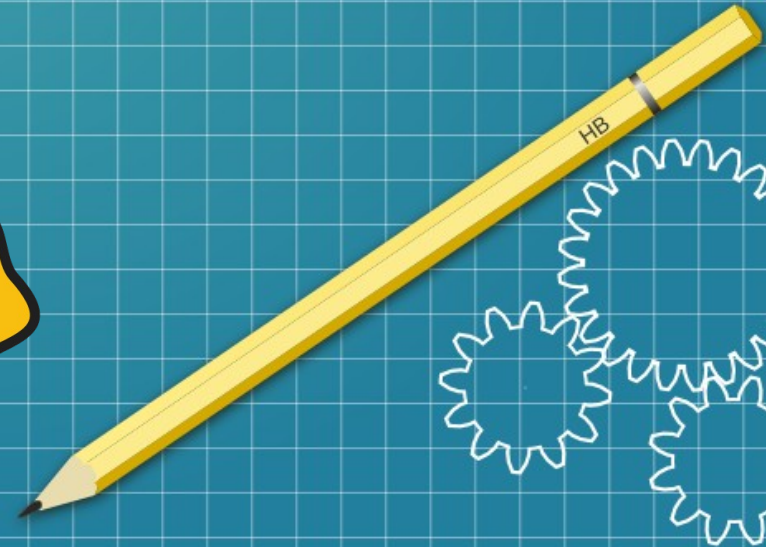
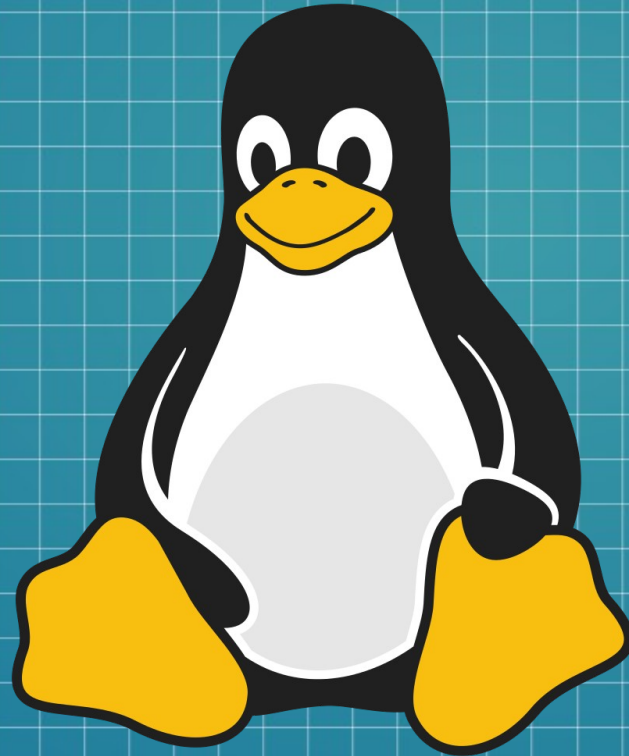
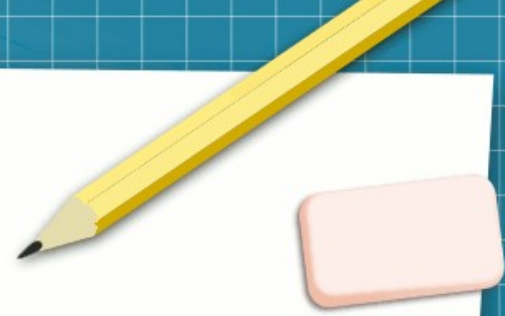


Linux

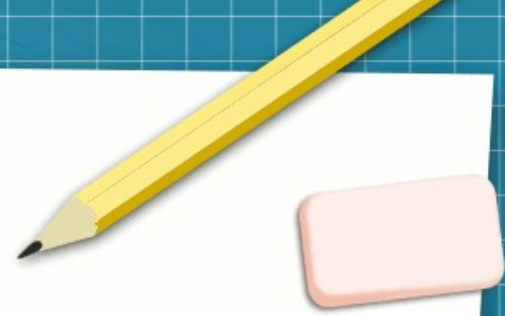


What's the plan?

- 1.What is Linux?
- 2.Operating system
- 3.Unix
- 4.Kernel
- 5.Open-Source
- 6.Distribution model
- 7.Conclusion



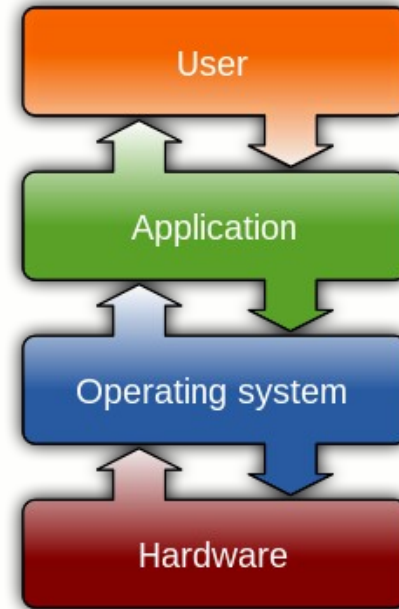
What is Linux?



Linux is a collection of open source unix-like operating systems based on the Linux kernel.


Operating System

- Three main purposes:
 - Managing hardware resources
 - Providing a user interface
 - Running applications



Unix

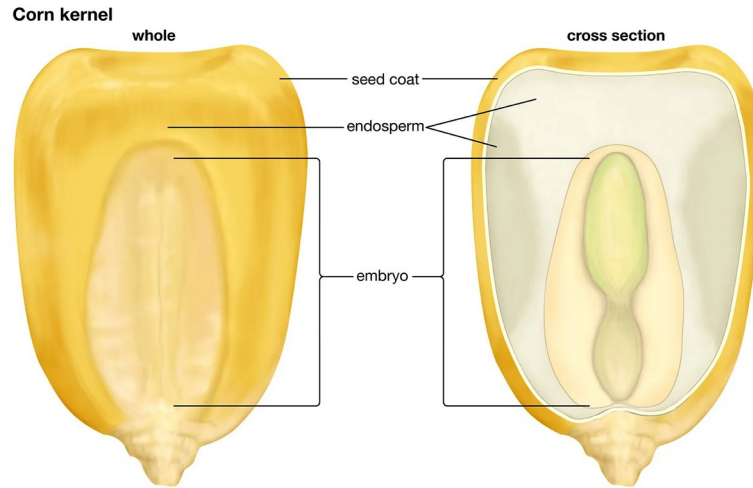
- Created in the 70s by AT&T for the Bell System
- Defining characteristics :
 - Plain text to store data
 - Hierarchical file system
 - Small specialized programs working together instead of a big one
- Creation of the “Unix philosophy”



```
Terminal
-rwxr-xr-x 1 sys 52850 Jun 8 1979 hptmunix
drwxrwxr-x 2 bin 320 Sep 22 05:33 lib
drwxrwxr-x 2 root 96 Sep 22 05:46 mdec
-rwxr-xr-x 1 root 50990 Jun 8 1979 rkunix
-rwxr-xr-x 1 root 51982 Jun 8 1979 rl2unix
-rwxr-xr-x 1 sys 51790 Jun 8 1979 rphtunix
-rwxr-xr-x 1 sys 51274 Jun 8 1979 rptmunix
drwxrwxr-x 2 root 48 Sep 22 05:50 tmp
drwxrwxr-x 12 root 192 Sep 22 05:48 usr
# ls -l /usr
total 11
drwxrwxr-x 3 bin 128 Sep 22 05:45 dict
drwxrwxr-x 2 dmr 32 Sep 22 05:48 dmr
drwxrwxr-x 5 bin 416 Sep 22 05:46 games
drwxrwxr-x 3 sys 496 Sep 22 05:42 include
drwxrwxr-x 10 bin 528 Sep 22 05:43 lib
drwxrwxr-x 11 bin 176 Sep 22 05:45 man
drwxrwxr-x 3 bin 208 Sep 22 05:46 mdec
drwxrwxr-x 2 bin 80 Sep 22 05:46 pub
drwxrwxr-x 6 root 96 Sep 22 05:45 spool
drwxrwxr-x 13 root 208 Sep 22 05:42 src
# ls -l /usr/dmr
total 0
#
```




Kernel



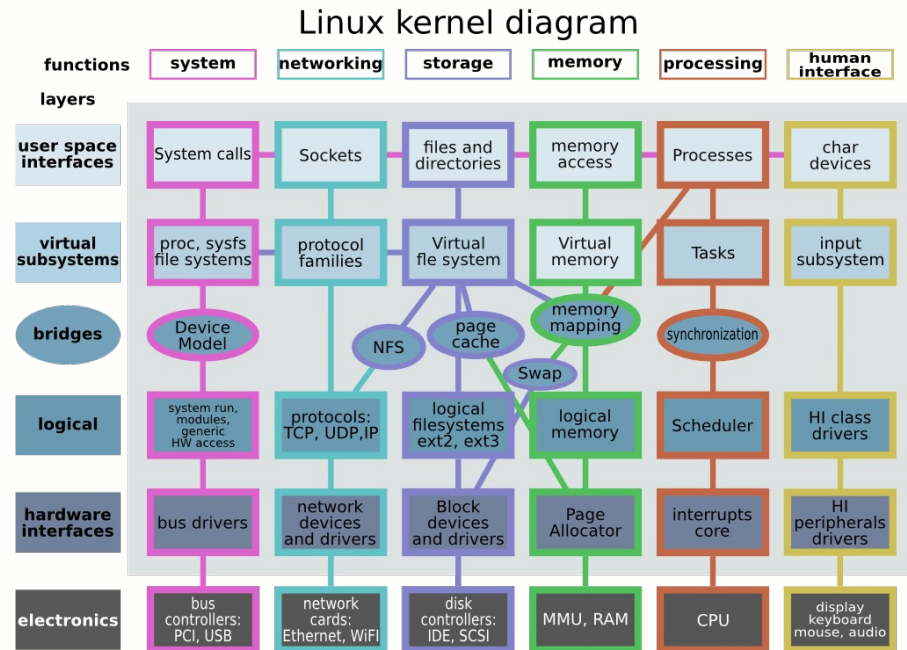
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- Seed of the corn
- Composed of different parts
- Can be used for cooking or as biofuel

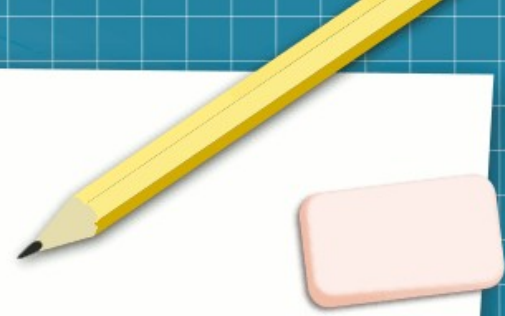
Kernel

- Computer program run at startup
- Core component of the OS
- Manage different parts:
 - Process
 - Memory
 - Device
 - File system
 - Security and access



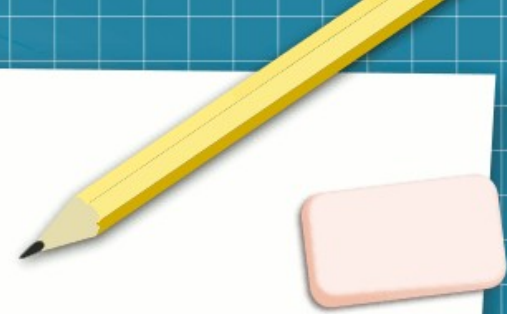
Linux Kernel

- Created by Linus Torvalds in 1991
- Free and open source
- Support a wide range of devices and architecture (except rare case like Nvidia)
- Community driven



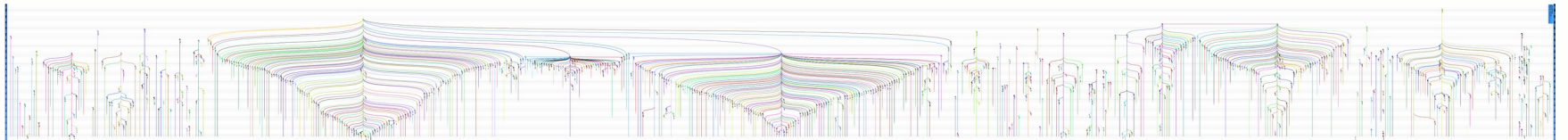
Open-Source

- Source code accessible to anyone to
 - Inspect
 - Modify
 - Enhance
 - Copy/Fork
- Offers more control and stability than proprietary



Linux distributions

- Operating system made from the Linux kernel
- Often include :
 - Package Manager (apt, dnf, pacman, etc)
 - Display Manager (X.org or Wayland more recently)
 - Desktop Environment (Plasma, GNOME, XKDE, etc)
 - Sound Server (PulseAudio or Pipewire)
 - Basic programs and softwares



Types of distributions



Point Release/LTS

- Major releases once per year (usually)
- Extensive testing and debugging for a stable system
- Continuous support for years
- Upgrade to the next major release can be long
- Not on the latest version automatically

Rolling release

- No major versioning
- Update as soon as the software are released
- No need for major whole system upgrade
- Can cause incompatibilities
- Sometimes require troubleshooting

Types of distributions



Ubuntu

- Long Term Release model
- Security updates for 5 years
- Based on Debian
- One of the most used distro by users
- The most popular, by far, distro for servers



Fedora

- Point Release model
- Packages and security update for 13 months
- Owned by RedHat
- Popular workstation distro, being an hybrid



Arch

- Bleeding Edge model
- Really barebone distro
- Very lightweight
- Huge customization possibilities
- Massive community around it

Conclusion

- Linux-based Operating Systems are a free and open-source alternative to Windows or MacOS
- You can have YOUR Linux that fits your needs perfectly
- Way easier to update than the Microsoft alternative [demo]

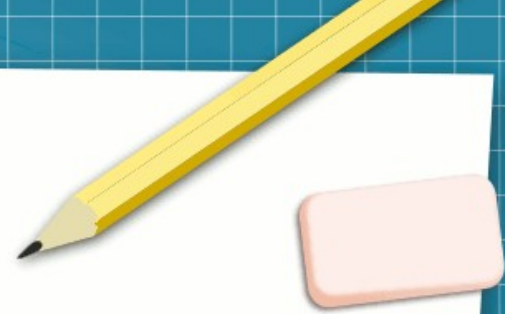


A yellow pencil and a pink eraser are positioned in the top right corner of the white paper, as if they are about to be used for writing or erasing.

Thanks for you attention!

Feel free to ask any questions

Sources



- Wikipedia :
 - https://en.wikipedia.org/wiki/Unix_philosophy
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