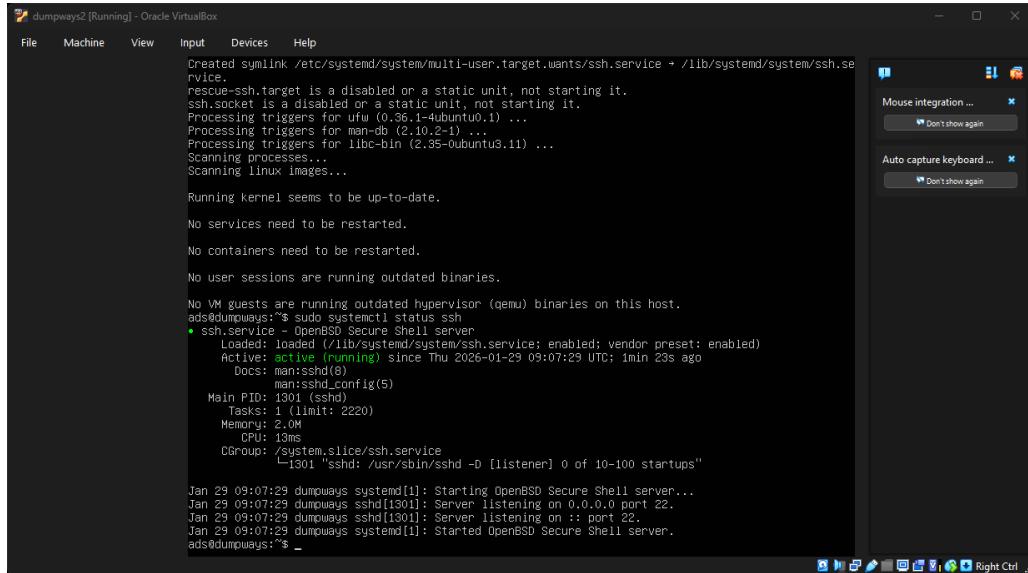


1. Akses server menggunakan terminal (Windows Terminal/PuTTY/etc.)

Jawab :

- Untuk bisa mengakses server dari windows terminal kita harus menginstall sshserver terlebih dahulu (sudo apt install openssh-server)

- Lalu cek status apakah ssh sudah aktif (sudo systemctl status ssh)



```
dumpways2 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /lib/systemd/system/ssh.service.
rescue-ssh.target is a disabled or a static unit, not starting it.
ssh.socket is a disabled or a static unit, not starting it.
Processing triggers for dhw (0.36.1-1~ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.11) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

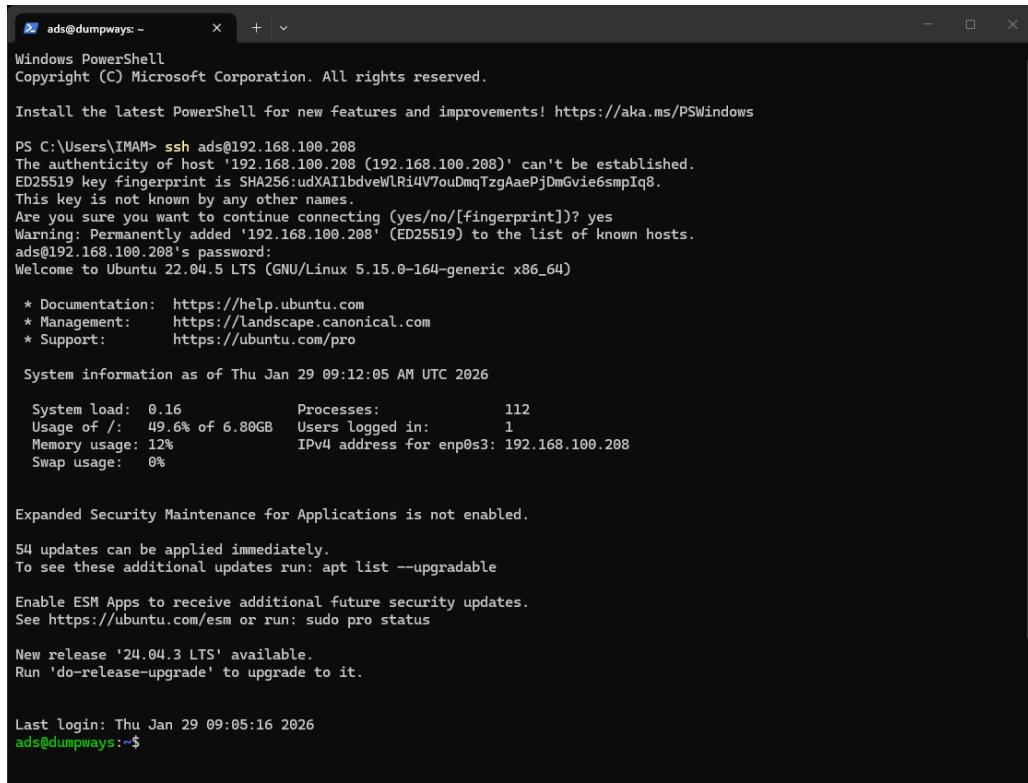
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ads@dumpways:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
  Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2026-01-29 09:07:29 UTC; 1min 23s ago
    Docs: man:sshd(8)
           man:sshd_config(5)
  Main PID: 1301 (sshd)
     Tasks: 1 (limit: 2220)
    Memory: 2.0M
      CPU: 13ms
     CGroup: /system.slice/ssh.service
             └─1301 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Jan 29 09:07:29 dumpways systemd[1]: Starting OpenBSD Secure Shell server...
Jan 29 09:07:29 dumpways sshd[1301]: Server listening on 0.0.0.0 port 22.
Jan 29 09:07:29 dumpways sshd[1301]: Server listening on :: port 22.
Jan 29 09:07:29 dumpways systemd[1]: Started OpenBSD Secure Shell server.
ads@dumpways:~$
```

- Lalu jalankan ssh di terminal (ssh username@ip address)



```
ads@dumpways:~ x + v
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\IMAM> ssh ads@192.168.100.208
The authenticity of host '192.168.100.208' (192.168.100.208) can't be established.
ED25519 key fingerprint is SHA256:udXAII1bdveWLri4V7ouDmqTzgAaePjDmGvie6smpIq8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.100.208' (ED25519) to the list of known hosts.
ads@192.168.100.208's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:   https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Jan 29 09:12:05 AM UTC 2026

System load: 0.16          Processes:           112
Usage of /: 49.6% of 6.80GB  Users logged in:      1
Memory usage: 12%          IPv4 address for enp0s3: 192.168.100.208
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

54 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Jan 29 09:05:16 2026
ads@dumpways:~$
```

2. Konfigurasi ssh kalian agar bisa di akses *hanya menggunakan publickey* (password opsional, bisa dimatikan)

- Kita juga bisa mengakses menggunakan publickey dengan cara membuat public key terlebih dahulu (ssh-keygen)
- lalu key akan di simpan di direktori ssh , kita juga bisa mengubah nama key (disini saya ubah dengan kunciguweh)

```
ads@dumpways:~/ssh      x  +  v
ads@dumpways:~$ exit
logout
Connection to 192.168.100.208 closed.
PS C:\Users\IMAM> ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (C:\Users\IMAM\.ssh/id_ed25519): C:\Users\IMAM\.ssh/kunciguweh
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\IMAM\.ssh/kunciguweh
Your public key has been saved in C:\Users\IMAM\.ssh/kunciguweh.pub
The key fingerprint is:
SHA256:gEge0EOtwtLOJJC+gUSDhirQFZtGL0f4EAxjkix+yk imam@MSI
The key's randomart image is:
+--[ED25519 256]--+
|.*OB*
|=B*.*
|==o= +
|=.* o o
|*= + . S
|X.+ o .
|+E =
|. +
|
+----[SHA256]----+
PS C:\Users\IMAM> ssh ads@192.168.100.208
ads@192.168.100.208's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Jan 29 09:22:22 AM UTC 2026

System load:  0.01          Processes:           110
Usage of /:   50.8% of 6.80GB  Users logged in:     1
Memory usage: 12%           IPv4 address for enp0s3: 192.168.100.208
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.
```

- Kita bisa copy isi dari file kunciguweh.pub

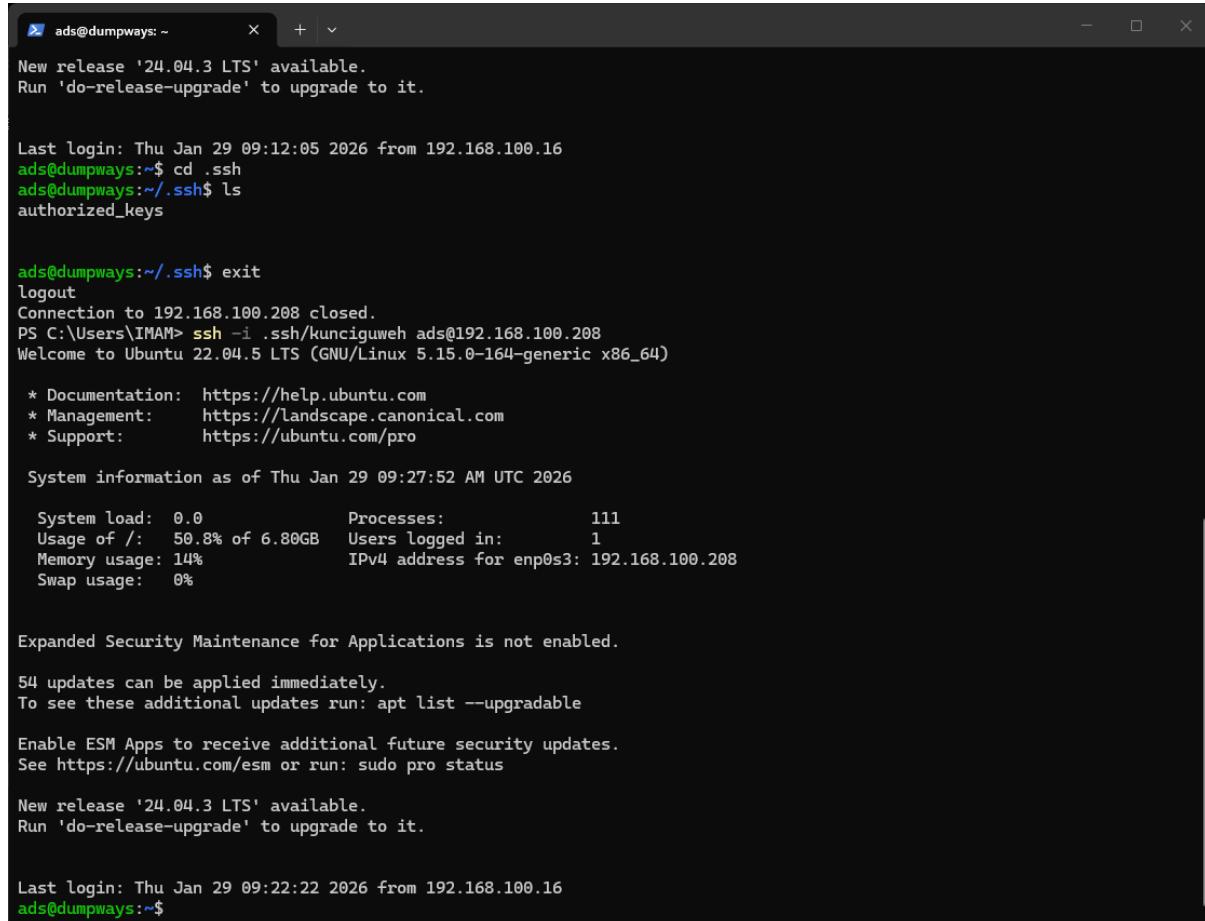
- lalu kita akses authorized_key pada direktori ssh, dan paste key yang ada didalam file kunciguweh

```
Last login: Thu Jan 29 09:12:05 2026 from 192.168.100.16
ads@dumpways:~$ cd .ssh
ads@dumpways:~/ssh$ ls
authorized_keys
ads@dumpways:~/ssh$ nano authorized_keys
ads@dumpways:~/ssh$ |
```



```
GNU nano 6.2
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIJhYR2mRQ+URbjz+qL0/v1ZLPzn4ycun+N+u9L0j+z+ imam@MSI
```

- lalu kita bisa mengakses server dari terminal menggunakan public key dengan cara
ssh -i .ssh/nama file key username@ip



```
ads@dumpways: ~      + | 
New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Jan 29 09:12:05 2026 from 192.168.100.16
ads@dumpways:~$ cd .ssh
ads@dumpways:~/ssh$ ls
authorized_keys

ads@dumpways:~/ssh$ exit
logout
Connection to 192.168.100.208 closed.
PS C:\Users\IMAM> ssh -i .ssh/kunciguweh ads@192.168.100.208
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-164-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Jan 29 09:27:52 AM UTC 2026

System load: 0.0          Processes:           111
Usage of /: 50.8% of 6.80GB Users logged in:   1
Memory usage: 14%          IPv4 address for enp0s3: 192.168.100.208
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

54 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Jan 29 09:22:22 2026 from 192.168.100.16
ads@dumpways:~$
```

3. Buat step by step penggunaan text manipulation! (grep, sed, cat, echo)

a. cat = membaca isi file

- cat bisa membuat file baru dengan cara (cat > nama file) lalu ketik masukan text
- cat bisa menggabungkan 2 file kedalam file baru (cat file1 file2 > file3)
- cat bisa menambah isi file dengan cara (cat file1 >> file3), pada baris terakhir didalam file 3 akan menambahkan isi file1

```
ads@dumpways:~$ sed -i 's/hello/hai/g' file1
ads@dumpways:~$ cat file1
hai file1
ads@dumpways:~$ ls
dumpways file2 file.js
ads@dumpways:~$ hello there > file1
Command 'hello' not found, but can be installed with:
sudo snap install hello          # version 2.10, or
sudo apt install hello           # version 2.10-2ubuntu4
sudo apt install hello-traditional # version 2.10-5
See 'snap info hello' for additional versions.
ads@dumpways:~$ cat > file1
hello file1
^C
ads@dumpways:~$ ls
dumpways file1 file2 file.js
ads@dumpways:~$ cat file1
hello file1
ads@dumpways:~$ cat file2
hello dumpways di file2
ads@dumpways:~$ cat file1 file2 > file3
ads@dumpways:~$ cat file3
hello file1
hello dumpways di file2
ads@dumpways:~$
```

b. sed = stream editor, bisa mengubah, menghapus text didalam file output

- mengubah kata hello menjadi hai di dalam file1 (sed -i 's/hello/hai/g' file1), -i berguna untuk mengubah file asli, tanpa ada -i hanya yang berubah namun file asli tidak berubah

```
ads@dumpways:~$ sed -i 's/hello/hai/g' file1
ads@dumpways:~$ cat file1
hai file1
ads@dumpways:~$
```

- menghapus baris ke-2 pada file3 (sed -i '2s' file3)



```
ads@dumpways:~$ ls
dumpways  file1  file2  file3  file.js  sort1
ads@dumpways:~$ cat file3
hello file1
hello dumpways di file2
ads@dumpways:~$ sed -i '2d' file3
ads@dumpways:~$ cat file3
hello file1
ads@dumpways:~$ |
```

A screenshot of a terminal window titled "ads@dumpways:~". It shows a sequence of commands: listing files with 'ls', viewing the contents of 'file3' with 'cat', using 'sed -i '2d'' to delete the second line of 'file3', and then viewing the updated contents of 'file3' with another 'cat'. The terminal has a dark background with light-colored text.

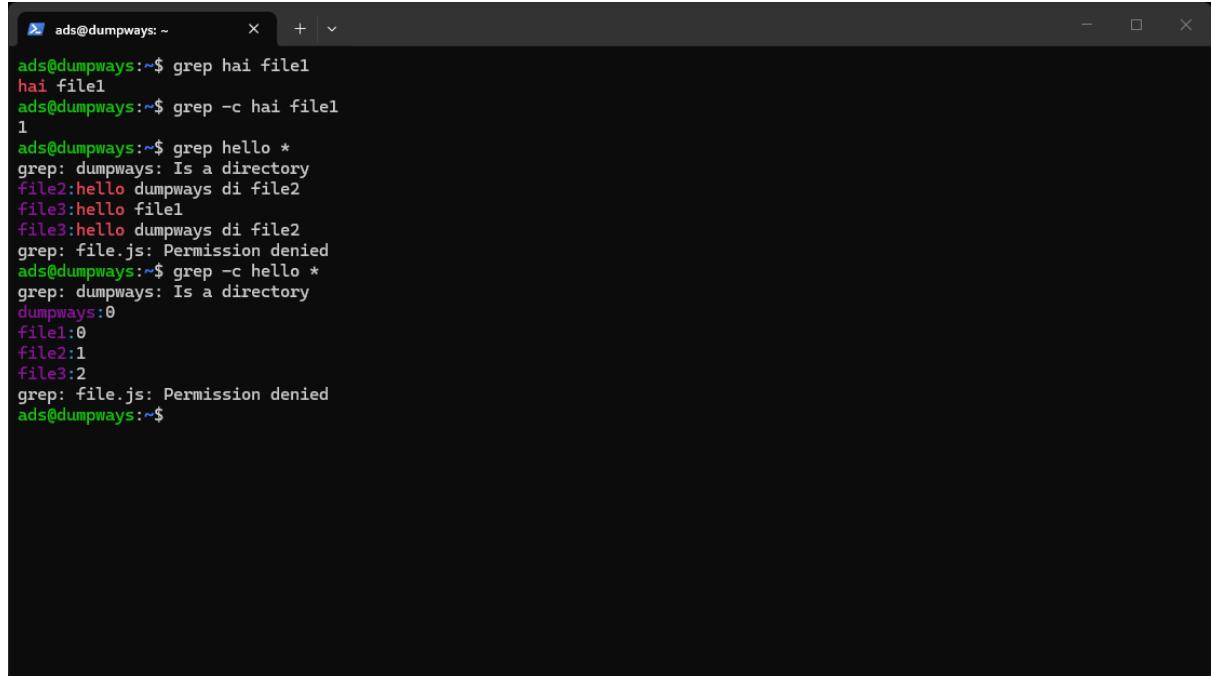
c. grep = Global Regular Expression Print

- mencari kata didalam file (grep hai file1)

- menghitung kata didalam file (grep -c hai file1)

- mencari kata didalam direktori menggunakan '*' (grep hello *)

-menghitung kata didalam direktori menggunakan '*' (grep -c hello *)

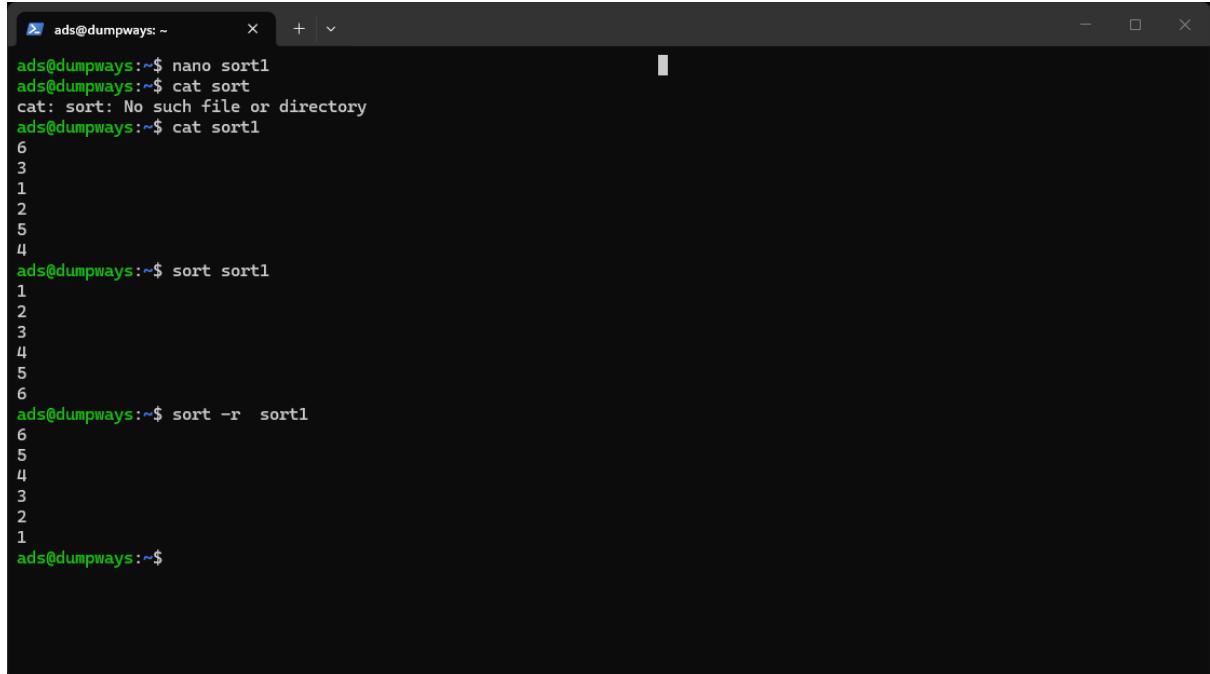


```
ads@dumpways:~$ grep hai file1
hai file1
ads@dumpways:~$ grep -c hai file1
1
ads@dumpways:~$ grep hello *
grep: dumpways: Is a directory
file2:hello dumpways di file2
file3:hello file1
file3:hello dumpways di file2
grep: file.js: Permission denied
ads@dumpways:~$ grep -c hello *
grep: dumpways: Is a directory
dumpways:0
file1:0
file2:1
file3:2
grep: file.js: Permission denied
ads@dumpways:~$
```

A screenshot of a terminal window titled "ads@dumpways:~". It demonstrates various uses of 'grep': searching for 'hai' in 'file1', counting occurrences of 'hai' in 'file1' (outputting 1), searching for 'hello' in all files in the current directory, and counting occurrences of 'hello' in all files (outputting 2). It also shows an attempt to search in 'file.js' which is denied due to permission. The terminal has a dark background with light-colored text.

d. sort = mengurutkan kata atau angka

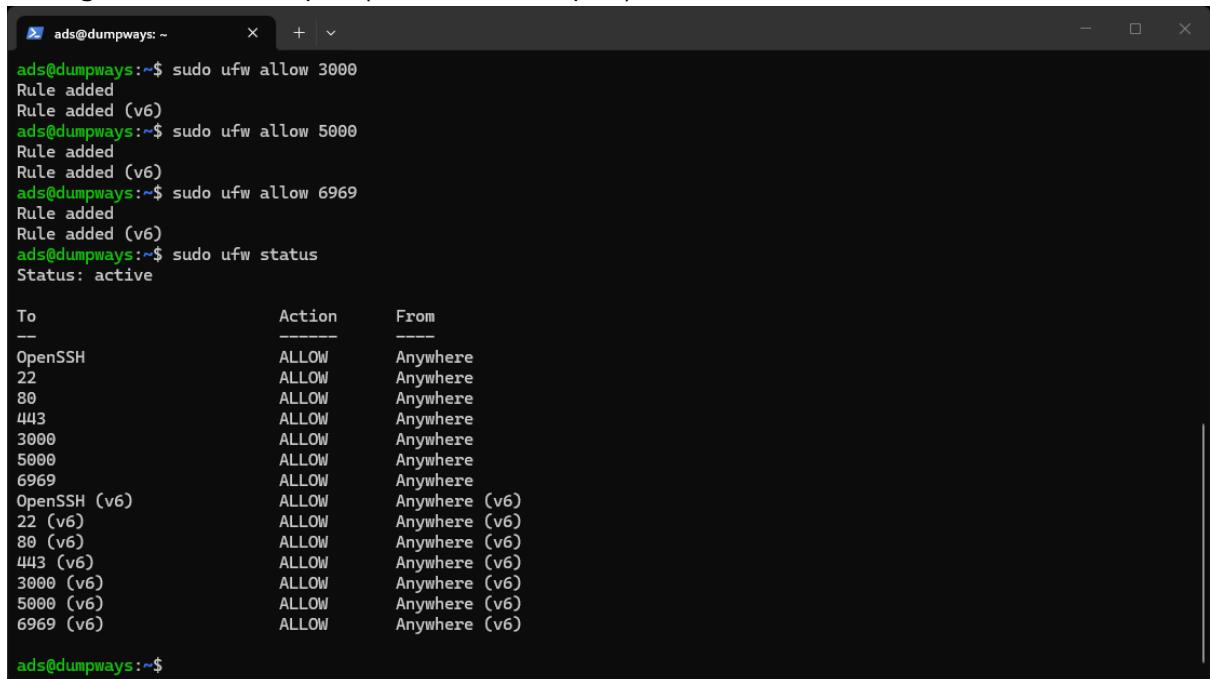
- urut secara asc dengan (sort nama file)
- urut secara des dengan (sort -r nama file)



```
ads@dumpways:~$ nano sort1
ads@dumpways:~$ cat sort1
cat: sort: No such file or directory
ads@dumpways:~$ cat sort1
6
3
1
2
5
4
ads@dumpways:~$ sort sort1
1
2
3
4
5
6
ads@dumpways:~$ sort -r sort1
6
5
4
3
2
1
ads@dumpways:~$
```

4. Nyalakan ufw dengan memberikan akses untuk port 22, 80, 443, 3000, 5000 dan 6969!

- ufw = Uncomplicated Firewall
- untuk mengizinkan/memblokir port
- mengizinkan sebuah port (sudo ufw allow port)



```
ads@dumpways:~$ sudo ufw allow 3000
Rule added
Rule added (v6)
ads@dumpways:~$ sudo ufw allow 5000
Rule added
Rule added (v6)
ads@dumpways:~$ sudo ufw allow 6969
Rule added
Rule added (v6)
ads@dumpways:~$ sudo ufw status
Status: active

To                         Action      From
--                         --          --
OpenSSH                    ALLOW       Anywhere
22                        ALLOW       Anywhere
80                        ALLOW       Anywhere
443                       ALLOW       Anywhere
3000                      ALLOW       Anywhere
5000                      ALLOW       Anywhere
6969                      ALLOW       Anywhere
OpenSSH (v6)                ALLOW       Anywhere (v6)
22 (v6)                   ALLOW       Anywhere (v6)
80 (v6)                   ALLOW       Anywhere (v6)
443 (v6)                  ALLOW       Anywhere (v6)
3000 (v6)                 ALLOW       Anywhere (v6)
5000 (v6)                 ALLOW       Anywhere (v6)
6969 (v6)                 ALLOW       Anywhere (v6)

ads@dumpways:~$
```

- memblokir sebuah port (sudo ufw deny port)

```
ads@dumpways: ~      + | x
80 (v6)          ALLOW    Anywhere (v6)
443 (v6)         ALLOW    Anywhere (v6)
3000 (v6)        ALLOW    Anywhere (v6)
5000 (v6)        ALLOW    Anywhere (v6)
6969 (v6)        ALLOW    Anywhere (v6)

ads@dumpways:~$ sudo ufw deny 22
Rule updated
Rule updated (v6)
ads@dumpways:~$ sudo ufw status
Status: active

To           Action   From
--           --      --
OpenSSH       ALLOW    Anywhere
22           DENY    Anywhere
80           ALLOW    Anywhere
443          ALLOW    Anywhere
3000         ALLOW    Anywhere
5000         ALLOW    Anywhere
6969         ALLOW    Anywhere
OpenSSH (v6)  ALLOW    Anywhere (v6)
22 (v6)       DENY    Anywhere (v6)
80 (v6)       ALLOW    Anywhere (v6)
443 (v6)     ALLOW    Anywhere (v6)
3000 (v6)    ALLOW    Anywhere (v6)
5000 (v6)    ALLOW    Anywhere (v6)
6969 (v6)    ALLOW    Anywhere (v6)

ads@dumpways:~$ |
```