Question 4 Answers

1.

```
coder@a446fe60c45e:~$ uptime
 23:21:54 up 27 days,  6:19,  0 users,  load average: 3.34, 2.37, 2.45
```

The uptime command displays how long the system has been up since the last reboot.

2.

```
coder@a446fe60c45e:~$ 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 ?        00:00:15 Xvnc
   50 ?        00:00:00 sh
   59 ?        00:00:00 sh
   77 ?        00:00:00 dbus-launch
   78 ?        00:00:00 dbus-daemon
   87 ?        00:00:00 xfwm4
   99 ?        00:00:00 dbus-launch
  100 ?        00:00:00 dbus-daemon
  108 ?        00:00:00 ssh-agent
  121 ?        00:00:00 xfconfd
  122 ?        00:00:00 xfce4-session
  125 ?        00:00:00 xfconfd
  129 ?        00:00:00 gpg-agent
  135 ?        00:00:00 xfce4-panel
  137 ?        00:00:00 Thunar
  139 ?        00:00:00 xfdesktop
  142 ?        00:00:00 xfsettingsd
  153 ?        00:00:00 pulseaudio
  155 ?        00:00:00 gvfsd
  177 ?        00:00:00 panel-2-actions
  184 ?        00:00:00 gvfs-udisks2-vo
  191 ?        00:00:00 gvfsd-metadata
  195 ?        00:00:00 gvfsd-trash
  248 ?        00:00:00 at-spi-bus-laun
  253 ?        00:00:00 dbus-daemon
  255 ?        00:00:00 at-spi2-registr
  404 ?        00:00:00 python
  410 ?        00:00:00 xfce4-terminal
  414 pts/0    00:00:00 bash
  424 pts/0    00:00:00 ps
```

This command is used to list all the currently running processes under current user.

3.

```
coder@a446fe60c45e:~$ ps -u $USER --sort=-%cpu
    PID TTY          TIME CMD
     38 ?        00:00:15 Xvnc
    410 ?        00:00:00 xfce4-terminal
      1 ?        00:00:00 vnc_startup.sh
     13 ?        00:00:00 bash
     27 ?        00:00:00 python
     50 ?        00:00:00 sh
     59 ?        00:00:00 sh
     77 ?        00:00:00 dbus-launch
     78 ?        00:00:00 dbus-daemon
     87 ?        00:00:00 xfwm4
     99 ?        00:00:00 dbus-launch
    100 ?        00:00:00 dbus-daemon
    108 ?        00:00:00 ssh-agent
    121 ?        00:00:00 xfconfd
    122 ?        00:00:00 xfce4-session
    125 ?        00:00:00 xfconfd
    129 ?        00:00:00 gpg-agent
    135 ?        00:00:00 xfce4-panel
    137 ?        00:00:00 Thunar
    139 ?        00:00:00 xfdesktop
    142 ?        00:00:00 xfsettingsd
    153 ?        00:00:00 pulseaudio
    155 ?        00:00:00 gvfsd
    177 ?        00:00:00 panel-2-actions
    184 ?        00:00:00 gvfs-udisks2-vo
    191 ?        00:00:00 gvfsd-metadata
    195 ?        00:00:00 gvfsd-trash
    248 ?        00:00:00 at-spi-bus-laun
    253 ?        00:00:00 dbus-daemon
    255 ?        00:00:00 at-spi2-registr
    404 ?        00:00:00 python
    414 pts/0    00:00:00 bash
    425 pts/0    00:00:00 ps
```

This command is used to check which process is using the maximum CPU among all the currently running processes.

4.

```
coder@a446fe60c45e:~$ sleep 300 &
[1] 426
coder@a446fe60c45e:~$ jobs
[1]+  Running                 sleep 300 &
```

We used the sleep command to start the process in the background. And then used the jobs command to confirm whether the process is running or not.

5.

```
coder@a446fe60c45e:~$ renice 10 -p 426
426 (process ID) old priority 0, new priority 10
coder@a446fe60c45e:~$ ps -o pid,ni,cmd -p 426
    PID  NI CMD
    426  10 sleep 300
```

This command is used to change the niceness of a process that is currently running.

Then we used the second command to confirm the update.

6.

```
coder@a446fe60c45e:~$ free -h
               total        used        free      shared  buff/cache   available
Mem:            249G        132G         42G         86M         74G         114G
Swap:           8.0G        9.5M        8.0G
```

This command is used to show memory usage in a human readable format.

7.

```
coder@a446fe60c45e:~$ df -h ~
Filesystem                                                                  Siz
e   Used Avail Use% Mounted on
dockerPool/b5e3bcbe1e04c7d34e4b2e717ea44c159826557c0c7752c0ffcdae657d734808    13
G   3.7G  9.4G  29% /
```

This command is used to show disk usage of filesystem in human readable format.

8.

```
coder@a446fe60c45e:~$ echo $SHELL
/bin/bash
```

The echo command can be used to display the name and path of shell currently in use.

9.

```
coder@a446fe60c45e:~$ uname -a > system_report.txt
coder@a446fe60c45e:~$ cat system_report.txt
Linux a446fe60c45e 6.5.0-1024-aws #24~22.04.1-Ubuntu SMP Thu Jul 18 10:43:12 UTC
 2024 x86_64 x86_64 x86_64 GNU/Linux
```

We used the uname command to create a new file and redirect all system information output to it. We also used cat to verify data recording.

10.

```
coder@a446fe60c45e:~$ du -sh ~
8.9M    /home/coder
coder@a446fe60c45e:~$
```

Ncdu was not installed on my system. So I used du -sh command to display the largest directory on the system.