for commercial applications
- People was looking for a UNIX based system, which is cheaper and can run on PC
- Both DOS, MAC and UNIX were **proprietary**, i.e., the source code of **their kernel is protected**
- No modification is possible without paying high license fees



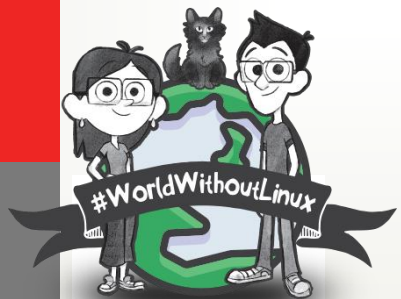
GNU project

Established in 1984 by **Richard Stallman**, who believes that software should be free from restrictions against copying or modification in order to make better and efficient computer programs

GNU is a recursive acronym for “GNU's Not Unix”

Aim at developing a complete Unix-like operating system which is free for copying and modification

Companies make their money by maintaining and distributing the software, e.g. optimally packaging the software with different tools (Redhat, Slackware, Mandrake, SuSE, etc)

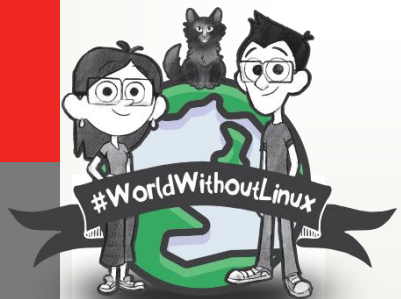


Beginning of Linux

A famous professor Andrew Tanenbaum developed **Minix**, a simplified version of UNIX that runs on PC

Minix is for class teaching only. No intention for commercial use

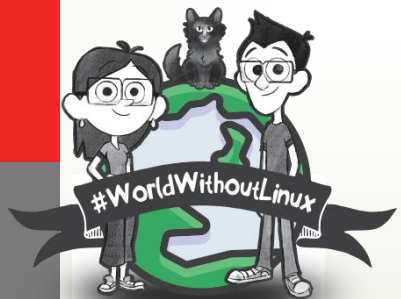
In Sept 1991, **Linus Torvalds**, a second year student of Computer Science at the University of Helsinki, developed the preliminary kernel of Linux, known as Linux version 0.0.1



Beginning of Linux

Soon more than a hundred people joined the Linux camp. Then thousands. Then hundreds of thousands

It was licensed under **GNU General Public License**, thus ensuring that the source codes will be free for all to copy, study and to change.



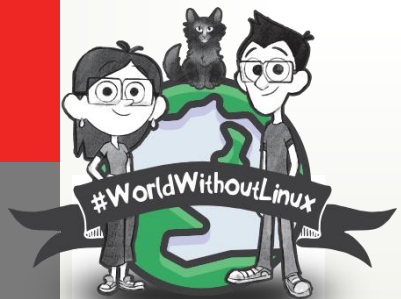
Linux Today

Linux has been used for many computing platforms

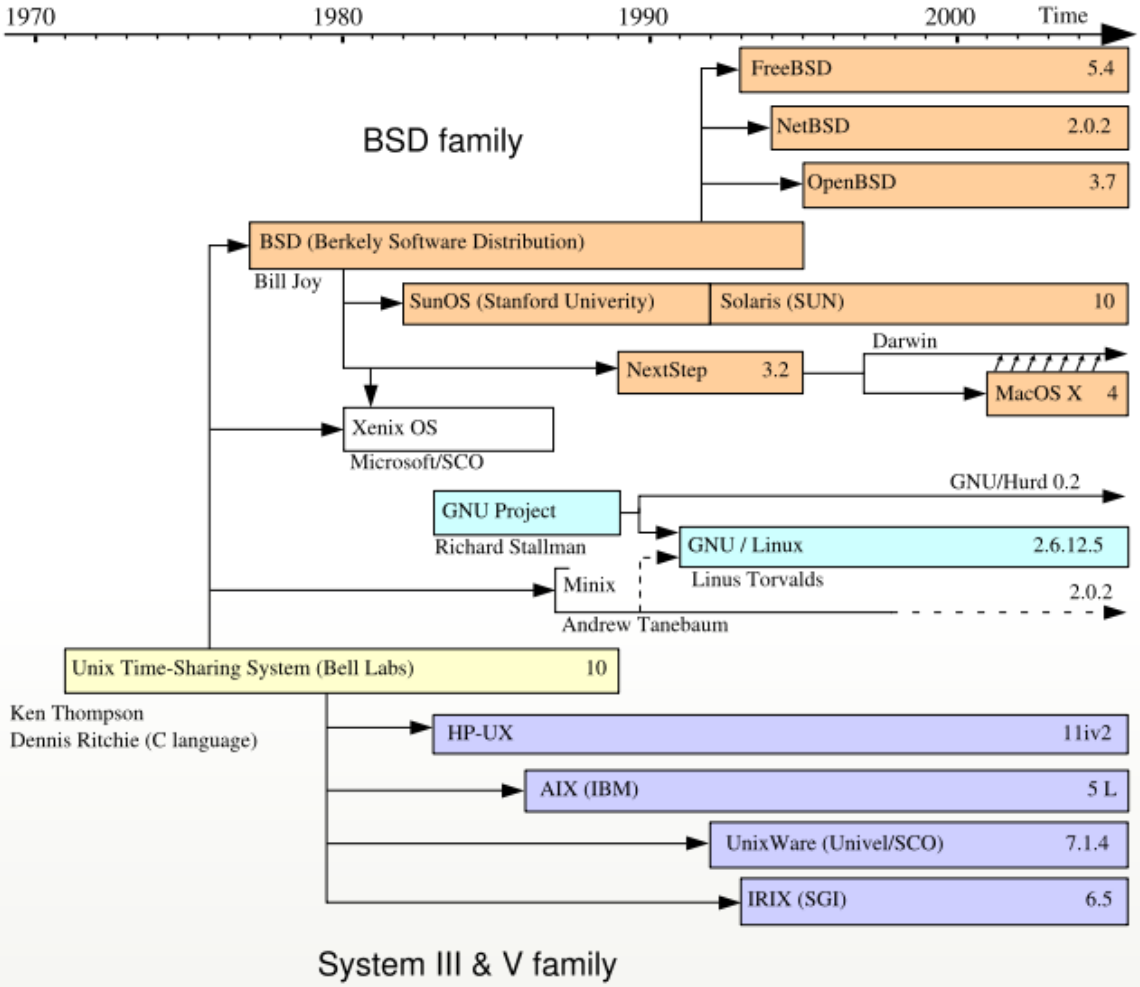
PC, PDA, Supercomputer,…

Not only character user interface but graphical user interface is available

Commercial vendors moved in Linux itself to provide freely distributed code. They make their money by compiling up various software and gathering them in a distributable format Red Hat, Slackware, etc



Time Line



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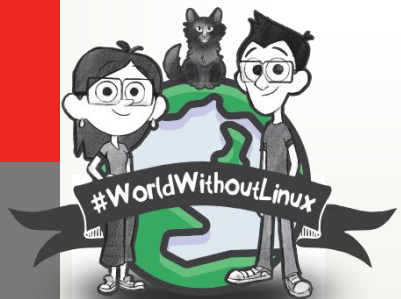
Linux Distributions

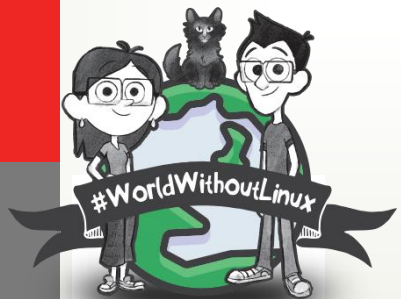
Red Hat Linux : One of the original Linux distribution.
The commercial, nonfree version is Red Hat Enterprise Linux, which is aimed at big companies using Linux servers and desktops in a big way.
Free version: **Fedora Project.**
Debian GNU/Linux : A free software distribution. Popular for use on servers. However, Debian is not what many would consider a distribution for beginners, as it's not designed with ease of use in mind.
SuSE Linux : SuSE was recently purchased by Novell. This distribution is primarily available for pay because it contains many commercial programs, although there's a stripped-down free version that you can download.
Mandrake Linux : Mandrake is perhaps strongest on the desktop. Originally based off of Red Hat Linux.
Gentoo Linux : Gentoo is a specialty distribution meant for programmers.



What is “open source” software?

source = software in source code form.
open = freedom to:
- View the source code
- Run the software for any purpose
- Modify the software in any way
- Distribute the software and any modifications

Software development model
Philosophy—share and collaborate
Licensing Model



Linux - free software

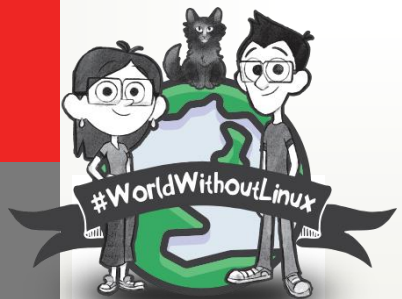
Free software, as defined by the FSF (Free Software Foundation), is a **"matter of liberty, not price."** To qualify as free software by FSF standards, you must be able to: Run the program for any purpose you want to, rather than be restricted in what you can use it for.

View the program's source code.

Study the program's source code and modify it if you need to.

Share the program with others.

Improve the program and release those improvements so that others can use them.



Features support Under Linux

1- Open Source

2- Security

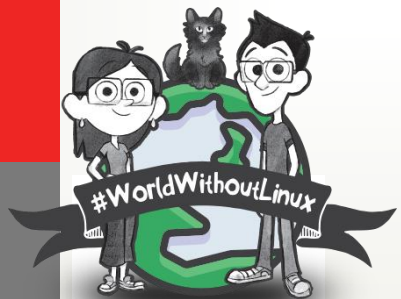
3- Recovery

4- Scalable

When is it best to use Linux and when should some other operating system be preferred?

It all depends on the user

Conclusion



Thanks for Your Attention

Atefe Hossein Zadeh

Present date: 1395/11/28