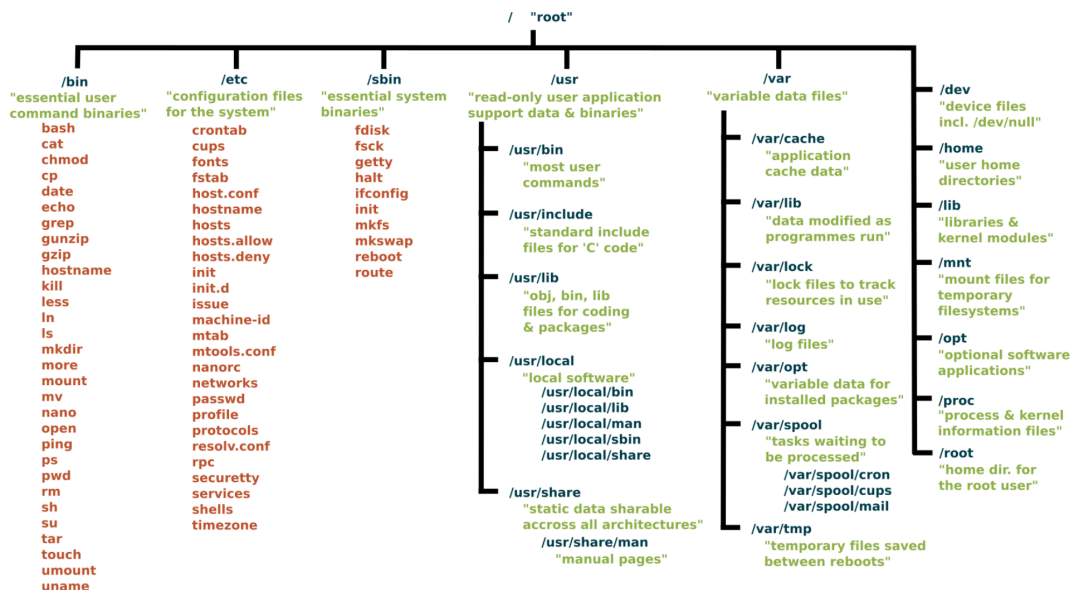# Linux Fundamentals

- The below image shows the file system hierarchy in linux.
  used for.

- for understanding file ownership refer this video

Cron Job

- What is a cron job? it is used to automate script running on linux and the below is the explanation of how its done.
  A cron job follows this **5-field format**:

```
MIN HOUR DOM MON DOW COMMAND
* * * * * /User/Ubuntu/bash_basics/try.sh
```

Field	Meaning	Allowed Values
MIN	Minute	0 - 59
HOUR	Hour	0 - 23
DOM	Day of Month	1 - 31
MON	Month	1 - 12
DOW	Day of Week	0 - 6 (0 = Sunday)
COMMAND	Command/Script to Execute	Any Linux command

Example of a Cron Job

Schedule	Example Cron Job	Explanation
Every minute	`* * * * * echo "Hello"`	Runs every minute

Schedule	Example Cron Job	Explanation
Every 5 mins	`*/5 * * * myscript.sh`	Runs every 5 minutes
Every hour	`0 * * * myscript.sh`	Runs at the start of every hour
Every day at 2 AM	`0 2 * * backup.sh`	Runs at 2 AM every day
Every Monday at 8 AM	`0 8 * * 1 report.sh`	Runs at 8 AM every Monday
On Jan 1st at midnight	`0 0 1 1 * newyear.sh`	Runs at midnight on Jan 1st

Special Use(easier)

Instead of using `* * * * *`, you can use these

Keyword	Equivalent
`@reboot`	Runs once at system startup
`@hourly`	Runs every hour (`0 * * * *`)
`@daily`	Runs once a day (`0 0 * * *`)
`@weekly`	Runs once a week (`0 0 * * 0`)
`@monthly`	Runs once a month (`0 0 1 * *`)

Anacron Job

- Better over cronjob because cronjob wont redo the task if the system is powered off. check if it is installed or not by

```
which anacron
```

if not installed, use the command

```
sudo apt install anacron
```

to edit Anacron config file go to

```
/etc/anacrontab
```

and add the line

```
period delay job_id command
```

Example: Run a script daily, 10 minutes after startup:

```
1 10 mybackup /path/to/backup.sh
```

restart anacron by using the command

```
sudo systemctl restart anacron
```

Log Files

Where Can You Find Log Files?

Most log files in Linux are stored in the `/var/log/` directory.

Common Log Files & Their Purpose

Log File	Location	Purpose
System Log	`/var/log/syslog` or `/var/log/messages`	Logs general system activity (errors, warnings, events)
Authentication Log	`/var/log/auth.log`	Records user logins, sudo commands, and authentication attempts
Kernel Log	`/var/log/kern.log`	Stores kernel messages, errors, and driver issues
Boot Log	`/var/log/boot.log`	Logs system startup and boot events
Cron Log	`/var/log/cron.log`	Stores logs of all scheduled cron jobs
Daemon Log	`/var/log/daemon.log`	Logs background processes (services like Apache, SSH, etc.)
Failed Login Attempts	`/var/log/faillog`	Shows failed login attempts
Last Login Info	`/var/log/lastlog`	Stores the last login time of users

This is used to clear a log file without deleting it.

```
> /var/log/syslog
```