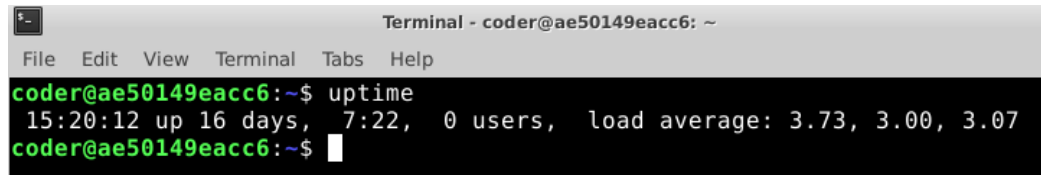


## Quesrion 4.

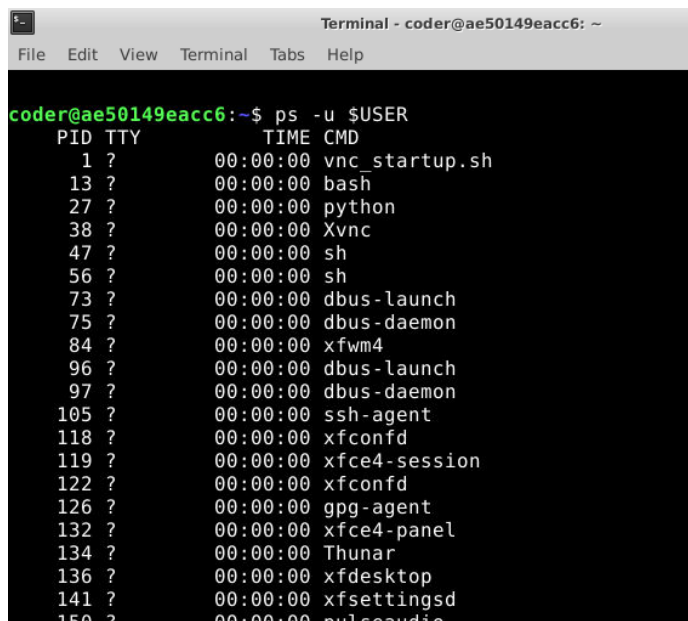
1. Command: uptime



```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ uptime
15:20:12 up 16 days,  7:22,  0 users,  load average: 3.73, 3.00, 3.07
coder@ae50149eacc6:~$
```

Explanation: Shows how long the system has been running since last boot, current time, number of logged-in users, and load averages (lower = less busy).

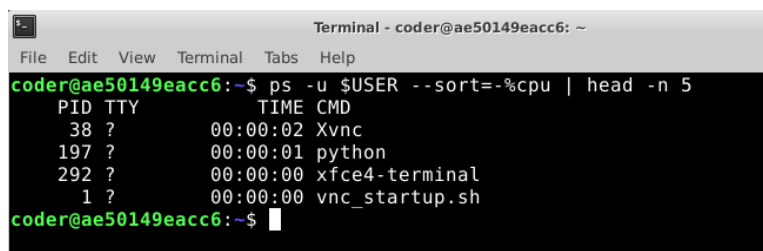
2. Command: ps -u \$USER



```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ ps -u $USER
  PID TTY          TIME CMD
    1 ?            00:00:00 vnc_startup.sh
   13 ?            00:00:00 bash
   27 ?            00:00:00 python
   38 ?            00:00:00 Xvnc
   47 ?            00:00:00 sh
   56 ?            00:00:00 sh
   73 ?            00:00:00 dbus-launch
   75 ?            00:00:00 dbus-daemon
   84 ?            00:00:00 xfwm4
   96 ?            00:00:00 dbus-launch
   97 ?            00:00:00 dbus-daemon
  105 ?            00:00:00 ssh-agent
  118 ?            00:00:00 xfconfd
  119 ?            00:00:00 xfce4-session
  122 ?            00:00:00 xfconfd
  126 ?            00:00:00 gpg-agent
  132 ?            00:00:00 xfce4-panel
  134 ?            00:00:00 Thunar
  136 ?            00:00:00 xfdesktop
  141 ?            00:00:00 xfsettingsd
  150 ?            00:00:00 pulseaudio
```

Explanation: Lists every process owned by your user, showing PID, terminal, cumulative CPU time, and command name.

3. Command: ps -u \$USER --sort=-%cpu | head -n 5

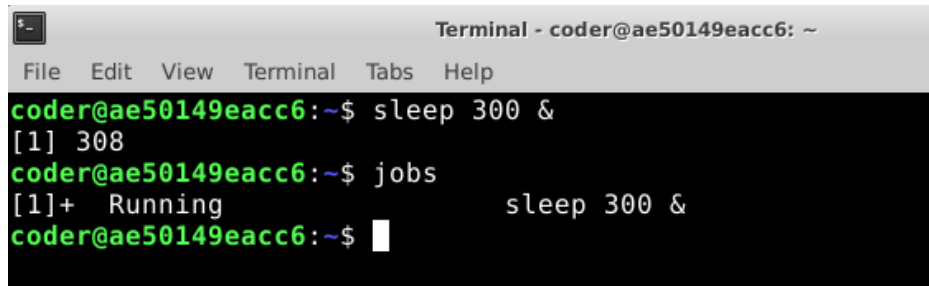


```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ ps -u $USER --sort=-%cpu | head -n 5
  PID TTY          TIME CMD
   38 ?            00:00:02 Xvnc
  197 ?            00:00:01 python
  292 ?            00:00:00 xfce4-terminal
    1 ?            00:00:00 vnc_startup.sh
coder@ae50149eacc6:~$
```

Explanation: Sorts your processes by current CPU usage (highest first). The top process is currently using the most CPU among your processes.

4. Command: `sleep 600 &`, `jobs`

Output: `[1]+ Running sleep 300 &`

A terminal window titled "Terminal - coder@ae50149eacc6: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
coder@ae50149eacc6:~$ sleep 300 &
[1] 308
coder@ae50149eacc6:~$ jobs
[1]+  Running                  sleep 300 &
coder@ae50149eacc6:~$
```

Explanation: The `&` starts `sleep 300` in the background. `jobs` confirms it is running as a background job controlled by your shell.

5. Command: `echo $$`

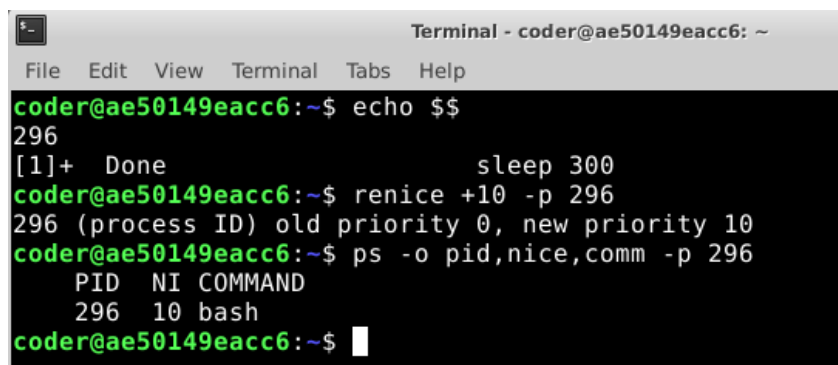
Output: `296`

Change-Command: `renice +10 -p 296`

Verify: `ps -o pid,nice,comm -p 296`

Output: `PID NI COMMAND`

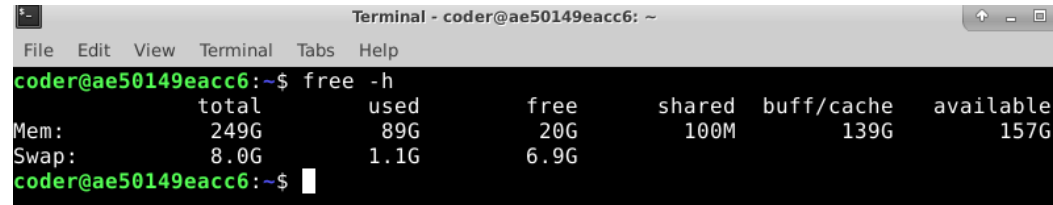
`296 10 bash`

A terminal window titled "Terminal - coder@ae50149eacc6: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
coder@ae50149eacc6:~$ echo $$
296
[1]+  Done                  sleep 300
coder@ae50149eacc6:~$ renice +10 -p 296
296 (process ID) old priority 0, new priority 10
coder@ae50149eacc6:~$ ps -o pid,nice,comm -p 296
  PID  NI COMMAND
   296   10 bash
coder@ae50149eacc6:~$
```

Explanation: `renice +10` lowers the priority of your shell (makes it "nicer"). `NI` (niceness) changes from default 0 to 10, allowing other processes more CPU time.

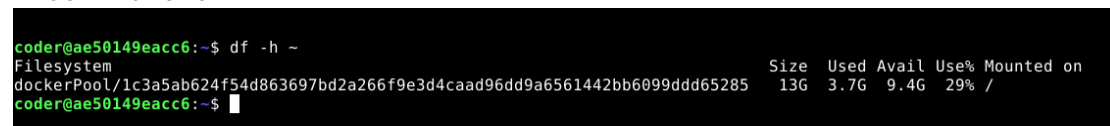
6. Command: `free -h`



```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:           249G        89G         20G        100M        139G        157G
Swap:           8.0G         1.1G         6.9G
```

Explanation: Displays total, used, free, and available RAM + swap in human-readable units (GiB/MiB). "available" is the most useful real free memory value.

7. Command: `df -h ~`

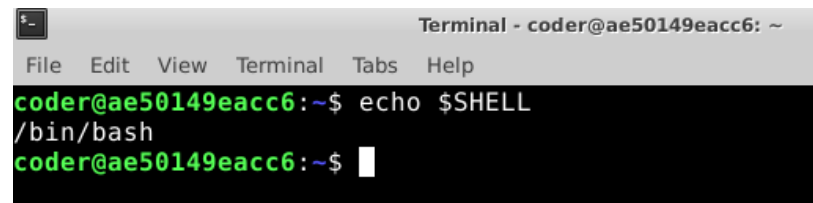


```
coder@ae50149eacc6:~$ df -h ~
Filesystem                                Size  Used Avail Use% Mounted on
dockerPool/1c3a5ab624f54d863697bd2a266f9e3d4caad96dd9a6561442bb6099ddd65285 13G   3.7G   9.4G   29% /
```

Explanation: Shows disk space on the filesystem containing your home directory (~). Human-readable sizes, percentage used, and available space.

8. Command: `echo $SHELL`

Output: `/bin/bash`

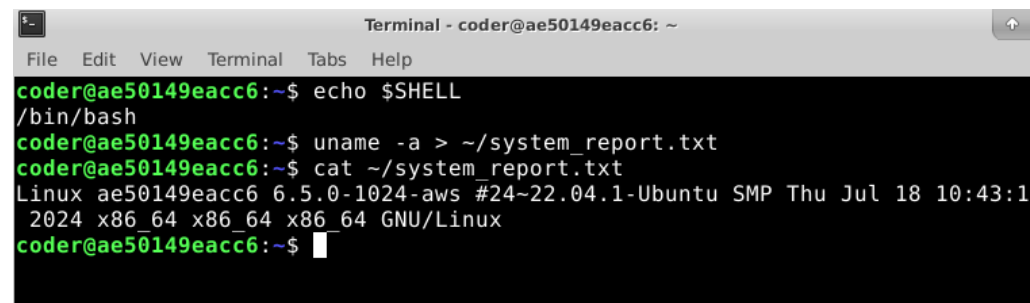


```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ echo $SHELL
/bin/bash
coder@ae50149eacc6:~$
```

Explanation: Displays the full path of your current login shell.

9. Command: `uname -a > ~/system_report.txt`

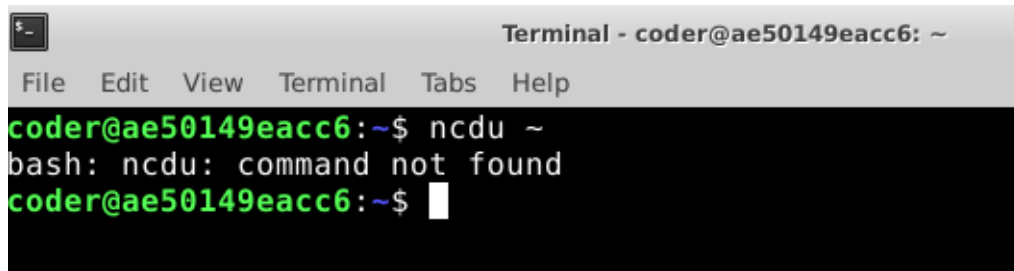
Verify: `cat ~/system_report.txt`



```
Terminal - coder@ae50149eacc6: ~
File Edit View Terminal Tabs Help
coder@ae50149eacc6:~$ echo $SHELL
/bin/bash
coder@ae50149eacc6:~$ uname -a > ~/system_report.txt
coder@ae50149eacc6:~$ cat ~/system_report.txt
Linux ae50149eacc6 6.5.0-1024-aws #24~22.04.1-Ubuntu SMP Thu Jul 18 10:43:12
2024 x86_64 x86_64 x86_64 GNU/Linux
coder@ae50149eacc6:~$
```

Explanation: `uname -a` prints full system info; `>` redirects it into `system_report.txt` in your home directory.

10. Command: `ncdu ~`

A terminal window titled "Terminal - coder@ae50149eacc6: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command `ncdu ~` being entered, followed by the error message `bash: ncdu: command not found`. The prompt `coder@ae50149eacc6:~$` is visible at the end of the line.

```
coder@ae50149eacc6:~$ ncdu ~
bash: ncdu: command not found
coder@ae50149eacc6:~$
```

It: Launches an interactive, full-screen disk usage browser starting from your home directory.

Explanation: Many minimal systems do not have `ncdu` installed by default. In that case, simply report the error and note that `ncdu` is an excellent interactive disk usage analyzer when available.