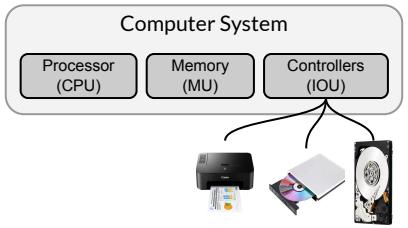
# Operating System

Hamidreza Hosseinkhani - 2020

# Computer System



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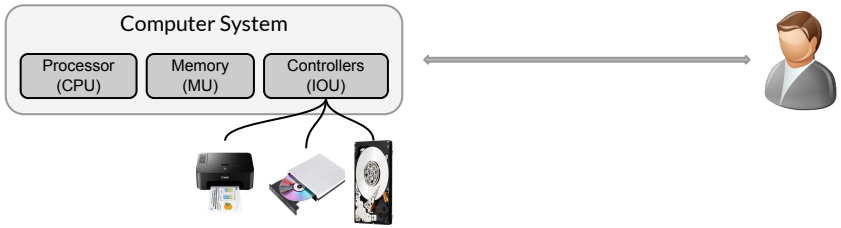

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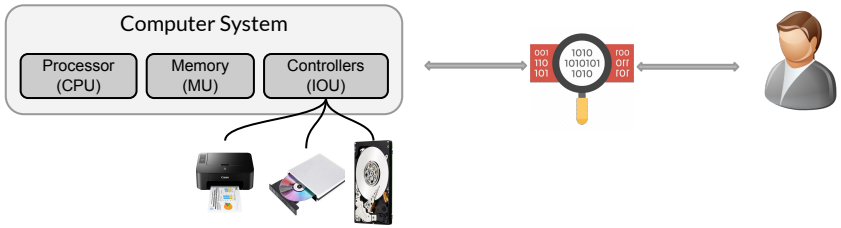

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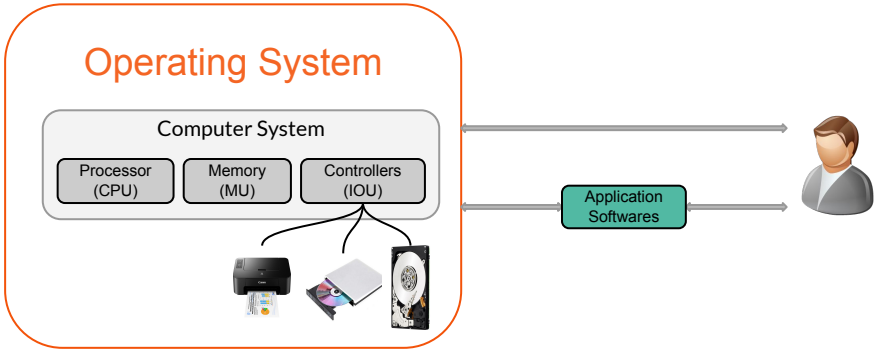
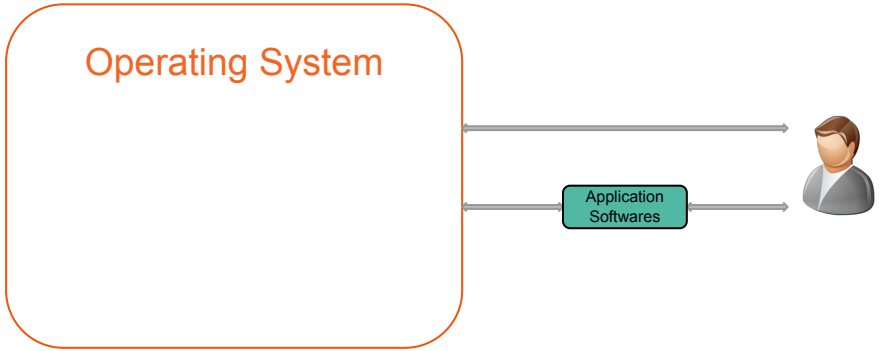



- Resource Management
- User Interface
- provide services for application softwares

# Operating System



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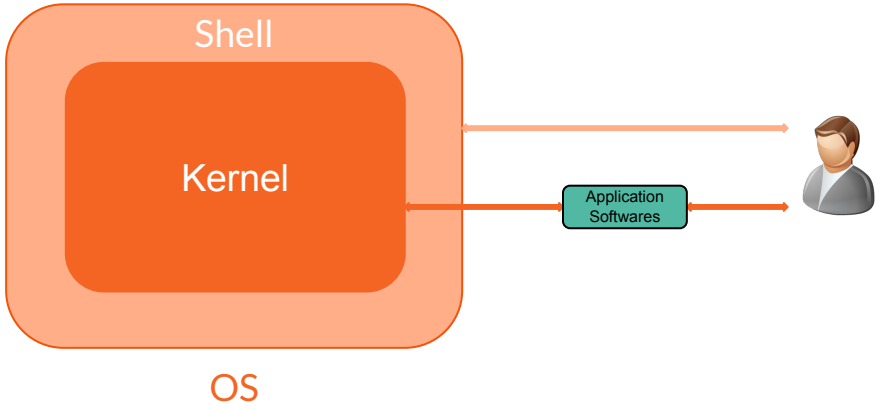
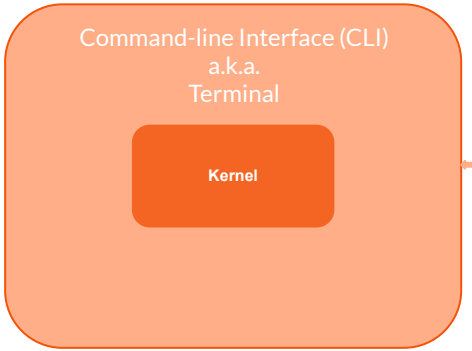
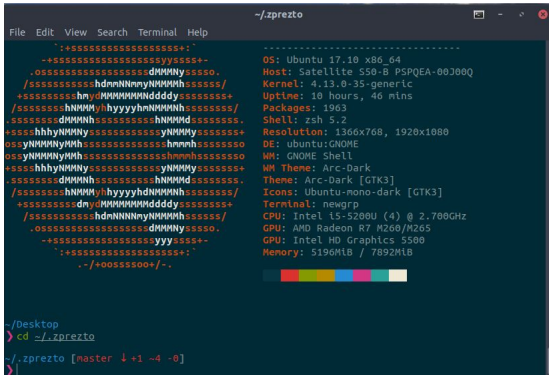


# Shell (User Interface)




OS



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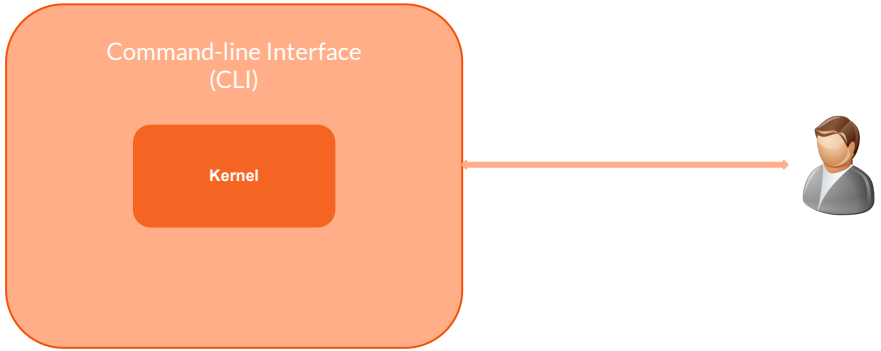
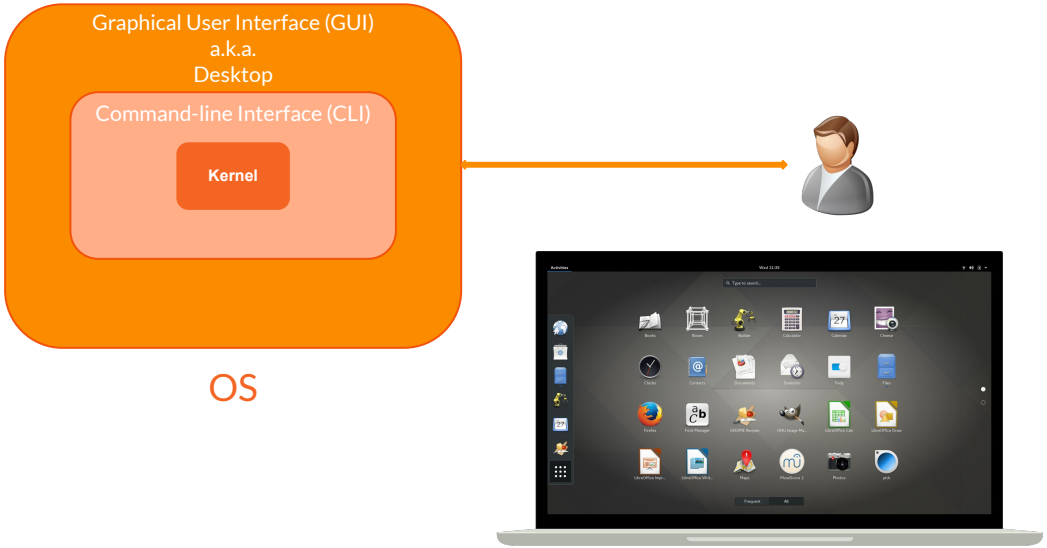



- Bourne shell
- BASH
- csh
- zsh
- CMD.EXE
- PowerShell
- ...

# Shell (User Interface)



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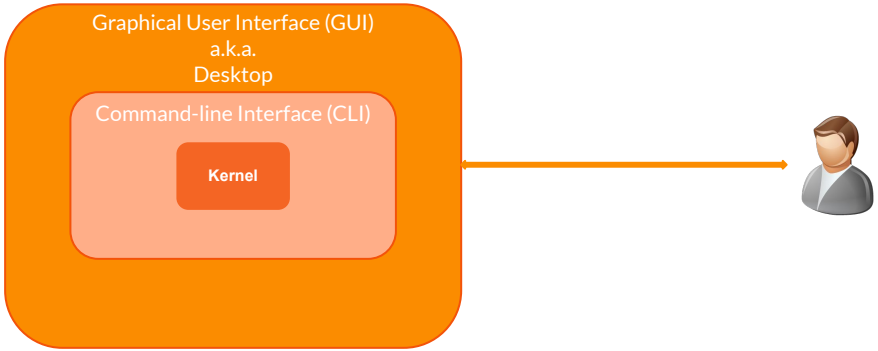
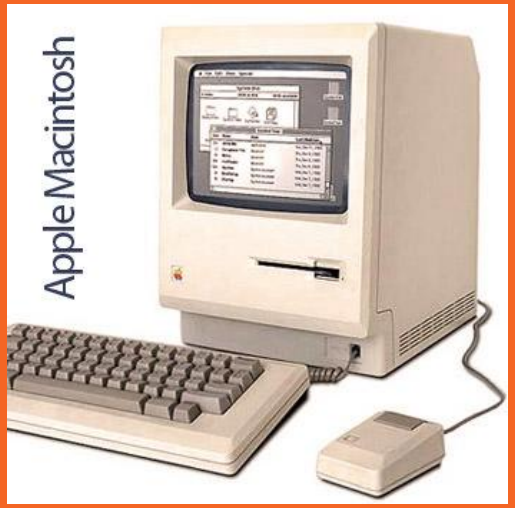


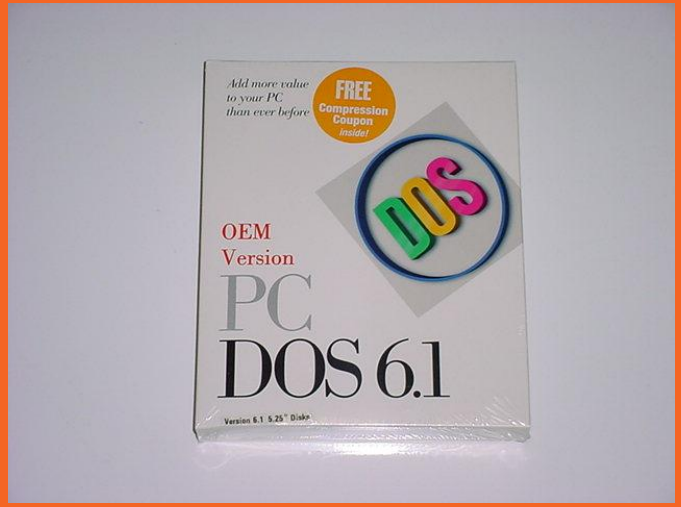

OS

- GNOME
- Xfce
- KDE
- ...

**IBM**
**Personal Computer (PC)**




**Apple**
**Macintosh**




**IBM**
**PC DOS**

**Apple**
**(Classic) Mac OS**

Microsoft
DOS

Apple
(Classic) Mac OS

Microsoft
DOS

UNIX

Apple
(Classic) Mac OS

Microsoft
DOS

UNIX

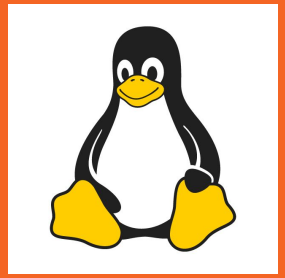
Apple
Mac OS X

Microsoft
DOS

MINIX
(Mini-Unix)

Apple
Mac OS X

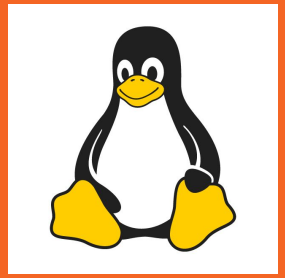
Microsoft
DOS



Linux

Apple
Mac OS X

Microsoft
Windows



Linux

OS X

Apple
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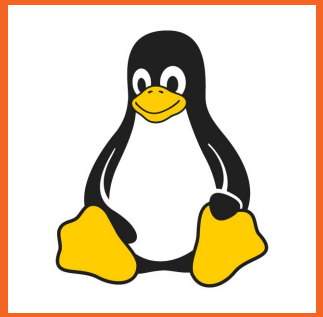
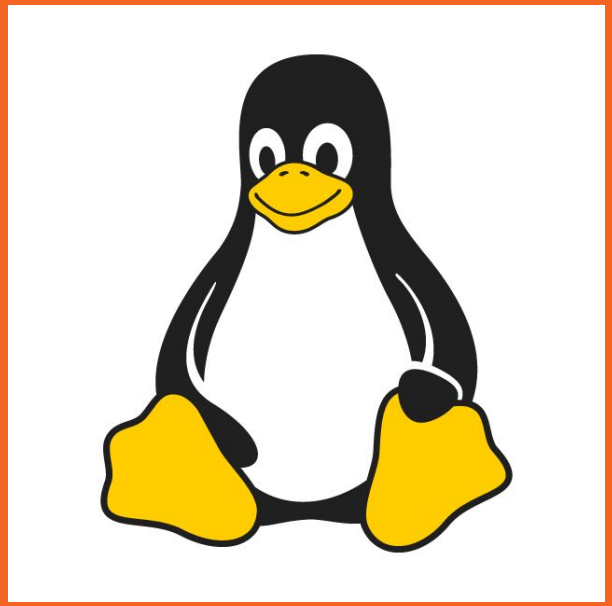


Linux

Apple
macOS

# Linux Distributions



Red Hat Enterprise Linux

fedora

CentOS

Rocky Linux™

Parsix GNU/Linux

debian

ubuntu®

archlinux

KALI LINUX™

Microsoft
Windows Phone

Google
Android

Apple
iOS

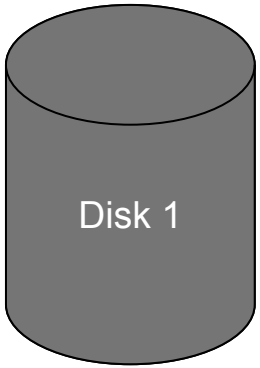
Microsoft
Windows Phone

Google
Android

Apple
iOS

# Linux

# Disk Partitioning



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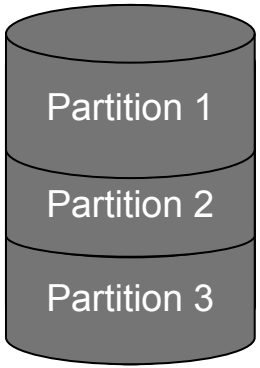

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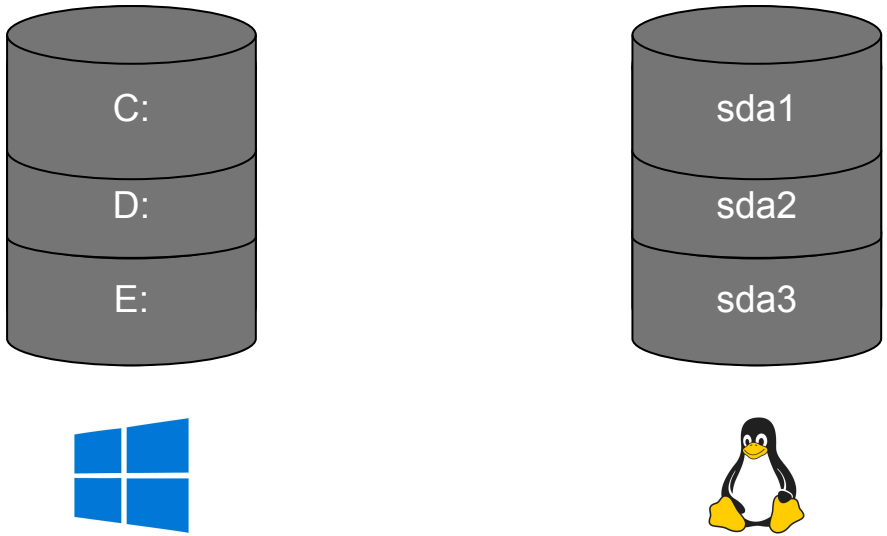
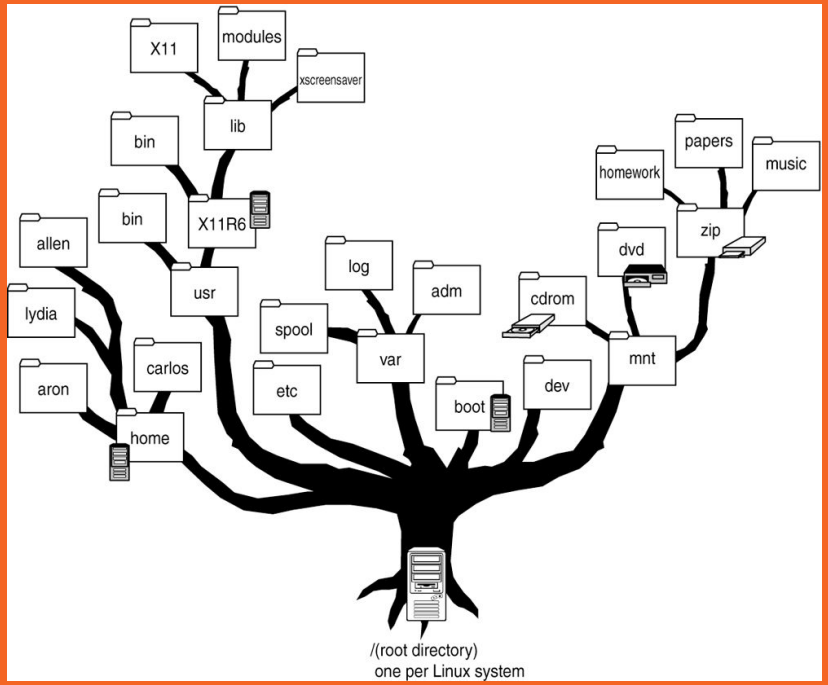


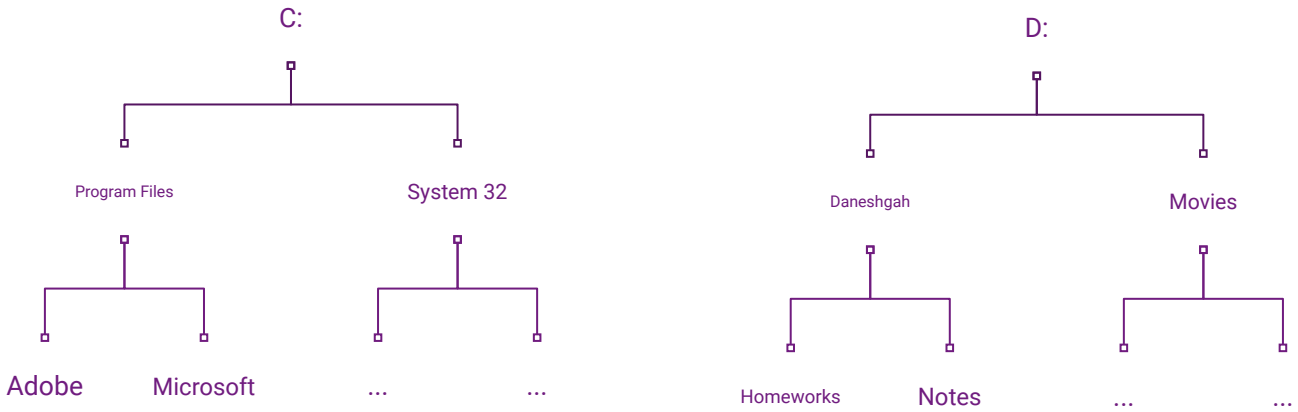
In UNIX and UNIX-like Operating Systems, Everything is a file.

# File System

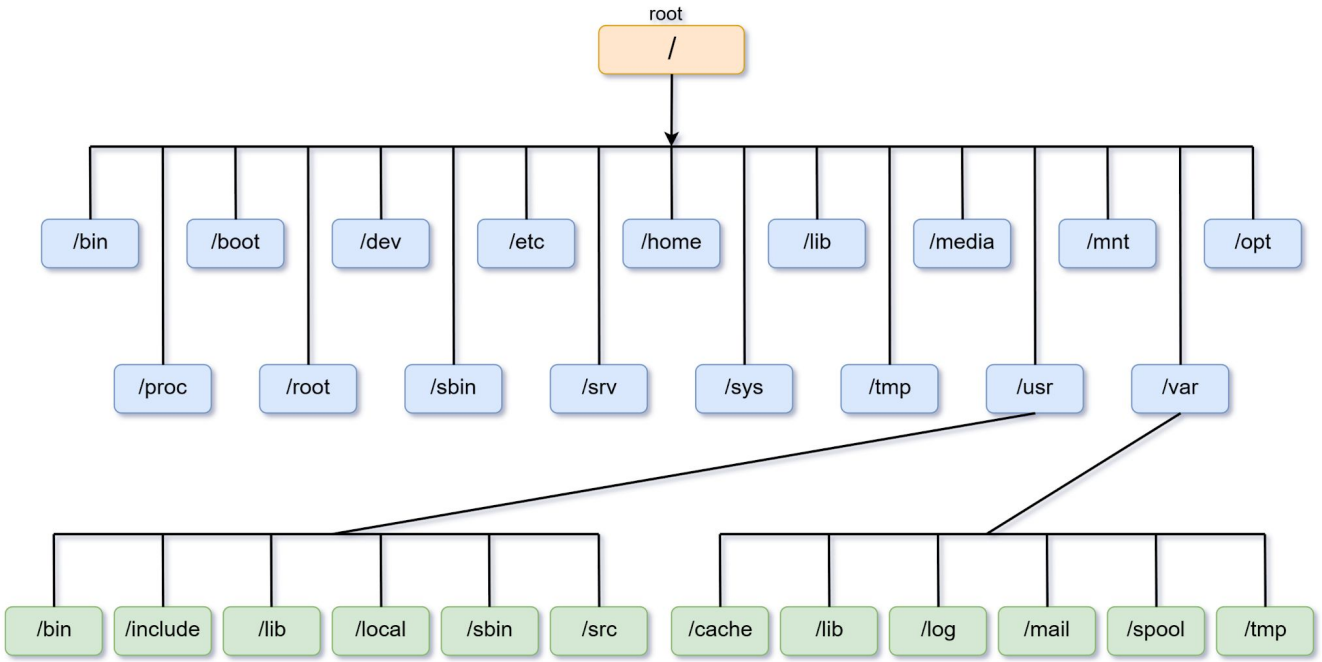
controls how data is stored and retrieved

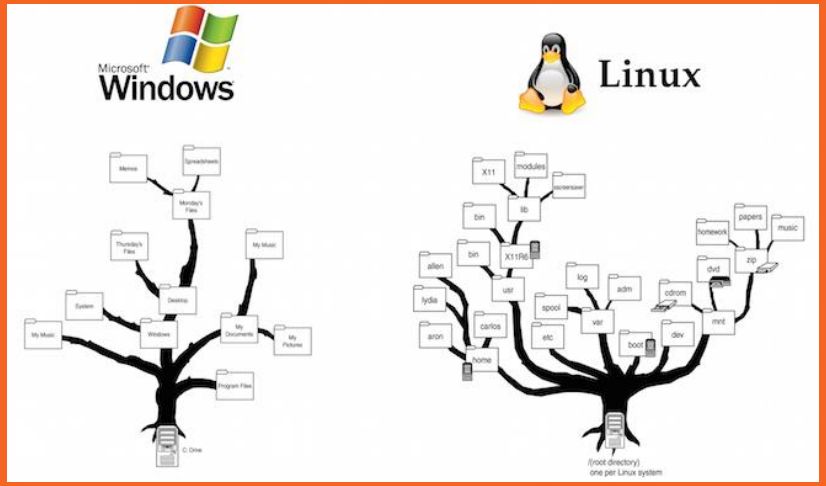


# Filesystem hierarchy in Windows



# Filesystem hierarchy in Linux






Microsoft Windows

C:\Users\Andrey

Linux

/home/andrey

# File attributes

- Name
- Type
- Path
- Time of last modification
- Permissions

# File Permissions

**Owner** **Group** **Others**

# File Permissions

| Owner | Group | Others |
| --- | --- | --- |
| r w x | r w x | r w x |

# File Permissions

| Owner | Group | Others |
| --- | --- | --- |
| r w x | r w x | r w x |
| 1 1 1 | 1 1 0 | 1 0 0 |

# File Permissions

| Owner | Group | Others |
| --- | --- | --- |
| r w x | r w x | r w x |
| 1 1 1 | 1 1 0 | 1 0 0 |
| 7 | 6 | 4 |

# Let's try it down!

# Learn more!

https://www.udacity.com/course/linux-command-line-basics--ud595