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50 Linux Commands

1. **mkdir** : Membuat folder utama semester3

```
[student@workstation ~]$ mkdir semester3
```

2. **cd** : Masuk ke folder

```
[student@workstation ~]$ cd semester3
```

3. **pwd** : cek posisi direktori saat ini

```
[student@workstation semester3]$ pwd
/home/student/semester3
```

4. **touch** : Membuat file

```
[student@workstation semester3]$ touch datamining.txt aljabar.txt sistemoperasi.
txt mtkdiskrit.txt
```

5. **ls** : Menampilkan semua file

```
[student@workstation semester3]$ ls
aljabar.txt  datamining.txt  mtkdiskrit.txt  sistemoperasi.txt
```

6. **ls -l** : Menampilkan detail file

```
[student@workstation semester3]$ ls -l
total 20
-rw-r--r--. 1 student student 25 Sep 17 21:45 aljabar.txt
-rw-r--r--. 1 student student 25 Sep 17 21:54 aljabar_copy.txt
-rw-r--r--. 1 student student 18 Sep 17 21:44 datamining.txt
-rw-r--r--. 1 student student 14 Sep 17 21:46 mtkdiskrit.txt
-rw-r--r--. 1 student student 14 Sep 17 21:45 sistemoperasi.txt
```

7. **echo** : Mengsi file

```
[student@workstation semester3]$ echo "Materi Teknik EDA" > datamining.txt
[student@workstation semester3]$ echo "Materi pengantar aljabar" > aljabar.txt
[student@workstation semester3]$ echo "Install linux" > sistemoperasi.txt
[student@workstation semester3]$ echo "Materi logika" > mtkdiskrit.txt
```

8. **cat** : Melihat isi file

```
[student@workstation semester3]$ cat datamining.txt
Materi Teknik EDA
```

9. **less** : Membaca isi file per halaman

```
[student@workstation semester3]$ less sistemoperasi.txt

[1]+  Stopped                  less sistemoperasi.txt
```

10. **head** : Menampilkan 10 baris awal file

```
[student@workstation semester3]$ head aljabar.txt
Materi pengantar aljabar
```

11. **tail** : Menampilkan 10 baris akhir

```
[student@workstation semester3]$ tail aljabar.txt
Materi pengantar aljabar
```

12. **tail -f** : Mengikuti update realtime

```
[student@workstation semester3]$ tail -f datamining.txt
Materi Teknik EDA
Teknik pengolahan data
```

13. **cp** : Menyalin file

```
[student@workstation semester3]$ cp aljabar.txt aljabar_copy.txt
```

14. **cp datamining.txt tugas/ :** Menyalin file ke folder lain

```
[student@workstation semester3]$ cp datamining.txt tugas/
[student@workstation semester3]$ ls tugas
datamining.txt
[student@workstation semester3]$
```

15. **mv** : Mengganti nama file

```
[student@workstation semester3]$ mv aljabar.txt aljabar_linear.txt
```

16. **mv mtkdiskrit.txt tugas/ :** Memindahkan file ke folder

```
[student@workstation semester3]$ mv mtkdiskrit.txt tugas/
[student@workstation semester3]$ ls tugas
datamining.txt  mtkdiskrit.txt
```

17. **rm** : Menghapus file

```
[student@workstation semester3]$ rm aljabar_copy.txt
[student@workstation semester3]$ ls
aljabar_linear.txt  datamining.txt  semester3  sistemoperasi.txt  tugas
[student@workstation semester3]$
```

18. **chmod** : Untuk mengubah izin baca/tulis untuk pemilik

```
[student@workstation semester3]$ chmod 644 datamining.txt
[student@workstation semester3]$ ls -l datamining.txt
-rw-r--r--. 1 student student 18 Sep 17 21:44 datamining.txt
```

19. **Chmod +x** : Mengubah jadi file yang bisa dieksekusi

```
[student@workstation semester3]$ chmod +x sistemoperasi.txt
```

20. **find** : Mencari semua file

```
[student@workstation semester3]$ find semester3
semester3
semester3/datamining.txt
semester3/aljabar_linear.txt
semester3/sistemoperasi.txt
semester3/aljabar_copy.txt
semester3/tugas
semester3/tugas/mtkdiskrit.txt
semester3/tugas/datamining.txt
[student@workstation semester3]$
```

21. **grep -r :** Mencari kata di file

```
[student@workstation semester3]$ grep -r "Materi"
datamining.txt:Materi Teknik EDA
tugas/datamining.txt:Materi Teknik EDA
tugas/mtkdiskrit.txt:Materi logika
```

22. **df -h :** Cek kapasitas disk

```
[student@workstation semester3]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           2.8G   84K  2.8G   1% /dev/shm
tmpfs           1.2G   18M  1.1G   2% /run
/dev/vda4        20G   17G  3.0G  85% /
/dev/vda3       536M  221M  316M  42% /boot
/dev/vda2       200M  7.0M  193M   4% /boot/efi
tmpfs           566M  104K  566M   1% /run/user/1000
/dev/sr0        536K  536K     0 100% /run/media/meta-data
[student@workstation semester3]$
```

23. **du -sh** : Cek ukuran folder

```
[student@workstation semester3]$ du -sh
21G     .
```

24. **free -h** : Cek ram

```
[student@workstation semester3]$ free -h
               total        used        free      shared  buff/cache   available
Mem:           5.5Gi       1.5Gi       700Mi        22Mi       3.6Gi       4.0Gi
Swap:             0B          0B          0B
[student@workstation semester3]$
```

25. **uname -a** : Info sistem

```
[student@workstation semester3]$ uname -a
Linux workstation 5.14.0-362.8.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Tue Oct 3 1
1:12:36 EDT 2023 x86_64 x86_64 x86_64 GNU/Linux
```

26. **uptime** : Lama sistem berjalan

```
[student@workstation semester3]$ uptime
 22:57:42 up  2:49,  2 users,  load average: 0.06, 0.21, 0.15
[student@workstation semester3]$
```

27. **ps aux :** Menampilkan daftar proses

```
[student@workstation semester3]$ ps aux
USER        PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root          1  0.0  0.3 173072 18680 ?       Ss   20:07   0:01 /usr/lib/syst
root          2  0.0  0.0      0     0 ?       S    20:07   0:00 [kthreadd]
root          3  0.0  0.0      0     0 ?       I<   20:07   0:00 [rcu_gp]
root          4  0.0  0.0      0     0 ?       I<   20:07   0:00 [rcu_par_gp]
root          5  0.0  0.0      0     0 ?       I<   20:07   0:00 [slub_flushwq
root          6  0.0  0.0      0     0 ?       I<   20:07   0:00 [netns]
root          8  0.0  0.0      0     0 ?       I<   20:07   0:00 [kworker/0:0H
root         10  0.0  0.0      0     0 ?       I<   20:07   0:00 [mm_percpu_wq
root         12  0.0  0.0      0     0 ?       I    20:07   0:00 [rcu_tasks_kt
root         13  0.0  0.0      0     0 ?       I    20:07   0:00 [rcu_tasks_ru
root         14  0.0  0.0      0     0 ?       I    20:07   0:00 [rcu_tasks_tr
root         15  0.0  0.0      0     0 ?       S    20:07   0:00 [ksoftirqd/0]
root         16  0.0  0.0      0     0 ?       S    20:07   0:00 [pr/ttyS0]
root         17  0.0  0.0      0     0 ?       S    20:07   0:00 [pr/tty0]
root         18  0.0  0.0      0     0 ?       I    20:07   0:00 [rcu_preempt]
root         19  0.0  0.0      0     0 ?       S    20:07   0:00 [migration/0]
root         20  0.0  0.0      0     0 ?       S    20:07   0:00 [idle_inject/
root         21  0.0  0.0      0     0 ?       I    20:07   0:00 [kworker/0:1-
root         22  0.0  0.0      0     0 ?       S    20:07   0:00 [cpuhp/0]
root         23  0.0  0.0      0     0 ?       S    20:07   0:00 [cpuhp/1]
root         24  0.0  0.0      0     0 ?       S    20:07   0:00 [idle_inject/
root         25  0.0  0.0      0     0 ?       S    20:07   0:00 [migration/1]
root         26  0.0  0.0      0     0 ?       S    20:07   0:00 [ksoftirqd/1]
root         28  0.0  0.0      0     0 ?       I<   20:07   0:00 [kworker/1:0H
root         29  0.0  0.0      0     0 ?       S    20:07   0:00 [cpuhp/2]
root         30  0.0  0.0      0     0 ?       S    20:07   0:00 [idle_inject/
root         31  0.0  0.0      0     0 ?       S    20:07   0:00 [migration/2]
root         32  0.0  0.0      0     0 ?       S    20:07   0:00 [ksoftirqd/2]
root         34  0.0  0.0      0     0 ?       I<   20:07   0:00 [kworker/2:0H
root         35  0.0  0.0      0     0 ?       S    20:07   0:00 [cpuhp/3]
root         36  0.0  0.0      0     0 ?       S    20:07   0:00 [idle_inject/
root         37  0.0  0.0      0     0 ?       S    20:07   0:00 [migration/3]
root         38  0.0  0.0      0     0 ?       S    20:07   0:00 [ksoftirqd/3]
root         40  0.0  0.0      0     0 ?       I<   20:07   0:00 [kworker/3:0H
root         44  0.0  0.0      0     0 ?       S    20:07   0:00 [kdevtmpfs]
root         45  0.0  0.0      0     0 ?       I<   20:07   0:00 [inet_frag_wq
root         46  0.0  0.0      0     0 ?       S    20:07   0:00 [kauditd]
root         47  0.0  0.0      0     0 ?       S    20:07   0:00 [khungtaskd]
root         48  0.0  0.0      0     0 ?       S    20:07   0:00 [oom_reaper]
root         49  0.0  0.0      0     0 ?       I<   20:07   0:00 [writeback]
```

28. **top :** Monitioring Proses real time

```
[student@workstation semester3]$ top

top - 22:59:52 up  2:52,  2 users,  load average: 0.12, 0.18, 0.15
Tasks: 225 total,   1 running, 221 sleeping,   2 stopped,   1 zombie
%Cpu(s):  0.4 us,  0.2 sy,  0.0 ni, 99.3 id,  0.0 wa,  0.1 hi,  0.0 si,  0.0 st
MiB Mem :   5657.4 total,    665.8 free,   1565.2 used,   3743.6 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.   4092.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1630 student   20   0 4893656 254584 128568 S   1.3   4.4   0:28.63 gnome-shell
   1447 student   20   0  824136  85232  54616 S   0.7   1.5   0:11.42 Xorg
   2781 student   20   0  691328  50840  38268 S   0.3   0.9   0:08.09 gnome-terminal-
   3480 student   20   0  226488   4272   3412 R   0.3   0.1   0:00.02 top
      1 root      20   0  173072  18680  10728 S   0.0   0.3   0:01.50 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
     12 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthre
     13 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_
     14 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace
     15 root      20   0       0      0      0 S   0.0   0.0   0:00.05 ksoftirqd/0
     16 root      20   0       0      0      0 S   0.0   0.0   0:00.35 pr/ttyS0
     17 root      20   0       0      0      0 S   0.0   0.0   0:00.24 pr/tty0
     18 root      20   0       0      0      0 I   0.0   0.0   0:00.25 rcu_preempt
     19 root      rt   0       0      0      0 S   0.0   0.0   0:00.02 migration/0
     20 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     21 root      20   0       0      0      0 I   0.0   0.0   0:00.08 kworker/0:1-events
     22 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     23 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
     24 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
     25 root      rt   0       0      0      0 S   0.0   0.0   0:00.14 migration/1
     26 root      20   0       0      0      0 S   0.0   0.0   0:00.03 ksoftirqd/1
     28 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
     29 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/2
     30 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/2
     31 root      rt   0       0      0      0 S   0.0   0.0   0:00.15 migration/2
     32 root      20   0       0      0      0 S   0.0   0.0   0:00.06 ksoftirqd/2
     34 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/2:0H-events_highpri
```

29. **Jobs :** Menampilkan job background/foreground

```
[student@workstation semester3]$ jobs
[1]- Stopped                less sistemoperasi.txt
[2]+ Stopped                less Documents  (wd: ~)
```

30. **date** : Melihat tanggal saat ini

```
[student@workstation ~]$ date
Wed Sep 17 09:55:41 UTC 2025
[student@workstation ~]$
```

31. **whoami :** Melihat informasi pengguna

```
[student@workstation ~]$ whoami
student
```

32. **uptime :** Lama system berjalan

```
[student@workstation ~]$ uptime
 23:08:12 up 3 min,  2 users,  load average: 0.80, 0.87, 0.39
```

33. **hostname** : Menampilkan hostname komputer

```
[student@workstation ~]$ hostname
workstation
```

34. **ip addr** : Menampilkan alamat IP

```
[student@workstation ~]$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:00:fa:09 brd ff:ff:ff:ff:ff:ff
    altname enp0s3
    altname ens3
    inet 172.25.250.9/24 brd 172.25.250.255 scope global noprefixroute eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::5054:ff:fe00:fa09/64 scope link
       valid_lft forever preferred_lft forever
3: podman0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 76:af:27:25:9a:f4 brd ff:ff:ff:ff:ff:ff
    inet 10.88.0.1/16 brd 10.88.255.255 scope global podman0
       valid_lft forever preferred_lft forever
    inet6 fe80::74af:27ff:fe25:9af4/64 scope link
       valid_lft forever preferred_lft forever
4: veth0@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master podman0 state UP group default qlen 1000
    link/ether a6:c6:4b:64:e0:74 brd ff:ff:ff:ff:ff:ff link-netns netns-86abdb90-e035-3b9d-a0bf-6d83f1160e41
    inet6 fe80::a4c6:4bff:fe64:e074/64 scope link
       valid_lft forever preferred_lft forever
```

35. **lscpu :** Menampilkan informasi CPU

```
[student@workstation ~]$ lscpu
Architecture:            x86_64
  CPU op-mode(s):        32-bit, 64-bit
  Address sizes:         46 bits physical, 48 bits virtual
  Byte Order:            Little Endian
CPU(s):                  4
  On-line CPU(s) list:   0-3
Vendor ID:               GenuineIntel
  Model name:            Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz
    CPU family:          6
    Model:               85
    Thread(s) per core:  1
    Core(s) per socket:  1
    Socket(s):           4
    Stepping:            7
    BogoMIPS:            4988.29
    Flags:               fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ss
                         syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon rep_good nopl xtopology cpuid tsc_known_freq p
                         ni pclmulqdq vmx ssse3 fma cx16 pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xs
                         ave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch cpuid_fault invpcid_single ssbd ibrs ibpb st
                         ibp ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erm
                         s invpcid mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd avx512bw avx512vl xsaveopt xs
                         avec xgetbv1 xsaves arat vnmi umip pku ospke avx512_vnni md_clear arch_capabilities
Virtualization features:
  Virtualization:        VT-x
  Hypervisor vendor:     KVM
  Virtualization type:   full
Caches (sum of all):
  L1d:                   128 KiB (4 instances)
  L1i:                   128 KiB (4 instances)
  L2:                    16 MiB (4 instances)
  L3:                    64 MiB (4 instances)
NUMA:
  NUMA node(s):          1
  NUMA node0 CPU(s):     0-3
Vulnerabilities:
  Gather data sampling:  Unknown: Dependent on hypervisor status
  Itlb multihit:         Not affected
  L1tf:                  Not affected
  Mds:                   Not affected
  Meltdown:              Not affected
  Mmio stale data:       Vulnerable: Clear CPU buffers attempted, no microcode; SMT Host state unknown
  Retbleed:              Mitigation; Enhanced IBRS
```

36. **man ls** : Menampilkan manual (help) dari perintah

```
[student@workstation ~]$ expr 5 + 3
8
```

37. **expr** : Menghitung ekspresi matematika sederhana

```
[student@workstation ~]$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
sr0      11:0    1  536K  0 rom  /run/media/meta-data
                                 /run/media/student/config-2
vda     252:0    0   20G  0 disk
├─vda1  252:1    0    1M  0 part
├─vda2  252:2    0  200M  0 part /boot/efi
├─vda3  252:3    0  600M  0 part /boot
└─vda4  252:4    0 19.2G  0 part /var/lib/containers/storage/overlay
```

38. **lsblk :** Menampilkan partisi disk

```
LS(1)                              User Commands                             LS(1)

NAME
       ls - list directory contents

SYNOPSIS
       ls [OPTION]... [FILE]...

DESCRIPTION
       List information about the FILEs (the current directory by default).  Sort entries alphabetically if none of -cftu-
       vSUX nor --sort is specified.

       Mandatory arguments to long options are mandatory for short options too.

       -a, --all
              do not ignore entries starting with .

       -A, --almost-all
              do not list implied . and ..

       --author
              with -l, print the author of each file

       -b, --escape
              print C-style escapes for nongraphic characters

       --block-size=SIZE
              with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

       -B, --ignore-backups
              do not list implied entries ending with ~

       -c     with -lt: sort by, and show, ctime (time of last modification of file status  information);  with  -l:  show
              ctime and sort by name; otherwise: sort by ctime, newest first

       -C     list entries by columns

       --color[=WHEN]
              colorize the output; WHEN can be 'always' (default if omitted), 'auto', or 'never'; more info below

       -d, --directory
              list directories themselves, not their contents

       -D, --dired
Manual page ls(1) line 1 (press h for help or q to quit)
```

39. **ping google.com :** Menguji koneksi ke google.com

```
[student@workstation ~]$ ping google.com
PING google.com (142.250.199.238) 56(84) bytes of data.
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=1 ttl=114 time=10.7 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=2 ttl=114 time=9.41 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=3 ttl=114 time=5.91 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=4 ttl=114 time=4.58 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=5 ttl=114 time=5.14 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=6 ttl=114 time=7.11 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=7 ttl=114 time=3.02 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=8 ttl=114 time=4.70 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=9 ttl=114 time=6.62 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=10 ttl=114 time=9.09 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=11 ttl=114 time=2.25 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=12 ttl=114 time=4.16 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=13 ttl=114 time=10.2 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=14 ttl=114 time=6.11 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=15 ttl=114 time=8.53 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=16 ttl=114 time=2.76 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=17 ttl=114 time=7.57 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=18 ttl=114 time=9.31 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=19 ttl=114 time=7.44 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=20 ttl=114 time=6.02 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=21 ttl=114 time=2.13 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=22 ttl=114 time=2.15 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=23 ttl=114 time=9.83 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=24 ttl=114 time=2.30 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=25 ttl=114 time=4.67 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=26 ttl=114 time=8.19 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=27 ttl=114 time=2.43 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=28 ttl=114 time=3.50 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=29 ttl=114 time=6.71 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=30 ttl=114 time=1.98 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=31 ttl=114 time=5.87 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=32 ttl=114 time=8.13 ms
64 bytes from nchkgb-an-in-f14.1e100.net (142.250.199.238): icmp_seq=33 ttl=114 time=6.06 ms
```

40. **netstat -tuln** : Melihat koneksi aktif

```
[student@workstation ~]$ netstat -tuln
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 127.0.0.1:631           0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:8888            0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:4713            0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN
tcp6       0      0 ::1:631                 :::*                    LISTEN
tcp6       0      0 :::4713                 :::*                    LISTEN
tcp6       0      0 :::22                   :::*                    LISTEN
tcp6       0      0 :::111                  :::*                    LISTEN
udp        0      0 0.0.0.0:111             0.0.0.0:*
udp        0      0 127.0.0.1:323           0.0.0.0:*
udp        0      0 0.0.0.0:5353            0.0.0.0:*
udp        0      0 0.0.0.0:38997           0.0.0.0:*
udp6       0      0 :::49032                :::*
udp6       0      0 :::111                  :::*
udp6       0      0 ::1:323                 :::*
udp6       0      0 :::5353                 :::*
```

41. **ss -tuln** : Menampilkan port yang terbuka

```
[student@workstation ~]$ ss -tuln
Netid    State     Recv-Q    Send-Q      Local Address:Port      Peer Address:Port    Process
udp      UNCONN    0         0              0.0.0.0:111            0.0.0.0:*
udp      UNCONN    0         0            127.0.0.1:323            0.0.0.0:*
udp      UNCONN    0         0              0.0.0.0:5353           0.0.0.0:*
udp      UNCONN    0         0              0.0.0.0:38997          0.0.0.0:*
udp      UNCONN    0         0                 [::]:49032            [::]:*
udp      UNCONN    0         0                 [::]:111              [::]:*
udp      UNCONN    0         0                 [::1]:323             [::]:*
udp      UNCONN    0         0                 [::]:5353             [::]:*
tcp      LISTEN    0         4096         127.0.0.1:631            0.0.0.0:*
tcp      LISTEN    0         4096           0.0.0.0:8888           0.0.0.0:*
tcp      LISTEN    0         32             0.0.0.0:4713           0.0.0.0:*
tcp      LISTEN    0         128            0.0.0.0:22             0.0.0.0:*
tcp      LISTEN    0         4096           0.0.0.0:111            0.0.0.0:*
tcp      LISTEN    0         4096              [::1]:631             [::]:*
tcp      LISTEN    0         32                [::]:4713             [::]:*
tcp      LISTEN    0         128               [::]:22               [::]:*
tcp      LISTEN    0         4096              [::]:111              [::]:*
[student@workstation ~]$
```

42. **uname -a :** Melihat semua info sistem

```
[student@workstation ~]$ uname -a
Linux workstation 5.14.0-362.8.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Tue Oct 3 11:12:36 EDT 2023 x86_64 x86_64 x86_64 GNU/Linu
```

43. **Uname -r :** Melihat versi kernel

```
[student@workstation ~]$ uname -r
5.14.0-362.8.1.el9_3.x86_64
```

44. **ip route :** Melihat route jaringan

```
[student@workstation ~]$ ip route
default via 172.25.250.254 dev eth0 proto static metric 100
10.88.0.0/16 dev podman0 proto kernel scope link src 10.88.0.1
172.25.250.0/24 dev eth0 proto kernel scope link src 172.25.250.9 metric 100
```

45. **dmesg | tail :** Melihat log sistem terbaru

```
[student@workstation ~]$ dmesg | tail
[  153.215362] fs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.569116] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.583623] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.594885] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.607270] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.610953] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.619343] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.654121] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.659231] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[  155.668645] xfs filesystem being remounted at /newroot/home/student/.local/share/flatpak supports timestamps until 2038 (0x
7fffffff)
[student@workstation ~]$
```

46. **who** : Menampilkan user yang sedang login

```
[student@workstation ~]$ who
student  seat0      2025-09-17 23:04 (login screen)
student  :0         2025-09-17 23:04 (:0)
```

47. **pstree** : Menampilkan proses dalam bentuk pohon

```
[student@workstation ~]$ pstree
systemd─┬─ModemManager───3*[{ModemManager}]
        ├─NetworkManager───2*[{NetworkManager}]
        ├─accounts-daemon───3*[{accounts-daemon}]
        ├─agetty
        ├─atd
        ├─auditd─┬─sedispatch
        │        └─2*[{auditd}]
        ├─avahi-daemon───avahi-daemon
        ├─chronyd
        ├─colord───3*[{colord}]
        ├─conmon───jupyter-lab
        ├─crond
        ├─cupsd
        ├─dbus-broker-lau───dbus-broker
        ├─firewalld───{firewalld}
        ├─fwupd───4*[{fwupd}]
        ├─gdm─┬─gdm-session-wor─┬─gdm-x-session─┬─Xorg───{Xorg}
        │     │                 │               ├─gnome-session-b───3*[{gnome-session-b}]
        │     │                 │               └─2*[{gdm-x-session}]
        │     │                 └─2*[{gdm-session-wor}]
        │     └─2*[{gdm}]
        ├─gnome-keyring-d───3*[{gnome-keyring-d}]
        ├─gssproxy───5*[{gssproxy}]
        ├─irqbalance───{irqbalance}
        ├─lsmd
        ├─mcelog
        ├─polkitd───7*[{polkitd}]
        ├─power-profiles-───2*[{power-profiles-}]
        ├─rhsmcertd───{rhsmcertd}
        ├─rpcbind
        ├─rsyslogd───2*[{rsyslogd}]
        ├─rtkit-daemon───2*[{rtkit-daemon}]
        ├─sshd
        ├─sssd_kcm
        ├─switcheroo-cont───2*[{switcheroo-cont}]
        ├─systemd─┬─(sd-pam)
        │         ├─at-spi-bus-laun─┬─dbus-broker-lau───dbus-broker
        │         │                 └─3*[{at-spi-bus-laun}]
        │         ├─at-spi2-registr───2*[{at-spi2-registr}]
```

48. **cat /etc/os-release :** Menampilkan versi sistem operasi

```
[student@workstation ~]$ cat /etc/os-release
NAME="Red Hat Enterprise Linux"
VERSION="9.3 (Plow)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="9.3"
PLATFORM_ID="platform:el9"
PRETTY_NAME="Red Hat Enterprise Linux 9.3 (Plow)"
ANSI_COLOR="0;31"
LOGO="fedora-logo-icon"
CPE_NAME="cpe:/o:redhat:enterprise_linux:9::baseos"
HOME_URL="https://www.redhat.com/"
DOCUMENTATION_URL="https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9"
BUG_REPORT_URL="https://bugzilla.redhat.com/"

REDHAT_BUGZILLA_PRODUCT="Red Hat Enterprise Linux 9"
REDHAT_BUGZILLA_PRODUCT_VERSION=9.3
REDHAT_SUPPORT_PRODUCT="Red Hat Enterprise Linux"
REDHAT_SUPPORT_PRODUCT_VERSION="9.3"
[student@workstation ~]$
```

49. **history :** Menampilkan riwayat perintah yang pernah dijalankan

```
[student@workstation ~]$ history
    1  sudo shutdown -h now
    2  ssh student@registry
    3  sudo -o
    4  sudo -i
    5  ssh workstation; exit
    6  sudo shutdown -h now
    7  cd .config/pipewire/pipewire-pulse.conf.d/
    8  ll
    9  rm pipewire-pulse.conf
   10  cd ..
   11  cp -a /usr/share/pipewire/pipewire-pulse.conf .
   12  vim pipewire-pulse.conf
   13  sudo -i
   14  sudo poweroff
   15  cd semester3
   16  ls -l
   17  ping host
   18  curl url
   19  whoami
   20  uptime
   21  hostname
   22  ip addr
   23  iscpu
   24  lscpu
   25  man ls
   26  expr 5+3
   27  expr 5 + 3
   28  lsblk
   29  ping google.com
   30  hostname
   31  nestat -tuln
   32  netstat -tuln
   33  ss -tuln
   34  uname -a
   35  uname -r
   36  ip route
   37  dmsg | tail
   38  dmesg | tail
   39  who
   40  pstree
```

50. **groups :** Melihat group yang dimiliki user saat ini

```
[student@workstation ~]$ groups
student wheel
```