**Linux Command Cheat Sheet**

**📁 File & Directory Commands**

| **Command** | **Description** |
| --- | --- |
| pwd | Show current directory |
| ls | List files in current directory |
| ls -l | Long listing (shows permissions, owner, size) |
| cd [folder] | Change directory |
| cd .. | Go back one directory |
| mkdir [folder] | Create new folder |
| rmdir [folder] | Remove empty folder |
| rm [file] | Delete file |
| rm -r [folder] | Delete folder with contents |
| touch [file] | Create empty file |
| cp [file] [destination] | Copy file |
| mv [old] [new] | Move/rename file or folder |

**📄 Viewing and Editing Files**

| **Command** | **Description** |
| --- | --- |
| cat [file] | View file contents |
| nano [file] | Open file in text editor (easy) |
| less [file] | View file one page at a time |
| head [file] | Show first 10 lines |
| tail [file] | Show last 10 lines |

**🔐 File Permissions**

| **Command** | **Description** |
| --- | --- |
| ls -l | Shows file permissions |
| chmod 755 [file] | Change file permissions (example) |
| chown user:group [file] | Change file owner |

**👤 User Management**

| **Command** | **Description** |
| --- | --- |
| whoami | Show current user |
| adduser [username] | Add new user |
| passwd [username] | Change user password |
| su [user] | Switch user |
| sudo [command] | Run command as superuser (admin) |

**📦 Package Management (Ubuntu/Debian)**

| **Command** | **Description** |
| --- | --- |
| sudo apt update | Update package list |
| sudo apt upgrade | Upgrade installed packages |
| sudo apt install [pkg] | Install a package |
| sudo apt remove [pkg] | Remove a package |

**🔧 System Monitoring**

| **Command** | **Description** |
| --- | --- |
| top | Show running processes |
| htop | Better version of top (install separately) |
| ps aux | Show all running processes |
| df -h | Show disk usage |
| free -h | Show RAM usage |

**🌐 Networking**

| **Command** | **Description** |
| --- | --- |
| ping [host] | Test network connection |
| ifconfig | Show IP address (older) |
| ip a | Show IP address (newer) |
| netstat -tuln | Show open ports |
| ssh [user]@[host] | Connect to remote server |

**🖥️ Power & Shutdown**

| **Command** | **Description** |
| --- | --- |
| shutdown now | Shutdown immediately |
| reboot | Restart system |
| logout | Log out of session |

**💻 Bash Scripting (Basics)**

bash

#!/bin/bash

echo "Hello, world!"

chmod +x hello.sh

./hello.sh

**Common chmod Usages in Linux**

**🔹 1. Grant Execute Permission**

chmod +x file.sh

➡ Adds execute (x) permission for **everyone**.

**🔹 2. Grant Read, Write, Execute for Owner**

chmod u+rwx file.txt

➡ Adds **read (r)**, **write (w)**, and **execute (x)** permissions to the **user (u)** (file owner).

**🔹 3. Remove Write Permission from Group**

chmod g-w file.txt

➡ Removes **write** permission from the **group (g)**.

**🔹 4. Make a File Read-Only for Everyone**

chmod a-w file.txt

➡ Removes **write** permission from **all users (a)** (user, group, others).

**🔹 5. Set Specific Permissions Using Numbers**

chmod 755 file.sh

➡ Equivalent to:

* **7** = rwx for **owner**
* **5** = r-x for **group**
* **5** = r-x for **others**

Another example:

chmod 644 file.txt

* **6** = rw- for **owner**
* **4** = r-- for **group**
* **4** = r-- for **others**

**🔹 6. Recursive Permission Change**

chmod -R 755 my\_folder/

➡ Applies the permission change to the **folder and all its contents** (subfolders and files).

**🧠 Symbolic Permission Reference:**

| **Symbol** | **Meaning** |
| --- | --- |
| r | Read |
| w | Write |
| x | Execute |
| u | User (owner) |
| g | Group |
| o | Others |
| a | All (u+g+o) |