



**Placement Empowerment Program**  
***Cloud Computing and DevOps Centre***

***60 Days of DevOps Challenge***

***Day 1: Linux Basics - Commands, File System & Permissions***

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This Proof of Concept (PoC) demonstrates the Linux Basics - Commands, File System & Permissions.

**Challenge 1:** List all files (including hidden ones) in your home directory and sort them by modification time.

```
nandana@nandana-007:~$ ls -laht ~
total 136K
-rw----- 1 nandana nandana 3.1K Jul  4 22:15 .bash_history
drwxr-xr-x 2 nandana nandana 4.0K Jul  4 22:10 Pictures
drwxr-xr-x 2 nandana nandana 4.0K Jul  4 22:08 day15
drwxr-xr-x 20 nandana nandana 4.0K Jul  4 22:06 .
-rw----- 1 nandana nandana 8.3K Jul  4 22:05 .xsession-errors
-rw----- 1 nandana nandana  56 Jul  4 22:04 .Xauthority
-rw----- 1 nandana nandana 9.6K Jul  3 10:53 .xsession-errors.old
drwxr-xr-x 2 nandana nandana 4.0K Jul  3 08:06 day14
drwxr-xr-x 17 nandana nandana 4.0K Jun 24 01:43 .config
drwxr-xr-x 2 nandana nandana 4.0K Jun 23 00:23 challenge
-rw-r--r-- 1 nandana nandana 245 Jun 18 23:46 .gtkrc-2.0
drwxr-xr-x 14 nandana nandana 4.0K Jun 18 23:46 .cache
drwxr-xr-x 2 nandana nandana 4.0K Jun 18 23:46 .icons
drwxr-xr-x 2 nandana nandana 4.0K Jun 18 23:46 .themes
drwx----- 4 nandana nandana 4.0K May  2 21:20 .mozilla
-rw-r--r-- 1 nandana nandana 3.7K Feb 24 19:44 .bashrc
-rw-r--r-- 1 nandana nandana 807 Feb 24 19:44 .profile
-rw-r--r-- 1 nandana nandana 220 Feb 24 19:44 .bash_logout
-rw-r--r-- 1 nandana nandana 516 Feb 24 19:44 .gtkrc-xfce
drwxr-xr-x 3 root root 4.0K Feb 24 19:44 ..
-rw-r--r-- 1 nandana nandana  0 Feb 24 14:55 .sudo_as_admin_successful
drwxr-xr-x 3 nandana nandana 4.0K Feb 24 14:46 .linuxmint
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Desktop
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Documents
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Downloads
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Music
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Public
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Templates
drwxr-xr-x 2 nandana nandana 4.0K Feb 24 14:20 Videos
drwxr-xr-x 4 nandana nandana 4.0K Feb 24 14:20 .local
-rw-r--r-- 1 nandana nandana  27 Feb 24 14:20 .dmrc
nandana@nandana-007:~$
```

**Challenge 2:** Create a directory named `devops_challenge_day_1`, navigate into it, and create an empty file named `day1.txt`.

```
nandana@nandana-007:~$ mkdir devops_challenge
nandana@nandana-007:~$ cd devops_challenge
nandana@nandana-007:~/devops_challenge$ touch day1.txt
nandana@nandana-007:~/devops_challenge$
```

**Challenge 3:** Change the permissions of `day1.txt` to allow only the owner to read and write, but no permissions for others.

Using `chmod 600 day1.txt`

```
nandana@nandana-007:~/devops_challenge$ chmod 600 day1.txt
nandana@nandana-007:~/devops_challenge$ ls -l day1.txt
-rw----- 1 nandana nandana 0 Jul  4 22:33 day1.txt
nandana@nandana-007:~/devops_challenge$
```

**Challenge 4:** Find all files in /etc that were modified in the last 7 days.

```
nandana@nandana-007:~/devops_challenges$ find /etc -type f -mtime -7
/etc/netplan/90-NM-941cffb5-1343-4083-a345-6397410374cf.yaml
/etc/netplan/90-NM-45ee05f9-ca71-47c2-82a8-5681e9d85983.yaml
find: '/etc/credstore': Permission denied
/etc/cups/subscriptions.conf.0
find: '/etc/cups/ssl': Permission denied
/etc/cups/subscriptions.conf
find: '/etc/ssl/private': Permission denied
find: '/etc/credstore.encrypted': Permission denied
find: '/etc/polkit-1/rules.d': Permission denied
nandana@nandana-007:~/devops_challenges$
```

**Challenge 5:** Write a one-liner command to find the most frequently used command in your shell history.

```
nandana@nandana-007:~/devops_challenge$ history | awk '{CMD[$2]++;} END {for (a in CMD) print CMD[a], a;}' | sort -nr | head -1
29 cd
nandana@nandana-007:~/devops_challenge$
```