init - Receives PID of 1. program that runs when Linux starts. init will launch several processes and call init scripts.

**Process Related Commands**

- `ps` - list processes for the current user on the current terminal
- `pstree` - lists the processes in a tree structure identifying parent processes
- `top` - dynamically lists the top processes running
- `jobs` - lists the jobs run from this terminal
- `bg` - put a program in the background
- `fg` - put a program in the foreground
- `kill` - kills a process based on the PID
- `killall` - kills a process based on the name
- `shutdown` / `poweroff` / `reboot` / `halt`

**Key commands**

- `ctrl-c` kills a process
- `ctrl-z` puts a process in the background without killing it

**Ps options**

- `a` - list all processes
- `x` - lift the BSD style
- `u` - list processes for all users example: `ps aux`
- `o` - customize the process list

- `ps xao pid,ppid,comm # will list all processes sorted in columns listed for pid, ppid (the parent), and the command`

**Kill**

- `kill -9 pid # will kill a process ID`
killall xclock # will kill the xclock process

### shutdown options

System Shutdown and Restart commands

```
shutdown -r time message
```

**Example:**  
sudo shutdown -r +5 "Server will restart in 5 minutes. Please save your work."

**halt** - leaves the machine powered on

**Example:**  
sudo shutdown -h now

**Example:**  
sudo halt

**Poweroff**

**Example:**  
sudo poweroff

**Example:**  
shutdown -p now

**Reboot**

**Example:**  
sudo reboot

**Example:**  
sudo shutdown -r now

**Example:**  
sudo shutdown -r09:35  # reboots the machine at 09:35am