

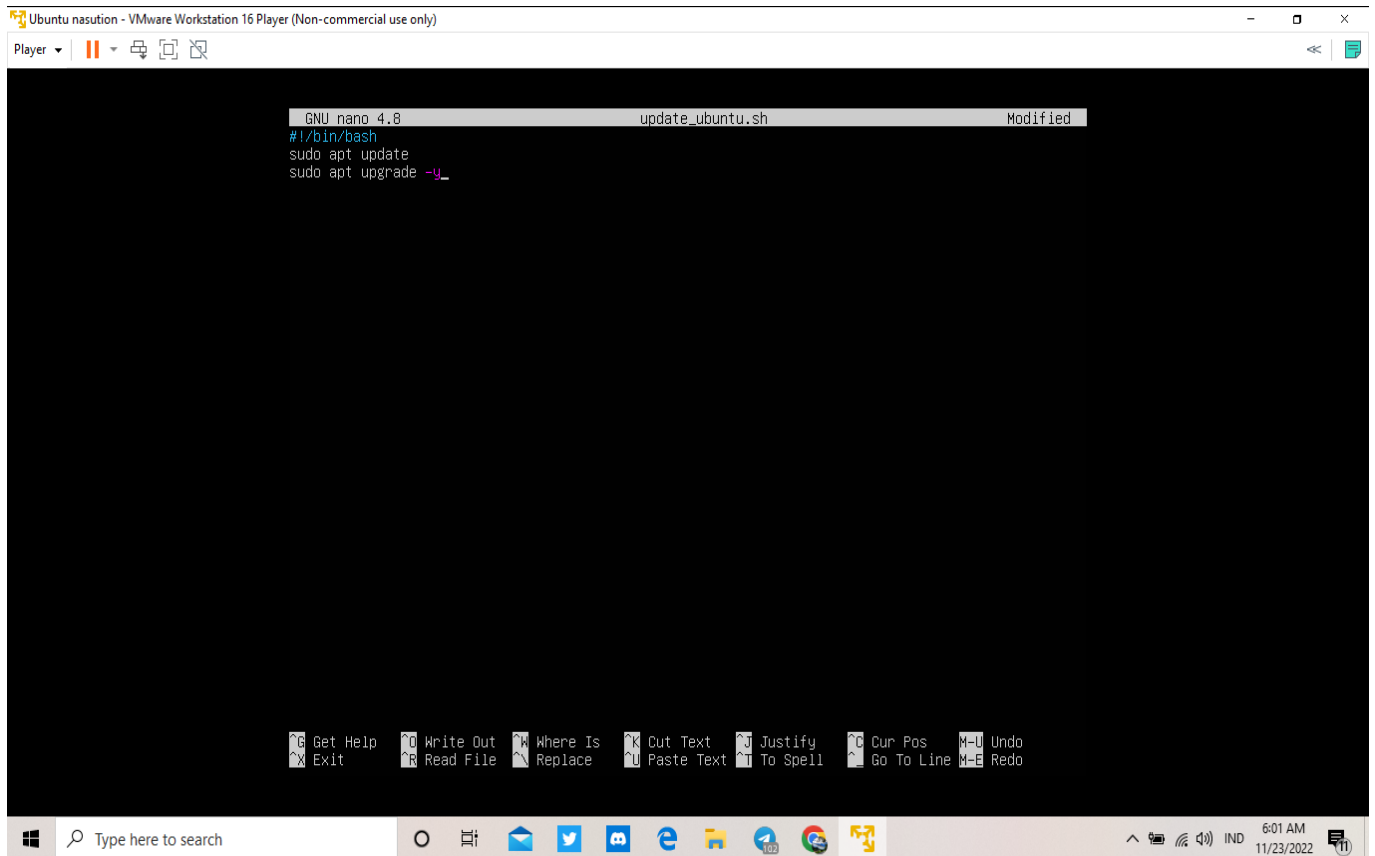
Task 6

Soal 1

shell : Sebuah program yang memungkinkan kita untuk mengirimkan sebuah perintah kepada komputer menggunakan text

bash : merupakan salah satu bahasa scripting shell yang berjalan pada sistem operasi berbasis unix (mac os) atau unix like (freebsd, linux) yang berfungsi sebagai penerjemah antara perintah user ke dalam sistem operasi, atau output yang diberikan dari sistem operasi ke user

Soal 2. Bash script untuk update dan upgrade



The screenshot shows a VMware Workstation 16 Player window titled "Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)". Inside the player, a terminal window is open, displaying the contents of a file named "update_ubuntu.sh" edited in nano 4.8. The script contains the following commands:

```
#!/bin/bash
sudo apt update
sudo apt upgrade -y
```

The terminal window also shows a list of nano editor shortcuts at the bottom:

```
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos  M-U Undo
^X Exit      ^R Read File  ^_ Replace   ^U Paste Text ^T To Spell  ^_ Go To Line M-E Redo
```

The VMware Workstation interface includes a top toolbar with icons for Player, Run, Screenshot, and other functions. The bottom status bar shows the system clock as 6:01 AM on 11/23/2022.

```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
Preparing to unpack .../libnss-systemd_245.4-4ubuntu3.19_amd64.deb ...
Unpacking libnss-systemd:amd64 (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../udev_245.4-4ubuntu3.19_amd64.deb ...
Unpacking udev (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../libudev1_245.4-4ubuntu3.19_amd64.deb ...
Unpacking libudev1:amd64 (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Setting up libudev1:amd64 (245.4-4ubuntu3.19) ...
(Reading database ... 89263 files and directories currently installed.)
Preparing to unpack .../systemd-sysv_245.4-4ubuntu3.19_amd64.deb ...
Unpacking systemd-sysv (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../systemd-timesyncd_245.4-4ubuntu3.19_amd64.deb ...
Unpacking systemd-timesyncd (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../libpam-systemd_245.4-4ubuntu3.19_amd64.deb ...
Unpacking libpam-systemd:amd64 (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../systemd_245.4-4ubuntu3.19_amd64.deb ...
Unpacking systemd (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Preparing to unpack .../libsystemd0_245.4-4ubuntu3.19_amd64.deb ...
Unpacking libsystemd0:amd64 (245.4-4ubuntu3.19) over (245.4-4ubuntu3.18) ...
Setting up libsystemd0:amd64 (245.4-4ubuntu3.19) ...
Setting up udev (245.4-4ubuntu3.19) ...
update-initramfs: deferring update (trigger activated)
Setting up systemd (245.4-4ubuntu3.19) ...
Setting up systemd-timesyncd (245.4-4ubuntu3.19) ...
Setting up systemd-sysv (245.4-4ubuntu3.19) ...
Setting up libnss-systemd:amd64 (245.4-4ubuntu3.19) ...
Setting up libpam-systemd:amd64 (245.4-4ubuntu3.19) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for dbus (1.12.16-2ubuntu2.3) ...
Processing triggers for initramfs-tools (0.136ubuntu6.7) ...
update-initramfs: Generating /boot/initrd.img-5.4.0-132-generic
I: The initramfs will attempt to resume from /dev/dm-1
I: (/dev/mapper/ubuntu--vg-lv--0)
I: Set the RESUME variable to override this.
aulia@rahman:~/minggu2$ _
```

Soal 3. Bash script untuk akses port 22,80,443

```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
GNU nano 4.8 allow.sh
#!/bin/bash
allowed_port=(22 80 443)
for port_number in "${allowed_port[@]}"
do
    sudo ufw allow $port_number
done

aulia@rahman:~/minggu2$ sudo chmod u+x allow.sh_
```

```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/minggu2$ sudo chmod u+x allow.sh
[sudo] password for aulia:
aulia@rahman:~/minggu2$ ./allow.sh
Rules updated
Rules updated (v6)
Rules updated
Rules updated (v6)
Rules updated
Rules updated (v6)
aulia@rahman:~/minggu2$ sudo ufw status
Status: inactive
aulia@rahman:~/minggu2$ sudo ufw enable
Firewall is active and enabled on system startup
aulia@rahman:~/minggu2$ sudo ufw status
Status: active

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

aulia@rahman:~/minggu2$ _
```

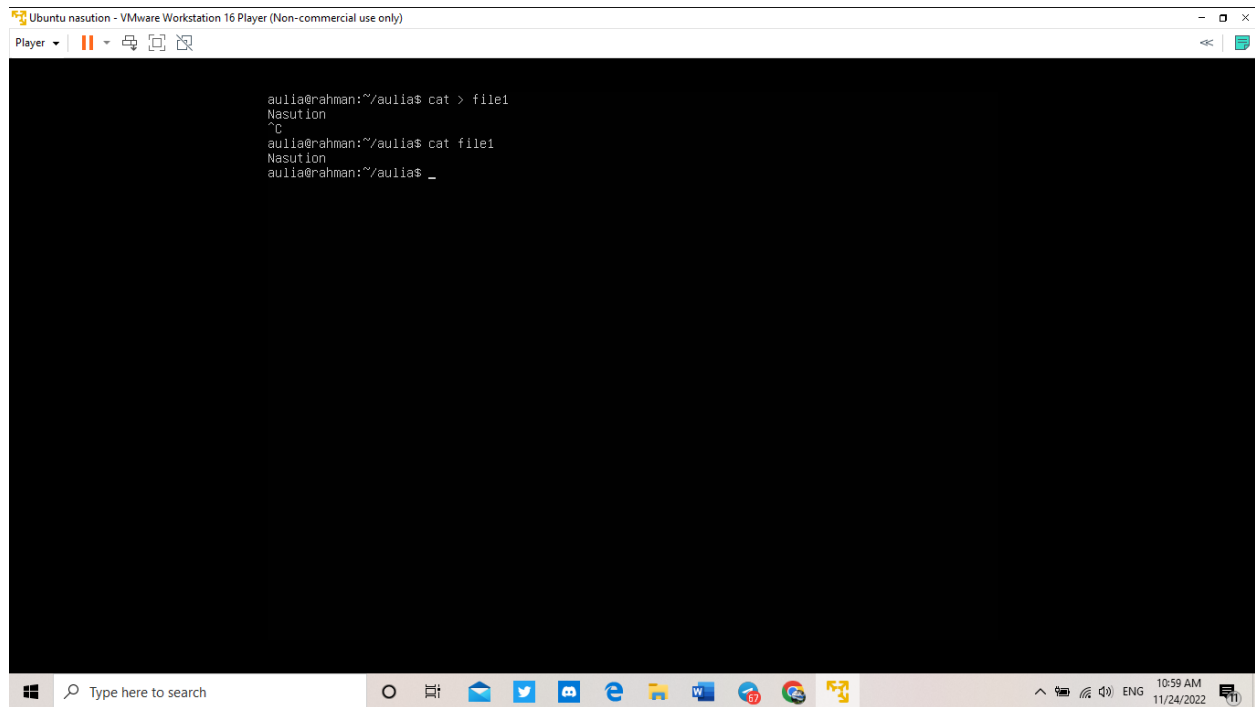
SOAL 4. Cat, grep, echo sort menggunakan bash script

Cat

Melihat isi suatu file

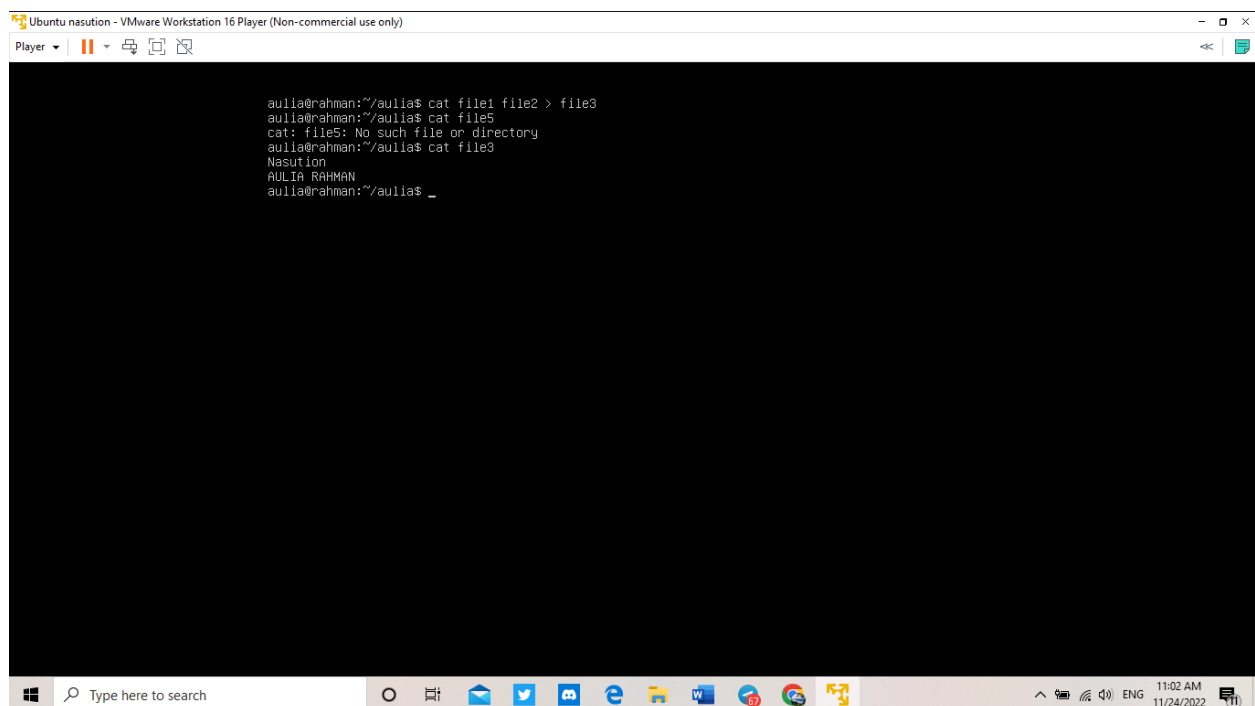
```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ ls
A cat 801.i6.5.linux-amd64.tar.gz my_ahk_script.sh
aulia@rahman:~/aulia$ cat cat
#!/bin/bash
cat ctrl.ahk
aulia@rahman:~/aulia$ _
```

Cat juga bisa untuk membuat suatu file baru serta memasukkan teks kedalamnya. Dengan perintah `cat > nama_file`, lalu isikan teks, jika sudah tekan enter lalu `ctrl + c`.



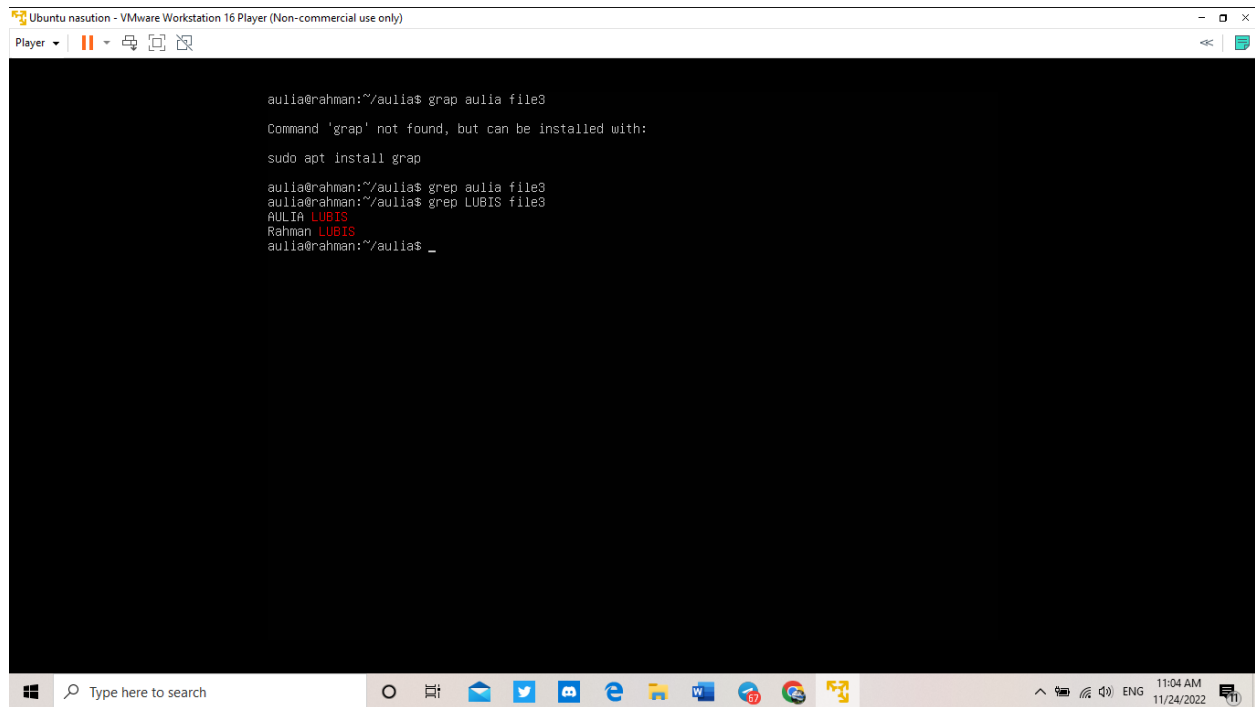
```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ cat > file1
Nasution
^C
aulia@rahman:~/aulia$ cat file1
Nasution
aulia@rahman:~/aulia$ _
```

CAT juga bisa menggabungkan dua buah file ke dalam satu file dengan perintah `cat`



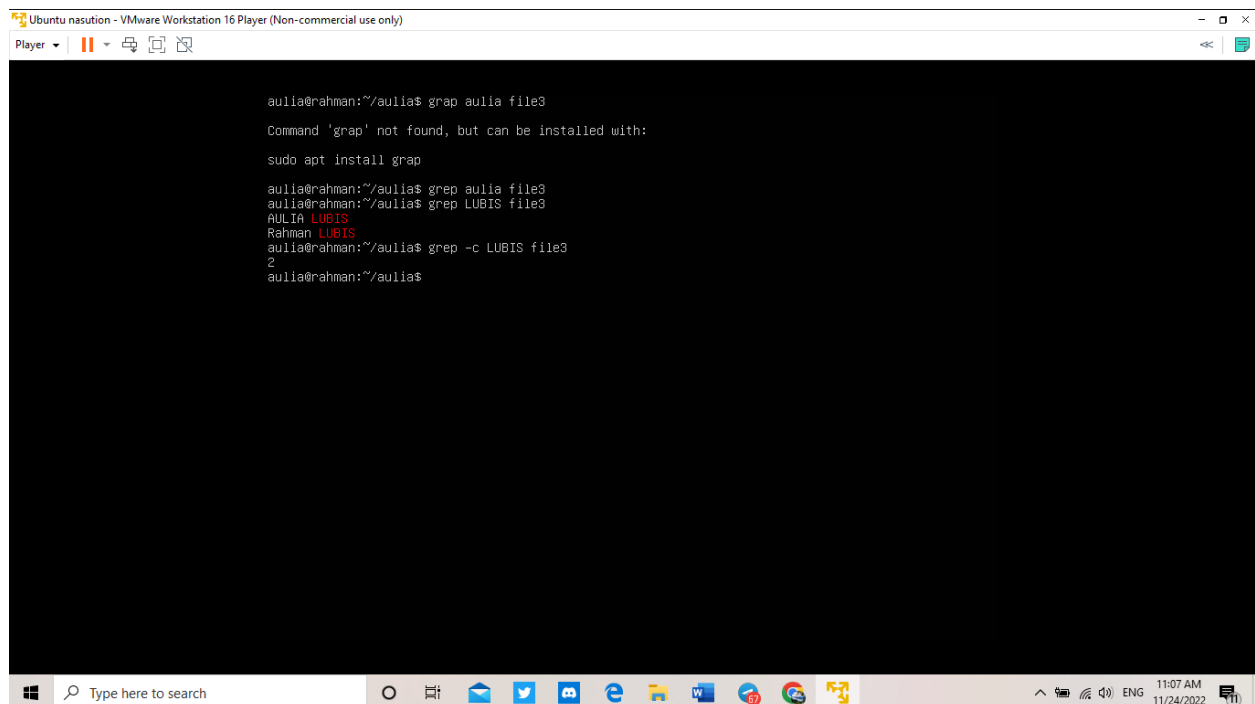
```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ cat file1 file2 > file3
aulia@rahman:~/aulia$ cat file5
cat: file5: No such file or directory
aulia@rahman:~/aulia$ cat file3
Nasution
AULIA RAHMAN
aulia@rahman:~/aulia$ _
```

Grep merupakan perintah untuk melakukan pencarian sebuah text dalam sebuah file yang telah dibuat



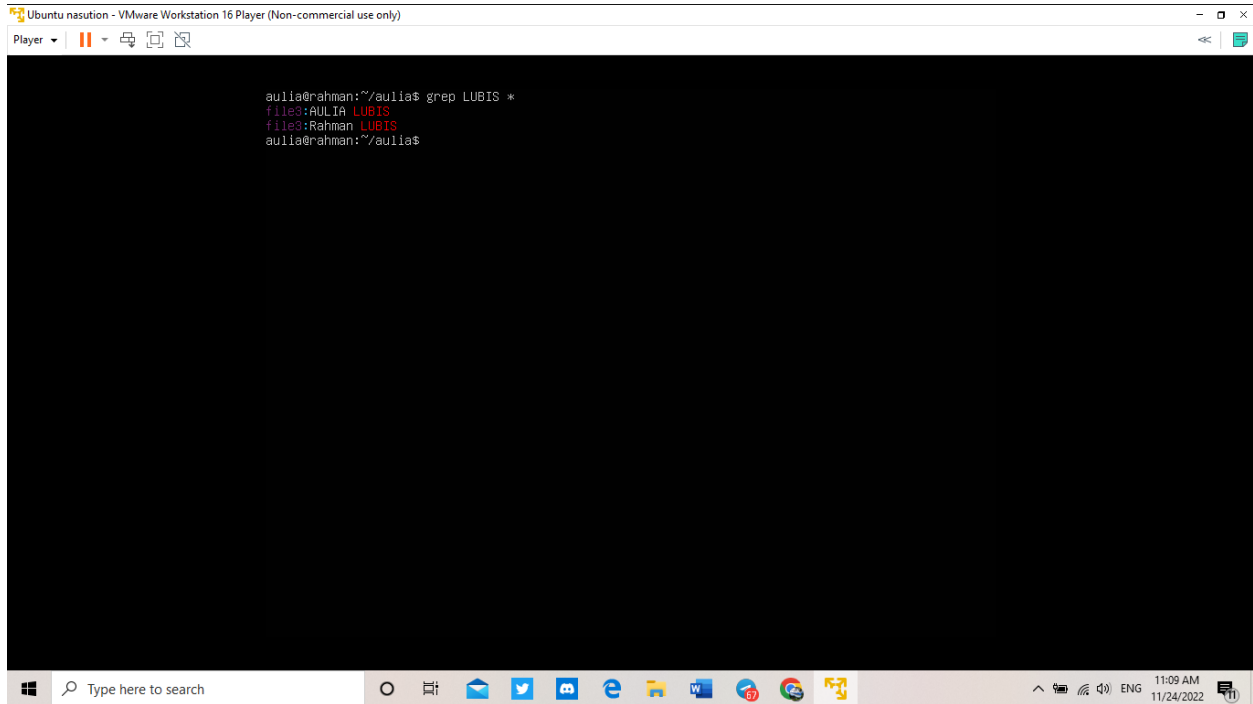
```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ grap aulia file3
Command 'grap' not found, but can be installed with:
sudo apt install grap
aulia@rahman:~/aulia$ grep aulia file3
aulia@rahman:~/aulia$ grep LUBIS file3
AULIA LUBIS
Rahman LUBIS
aulia@rahman:~/aulia$ _
```

Penambahan -c untuk menghitung jumlah kata pada file



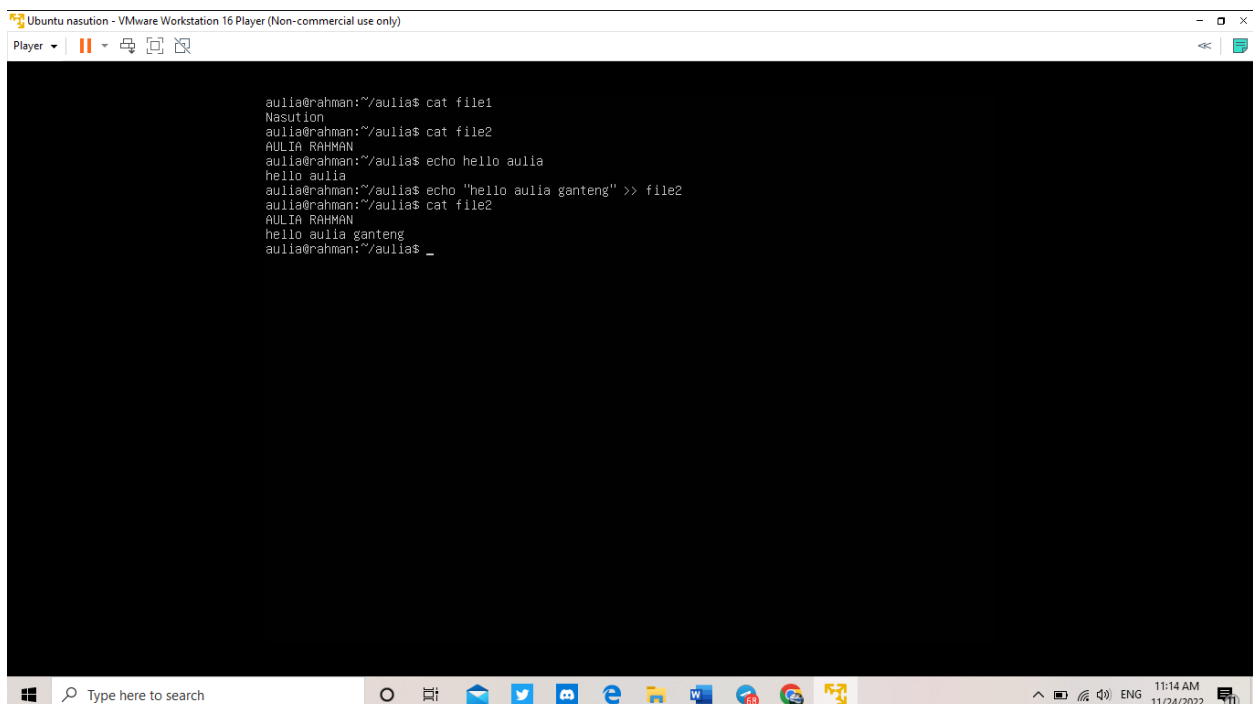
```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ grap aulia file3
Command 'grap' not found, but can be installed with:
sudo apt install grap
aulia@rahman:~/aulia$ grep aulia file3
aulia@rahman:~/aulia$ grep LUBIS file3
AULIA LUBIS
Rahman LUBIS
aulia@rahman:~/aulia$ grep -c LUBIS file3
2
aulia@rahman:~/aulia$
```

Perintah `grep aulia *`, bermaksud untuk mencari teks semuanya di dalam file yang ada di dalam direktori saat kita menjalankan perintah tersebut.



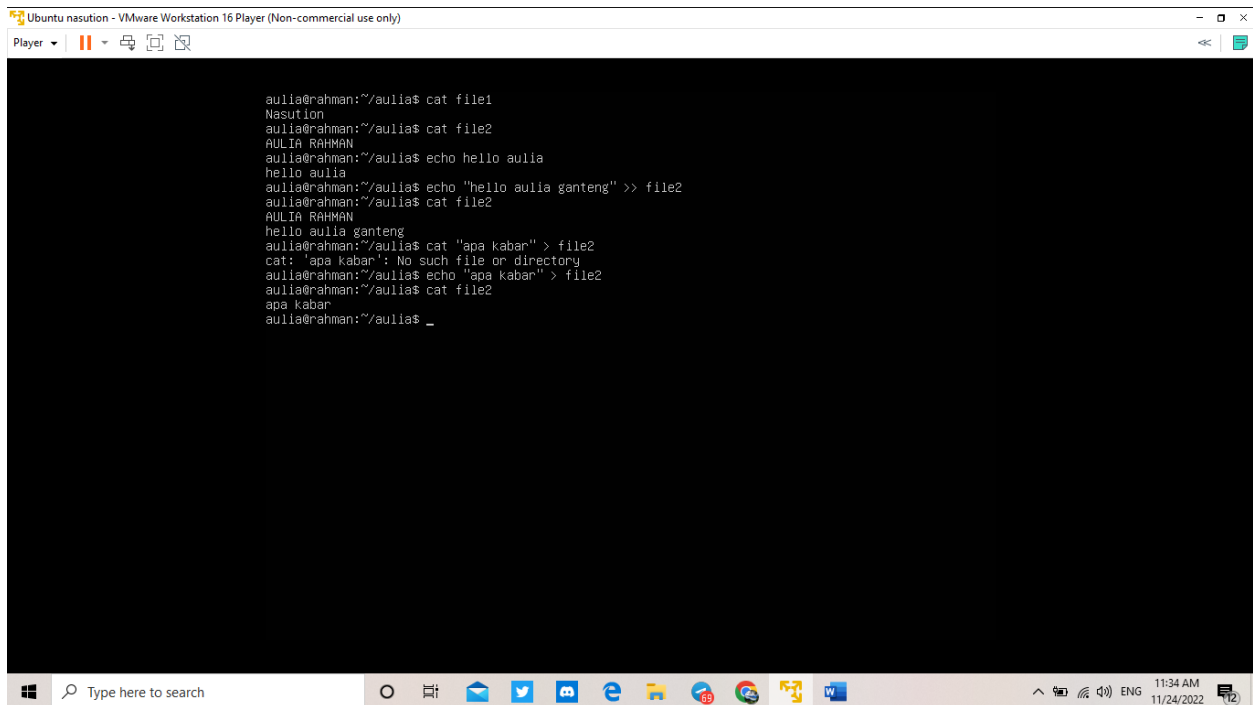
```
aulia@rahman:~/aulia$ grep LUBIS *
file3:AULIA LUBIS
file3:Rahman LUBIS
aulia@rahman:~/aulia$
```

Perintah `echo` digunakan untuk mencetak string dan `echo "kalimat" >> nama file` untuk menyisipkan kata



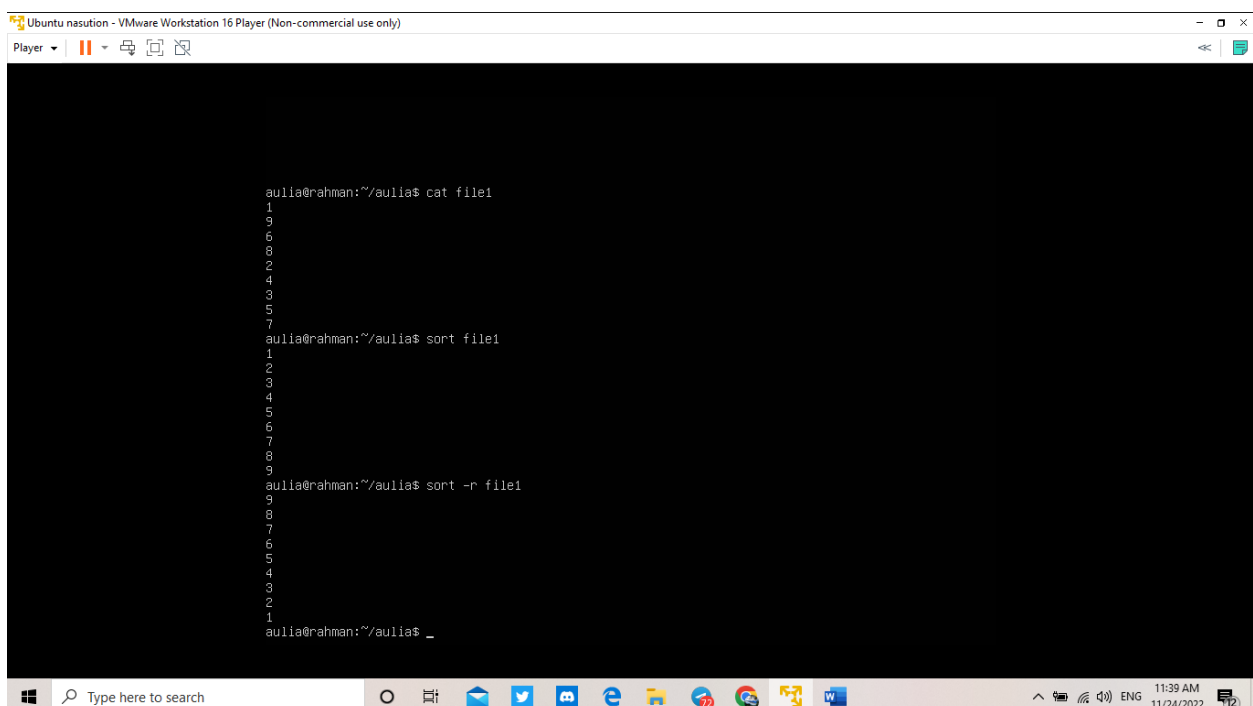
```
aulia@rahman:~/aulia$ cat file1
Nasution
aulia@rahman:~/aulia$ cat file2
AULIA RAHMAN
aulia@rahman:~/aulia$ echo hello aulia
hello aulia
aulia@rahman:~/aulia$ echo "hello aulia ganteng" >> file2
aulia@rahman:~/aulia$ cat file2
AULIA RAHMAN
hello aulia ganteng
aulia@rahman:~/aulia$ _
```

Echo “kata” > nama file, untuk me replace semua kalimat dalam file



```
aulia@rahman:~/aulia$ cat file1
Nasution
aulia@rahman:~/aulia$ cat file2
AULIA RAHMAN
aulia@rahman:~/aulia$ echo hello aulia
hello aulia
aulia@rahman:~/aulia$ echo "hello aulia ganteng" >> file2
aulia@rahman:~/aulia$ cat file2
AULIA RAHMAN
hello aulia ganteng
aulia@rahman:~/aulia$ cat "apa kabar" > file2
cat: 'apa kabar': No such file or directory
aulia@rahman:~/aulia$ echo "apa kabar" > file2
aulia@rahman:~/aulia$ cat file2
apa kabar
aulia@rahman:~/aulia$ _
```

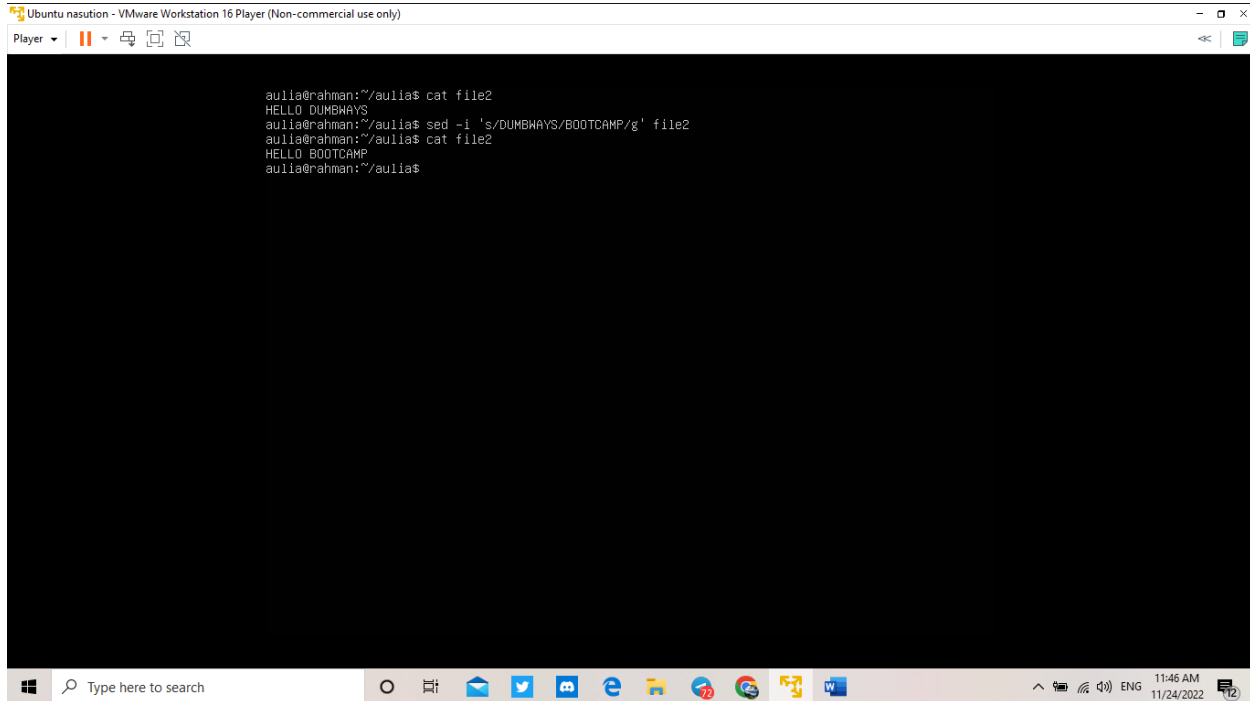
Perintah sort digunakan untuk mengurutkan data didalam suatu file secara ascending atau berurutan dari nilai terkecil ke yang terbesar, dan jika di tambah -r digunakan untuk me reverse



```
aulia@rahman:~/aulia$ cat file1
1
9
6
8
2
4
3
5
7
aulia@rahman:~/aulia$ sort file1
1
2
3
4
5
6
7
8
9
aulia@rahman:~/aulia$ sort -r file1
9
8
7
6
5
4
3
2
1
aulia@rahman:~/aulia$ _
```

Mengganti text 'Dumbways' ke 'Bootcamp'

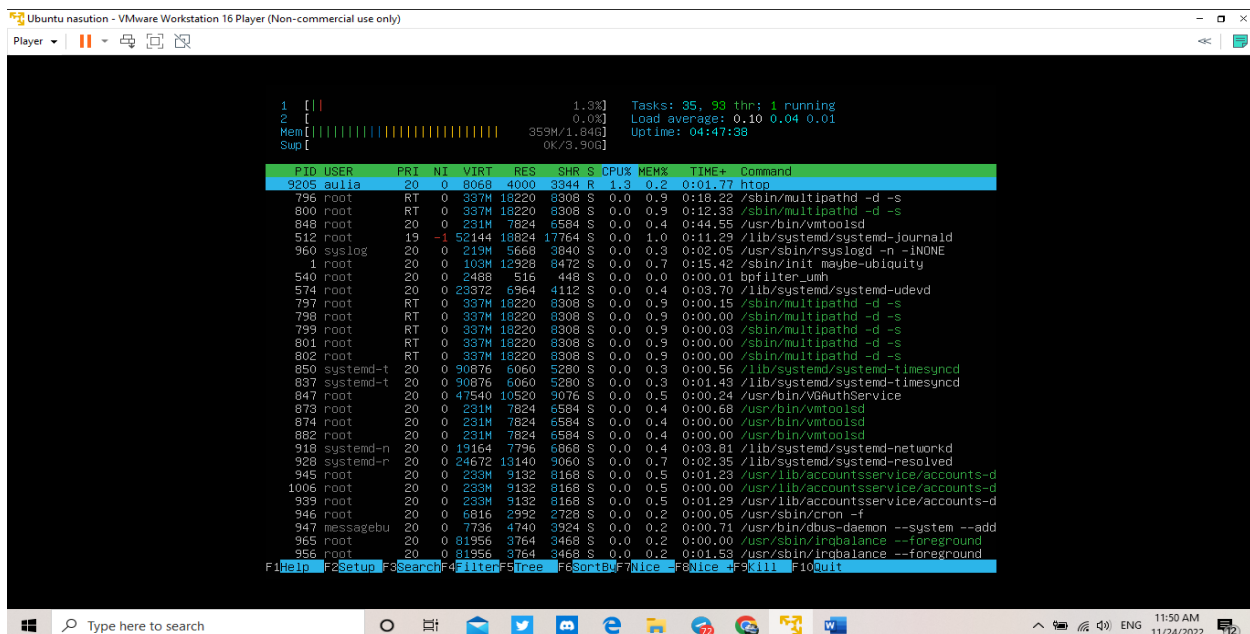
Yaitu dengan menggunakan perintah sed



```
aulia@rahman:~/aulia$ cat file2
HELLO DUMBWAYS
aulia@rahman:~/aulia$ sed -i 's/DUMBWAYS/BOOTCAMP/g' file2
aulia@rahman:~/aulia$ cat file2
HELLO BOOTCAMP
aulia@rahman:~/aulia$
```

5. Contoh penggunaan aplikasi monitoring

Ada beberapa tools yang biasa digunakan dalam monitoring yaitu htop dan nmon, berikut contoh dari htop



```
1  [ ] 1.3% Tasks: 85, 93 thr: 1 running
2  [ ] 0.0% Load average: 0.10 0.04 0.01
Mem [|||||] 359M/1.84G Uptime: 04:47:38
Swap [ ] 0K/3.90G

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
9205 aulia 20 0 3068 4000 3344 R 1.3 0.2 0:01.77 htop
796 root 20 0 337M 18220 8308 S 0.0 0.9 0:18.22 /sbin/multipathd -d -s
800 root 20 0 337M 18220 8308 S 0.0 0.9 0:12.33 /sbin/multipathd -d -s
848 root 20 0 231M 7824 6584 S 0.0 0.4 0:44.55 /usr/bin/vmtoolsd
512 root 19 -1 52144 18824 17764 S 0.0 1.0 0:11.29 /lib/systemd/systemd-journald
960 syslog 20 0 219M 5668 3840 S 0.0 0.3 0:02.05 /usr/sbin/rsyslogd -n -iNONE
1 root 20 0 103M 12928 8472 S 0.0 0.7 0:15.42 /sbin/init maybe-ubiquity
540 root 20 0 2488 516 448 S 0.0 0.0 0:00.01 bpfilter_lump
574 root 20 0 23372 6964 4112 S 0.0 0.4 0:03.70 /lib/systemd/systemd-udevd
797 root 20 0 337M 18220 8308 S 0.0 0.9 0:00.15 /sbin/multipathd -d -s
798 root 20 0 337M 18220 8308 S 0.0 0.9 0:00.00 /sbin/multipathd -d -s
799 root 20 0 337M 18220 8308 S 0.0 0.9 0:00.03 /sbin/multipathd -d -s
801 root 20 0 337M 18220 8308 S 0.0 0.9 0:00.00 /sbin/multipathd -d -s
802 root 20 0 337M 18220 8308 S 0.0 0.9 0:00.00 /sbin/multipathd -d -s
850 systemd-t 20 0 90876 6060 5280 S 0.0 0.3 0:00.56 /lib/systemd/systemd-timesyncd
837 systemd-t 20 0 90876 6060 5280 S 0.0 0.3 0:01.43 /lib/systemd/systemd-timesyncd
847 root 20 0 47540 10520 9076 S 0.0 0.5 0:00.24 /usr/bin/VGAAuthService
873 root 20 0 231M 7824 6584 S 0.0 0.4 0:00.68 /usr/bin/vmtoolsd
874 root 20 0 231M 7824 6584 S 0.0 0.4 0:00.00 /usr/bin/vmtoolsd
882 root 20 0 231M 7824 6584 S 0.0 0.4 0:00.00 /usr/bin/vmtoolsd
918 systemd-n 20 0 19164 7796 6868 S 0.0 0.4 0:03.81 /lib/systemd/systemd-networkd
928 systemd-n 20 0 24672 13140 9060 S 0.0 0.7 0:02.35 /lib/systemd/systemd-resolved
945 root 20 0 233M 9132 8168 S 0.0 0.5 0:01.23 /usr/lib/AccountsService/accounts-d
1006 root 20 0 233M 9132 8168 S 0.0 0.5 0:00.00 /usr/lib/AccountsService/accounts-d
939 root 20 0 233M 9132 8168 S 0.0 0.5 0:01.29 /usr/lib/AccountsService/accounts-d
946 root 20 0 6816 2992 2728 S 0.0 0.2 0:00.05 /usr/sbin/cron -f
947 messagebu 20 0 7736 4740 3924 S 0.0 0.2 0:00.71 /usr/bin/dbus-daemon --system --add
965 root 20 0 81956 3764 3468 S 0.0 0.2 0:00.00 /usr/sbin/irqbalance --foreground
956 root 20 0 81956 3764 3468 S 0.0 0.2 0:01.53 /usr/sbin/irqbalance --foreground
```


CPU : akan memberikan informasi mengenai berapa persen (%) jumlah CPU yang dipakai dalam server ubuntu kita.

Mem : akan memberikan informasi mengenai berapa jumlah Memory yang terpakai dalam server ubuntu kita.

Swp : akan memberikan informasi mengenai cadangan Memory yang terpakai dalam server ubuntu kita.

Tasks : akan memberikan informasi mengenai jumlah aplikasi yang berjalan dalam server ubuntu kita.

Load average : akan memberikan informasi mengenai rata-rata aplikasi yang berjalan dalam server ubuntu kita.

Uptime : akan memberikan informasi mengenai berapa lama server ubuntu kita hidup.

PID : proses id dari proses yang berjalan di server ubuntu kita.

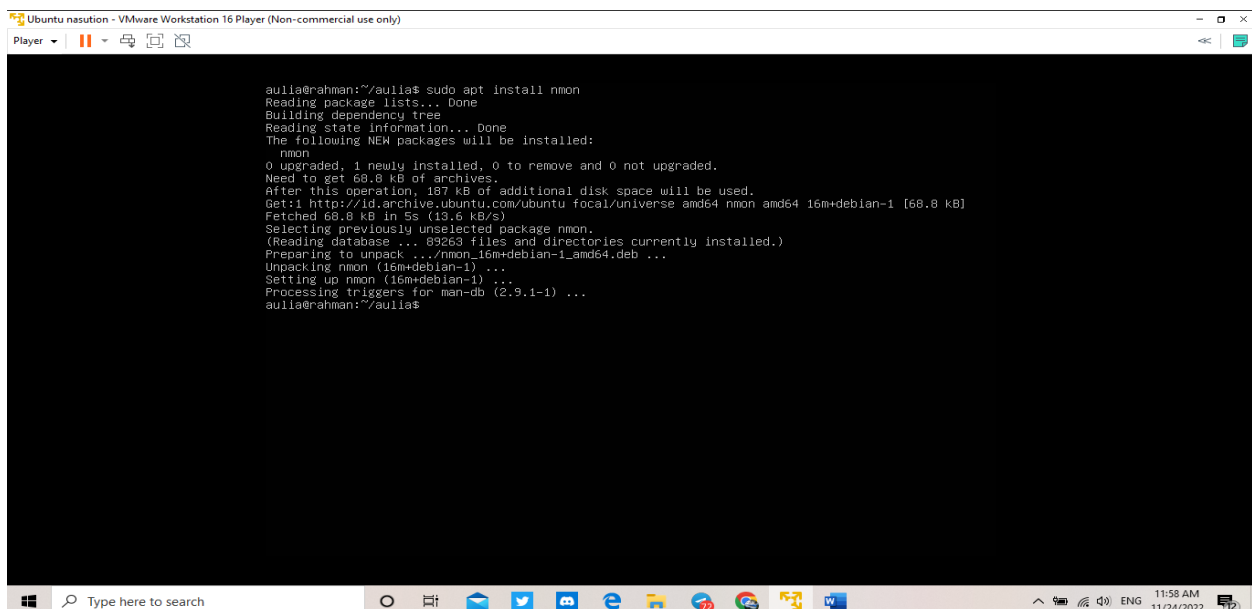
User : akan memberikan informasi mengenai user yang menjalankan aplikasi yang berjalan di server ubuntu kita.

VIRT : akan memberikan informasi mengenai jumlah memory yang terpakai di server ubuntu kita.

Command : akan memberikan informasi mengenai perintah yang sedang dijalankan.

Selanjutnya saya akan mendemonstrasikan monitoring menggunakan aplikasi nmon. Pertama install terlebih dahulu aplikasi nmon.

Selanjutnya menggunakan nmon



```
aulia@rahman:~/aulia$ sudo apt install nmon
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
nmon
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 68.8 kB of archives.
After this operation, 197 kB of additional disk space will be used.
Get:1 http://id.archive.ubuntu.com/ubuntu/focal/universe amd64 nmon amd64 16m+debian-1 [68.8 kB]
Fetched 68.8 kB in 5s (13.6 kB/s)
Selecting previously unselected package nmon.
(Reading database ... 89263 files and directories currently installed.)
Preparing to unpack .../nmon_16m+debian-1_amd64.deb ...
Unpacking nmon (16m+debian-1) ...
Setting up nmon (16m+debian-1) ...
Processing triggers for man-db (2.9.1-1) ...
aulia@rahman:~/aulia$
```

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons] | [Window Controls]

nmmon-16k Hostname=rahman Refresh= 2secs 05:01:39

```

-----
nmon-16k
-----
For help type H or ...
nmon -? - hint
nmon -h - full details

To stop nmon type q to Quit

Use these keys to toggle statistics on/off:
c = CPU          l = CPU Long-term      - = Faster screen updates
C = " Wideview  U = Utilisation  + = Slower screen updates
m = Memory       V = Virtual memory  j = File Systems
d = Disks        n = Network        . = only busy disks/procs
r = Resource     N = NFS             h = more options
k = Kernel       t = Top-processes   q = Quit
  
```

Windows Taskbar: Type here to search | [Icons] | 12:01 PM 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-shared) (256 MB)

Player ▾ | [Icons] | [Close]

```

nmon-16k [H for help] Hostname=rahman Refresh= 2secs 05:04:26
HELP: Hit h to remove this info Hit q to Quit
Letters which toggle on/off statistics:
h = This help
c = CPU Util C = wide view r = Resources OS & Proc
m = Memory & Swap L=Huge V = Virtual Memory
n = Network N = NFS
d = Disk I/O Graphs D=Stats o = Disks %Busy Map
k = Kernel stats & loadavg j = Filesystem Usage J=reduced
M = MHz by thread & CPU
t = TopProcess 1=Priority/Nice/State u = TopProc with command line
    ReOrder by: 3=CPU 4=RAM 5=I/O Hit u twice to update
g = User Defined Disk Groups G = with -g switches Disk graphs
    [start nmon with -g <filename>] b = black & white mode

Other Controls:
+ = double the screen refresh time o = reset peak marks ('s') to zero
- = half the screen refresh time space refresh screen now
. = Display only busy disks & CPU q = Quit

(C) Copyright 2009 Nigel Griffiths | See http://nmon.sourceforge.net
Colour: #0# #1# #2# #3# #4# #5# #6# #7# #8# #9# #10# #11# #12#
CPU Utilisation
-----+-----+-----+-----+
CPU User% Ss% Wait% Idle|0 |25 |50 |75 |100|
1 0.0 0.0 0.0 100.0|>
2 0.0 0.0 0.0 100.0|>
-----+-----+-----+-----+
Avg 0.0 0.0 0.0 100.0|>
-----+-----+-----+-----+

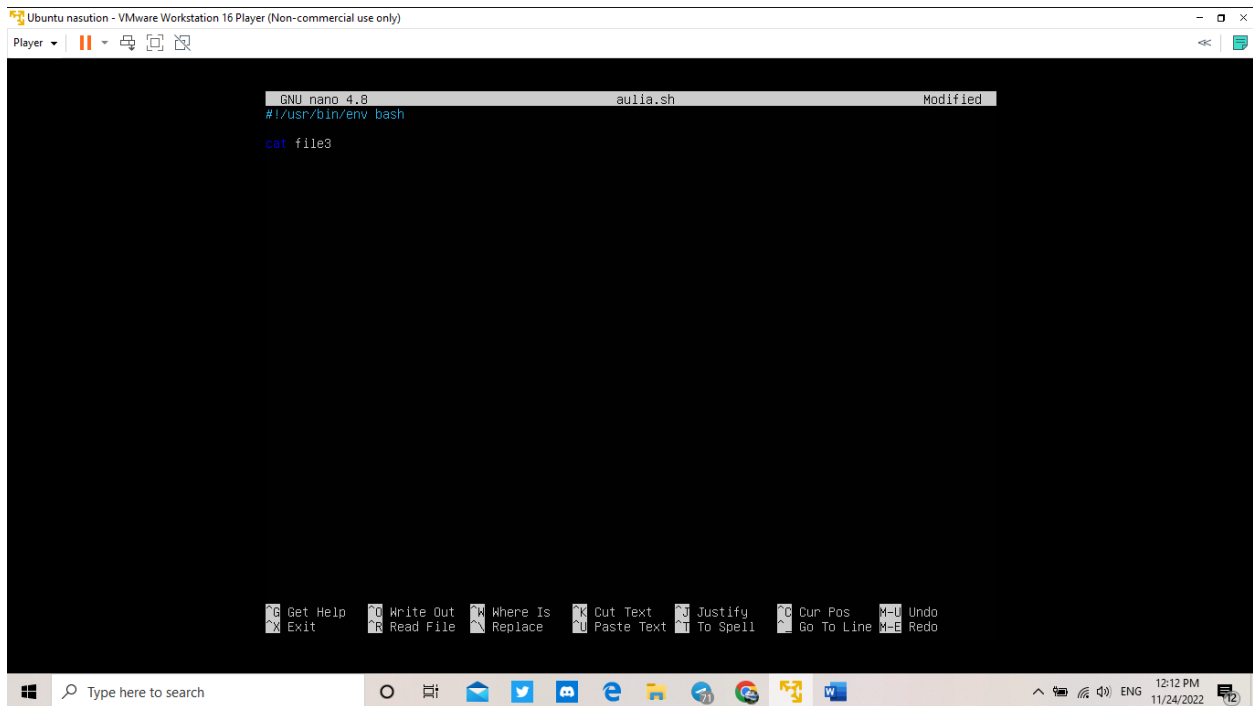
Memory and Swap
-----+-----+-----+-----+
PageSize:4KB RAM-Memory Swap-Space High-Memory Low-Memory
Total (MB) 1888.1 3995.0 - not in use - not in use
Free (MB) 728.2 3995.0
Free Percent 38.6% 100.0%
Linux Kernel Internal Memory (MB)
Warning: Some Statistics may not shown
  
```

Windows taskbar: Type here to search, [Icons], 12:04 PM 11/24/2022

Challenge no 4

Tugas no. 4 dibuat dalam bentuk script BASH

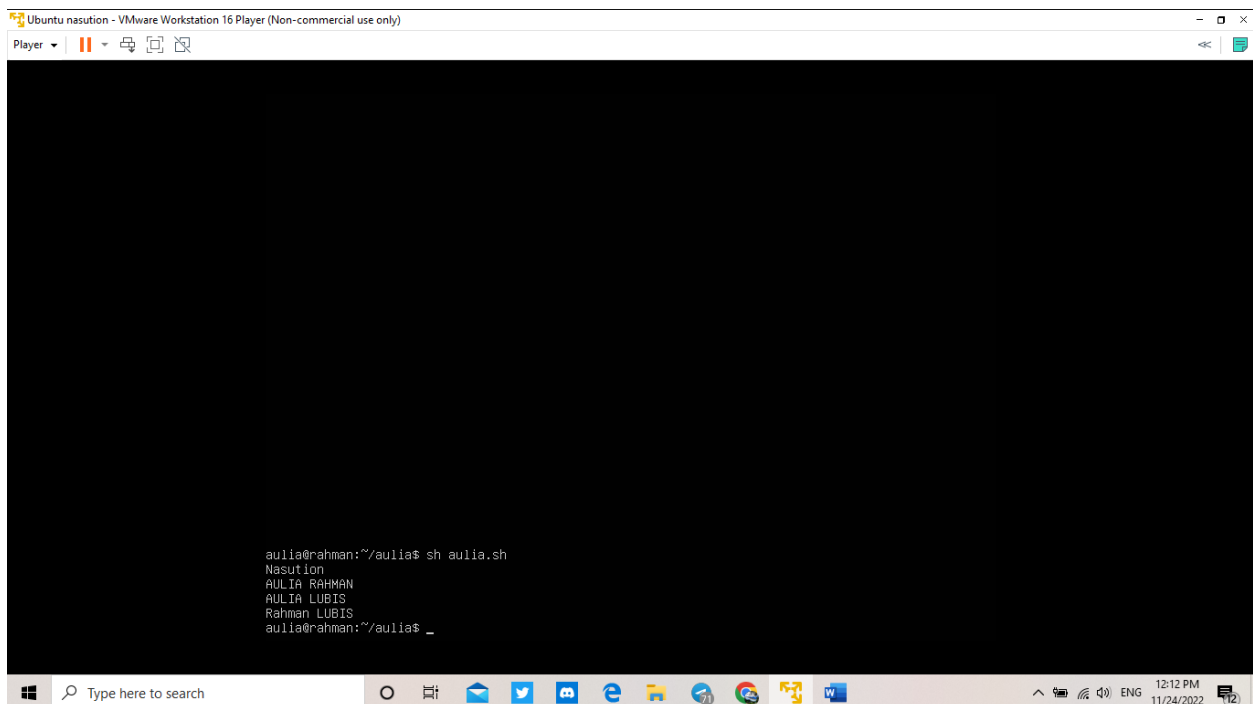
Bash scripting adalah pemrograman kumpulan perintah menggunakan script yang ditulis ke dalam bash shell, sehingga nantinya dapat dieksekusi oleh sistem operasi.



The screenshot shows a terminal window titled "Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)". Inside the terminal, the nano editor is open, editing a file named "aulia.sh". The editor's status bar at the top indicates "GNU nano 4.8", the filename "aulia.sh", and "Modified". The content of the file is as follows:

```
#!/usr/bin/env bash  
  
cat file3
```

The nano editor's menu bar is visible at the bottom of the terminal window, listing various actions like "Get Help", "Exit", "Write Out", "Read File", "Where Is", "Replace", "Cut Text", "Paste Text", "Justify", "To Spell", "Cur Pos", "Go To Line", "M-U", "Undo", "M-E", and "Redo". The Windows taskbar is visible at the very bottom of the image.



The screenshot shows a terminal window titled "Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)". The terminal displays the execution of the script "aulia.sh" from the user's home directory. The output of the script is as follows:

```
aulia@rahman:~/aulia$ sh aulia.sh  
Nasution  
AULIA RAHMAN  
AULIA LUBIS  
Rahman LUBIS  
aulia@rahman:~/aulia$ _
```

The Windows taskbar is visible at the bottom of the image.

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

```
Player ▾ || 🔍 🖨 🗑
```

```
aulia@rahman:~/aulia$ sh aulia.sh
Nasution
AULIA RAHMAN
AULIA LUBIS
Rahman LUBIS
aulia@rahman:~/aulia$ cat file3
Nasution
AULIA RAHMAN
AULIA LUBIS
Rahman LUBIS
aulia@rahman:~/aulia$
```

🪟 🔍 Type here to search 🔌 🖨 🗑 📧 🐦 🗨 🌐 📁 🔄 🌐 🔄 🔄 🔄 🔄 12:14 PM 11/24/2022 🗨

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

```
Player ▾ || 🔍 🖨 🗑
```

```
GNU nano 4.8 aulia.sh
#!/usr/bin/env bash
grep AULIA file3
```

```
aulia@rahman:~/aulia$
```

🪟 🔍 Type here to search 🔌 🖨 🗑 📧 🐦 🗨 🌐 📁 🔄 🌐 🔄 🔄 🔄 🔄 1:11 PM 11/24/2022 🗨

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons] [Close]

```
aulia@rahman:~/aulia$ sh aulia.sh
AULIA RAHMAN
AULIA LUBIS
aulia@rahman:~/aulia$ ca aulia.sh
ca: command not found
aulia@rahman:~/aulia$ cat aulia.sh
#!/usr/bin/env bash

grep AULIA file3
aulia@rahman:~/aulia$
```

Windows taskbar: Type here to search, [Icons], ENG, 1:14 PM, 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons] [Close]

```
GNU nano 4.8 aulia.sh
#!/usr/bin/env bash

echo "saya ada di file3" > file3

aulia@rahman:~/aulia$ sh aulia
```

Windows taskbar: Type here to search, [Icons], ENG, 1:18 PM, 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons] [Close]

```
aulia@rahman:~/aulia$ sh aulia.sh
aulia@rahman:~/aulia$ cat aulia.sh
#!/usr/bin/env bash

echo "saya ada di file3" > file3
aulia@rahman:~/aulia$ cat file3
saya ada di file3
aulia@rahman:~/aulia$ _
```

Windows taskbar: Type here to search, [Icons], ENG, 1:19 PM, 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons] [Close]

```
GNU nano 4.8 aulia.sh
#!/usr/bin/env bash

sort file1
sort -r file1

aulia@rahman:~/aulia$ _
```

Windows taskbar: Type here to search, [Icons], ENG, 1:22 PM, 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons]

```
aulia@rahman:~/aulia$ cat file1
1
9
6
8
2
4
3
5
7
aulia@rahman:~/aulia$ sh aulia.sh
1
2
3
4
5
6
7
8
9
9
8
7
6
5
4
3
2
1
aulia@rahman:~/aulia$ _
```

Windows taskbar: Type here to search, [Icons], 1:23 PM 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

Player ▾ | [Icons]

```
aulia@rahman:~/aulia$ cat file2
hello dumbuays
aulia@rahman:~/aulia$
```

Windows taskbar: Type here to search, [Icons], 1:26 PM 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

```
GNU nano 4.8 aulia.sh
#!/usr/bin/env bash

sed -i 's/dumbuays/bootcamp/g' file2
```

aulia@rahman:~/aulia\$ _

Type here to search

1:27 PM 11/24/2022

Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)

```
aulia@rahman:~/aulia$ sh aulia.sh
aulia@rahman:~/aulia$ cat aulia.sh
#!/usr/bin/env bash

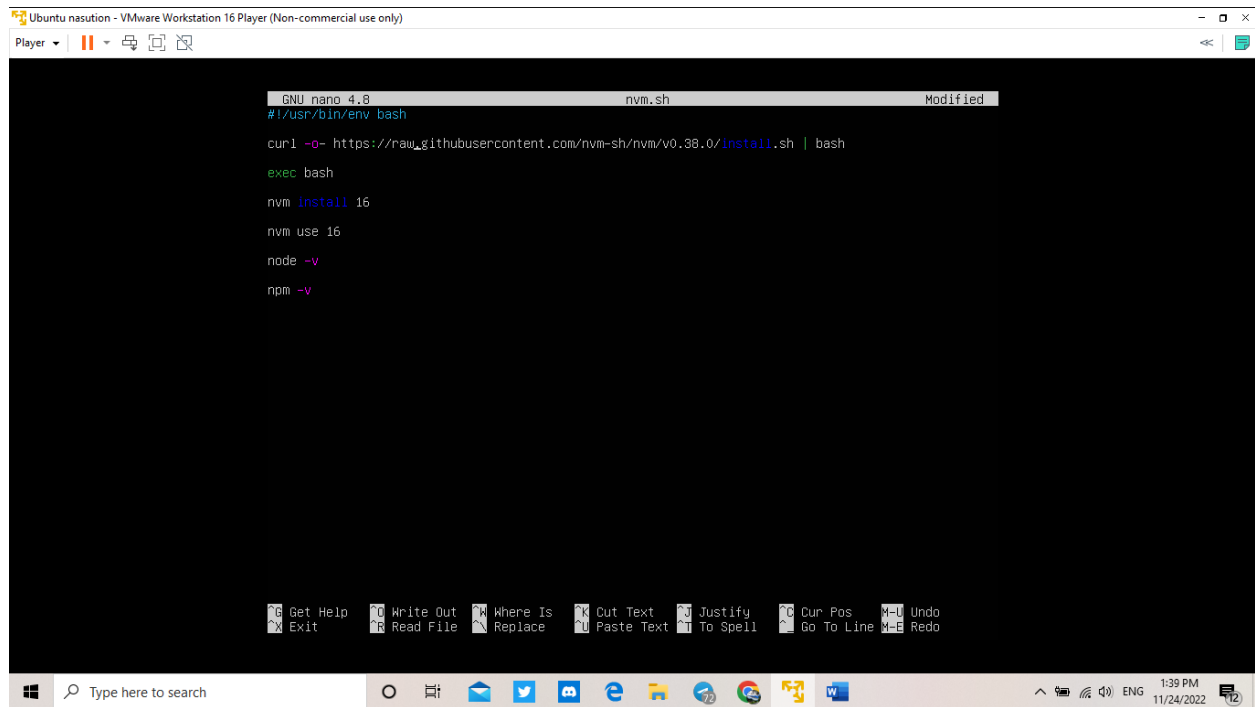
sed -i 's/dumbuays/bootcamp/g' file2

aulia@rahman:~/aulia$ cat file2
hello bootcamp
aulia@rahman:~/aulia$
```

Type here to search

1:28 PM 11/24/2022

Buat script instalasi node version manager menggunakan BASH



The screenshot shows a VMware Workstation 16 Player window titled "Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)". Inside the player, a terminal window is open, displaying a nano editor editing a file named "nvm.sh". The script content is as follows:

```
GNU nano 4.8 nvm.sh Modified
#!/usr/bin/env bash

curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.38.0/install.sh | bash

exec bash

nvm install 16

nvm use 16

node -v

npm -v
```

Below the terminal window, a menu bar for the nano editor is visible, containing options like "Get Help", "Exit", "Write Out", "Read File", "Where Is", "Replace", "Cut Text", "Paste Text", "Justify", "To Spell", "Cur. Pos.", "Go To Line", "M-L", "Undo", "M-E", and "Redo". At the bottom of the screen, the Windows taskbar is visible, showing the search bar, taskbar icons, and system tray with the time "1:39 PM" and date "11/24/2022".

```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ sh nvm.sh
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
   Dload  Upload  Total    Dload  Upload  Total   Spent    Left     Speed

100 14926  100 14926    0     0 20115      0  --:--:-- --:--:-- --:--:-- 20088
=> nvm is already installed in /home/aulia/.nvm, trying to update using git
=> => Compressing and cleaning up git repository

=> nvm source string already in /home/aulia/.bashrc
=> bash_completion source string already in /home/aulia/.bashrc
=> Close and reopen your terminal to start using nvm or run the following to use it now:

export NVM_DIR="$HOME/.nvm"
[ -s "$NVM_DIR/nvm.sh" ] && \. "$NVM_DIR/nvm.sh" # This loads nvm
[ -s "$NVM_DIR/bash_completion" ] && \. "$NVM_DIR/bash_completion" # This loads nvm bash_completion
aulia@rahman:~/aulia$
```

```
Ubuntu nasution - VMware Workstation 16 Player (Non-commercial use only)
Player
aulia@rahman:~/aulia$ node -v
v14.21.1
aulia@rahman:~/aulia$ npm -v
6.14.17
aulia@rahman:~/aulia$ _
```