



FATIMA JINNAH WOMEN UNIVERSITY

Submitted To:

Engr. Muhammad Shoaib

Submitted By:

Irraj Samreen(027)

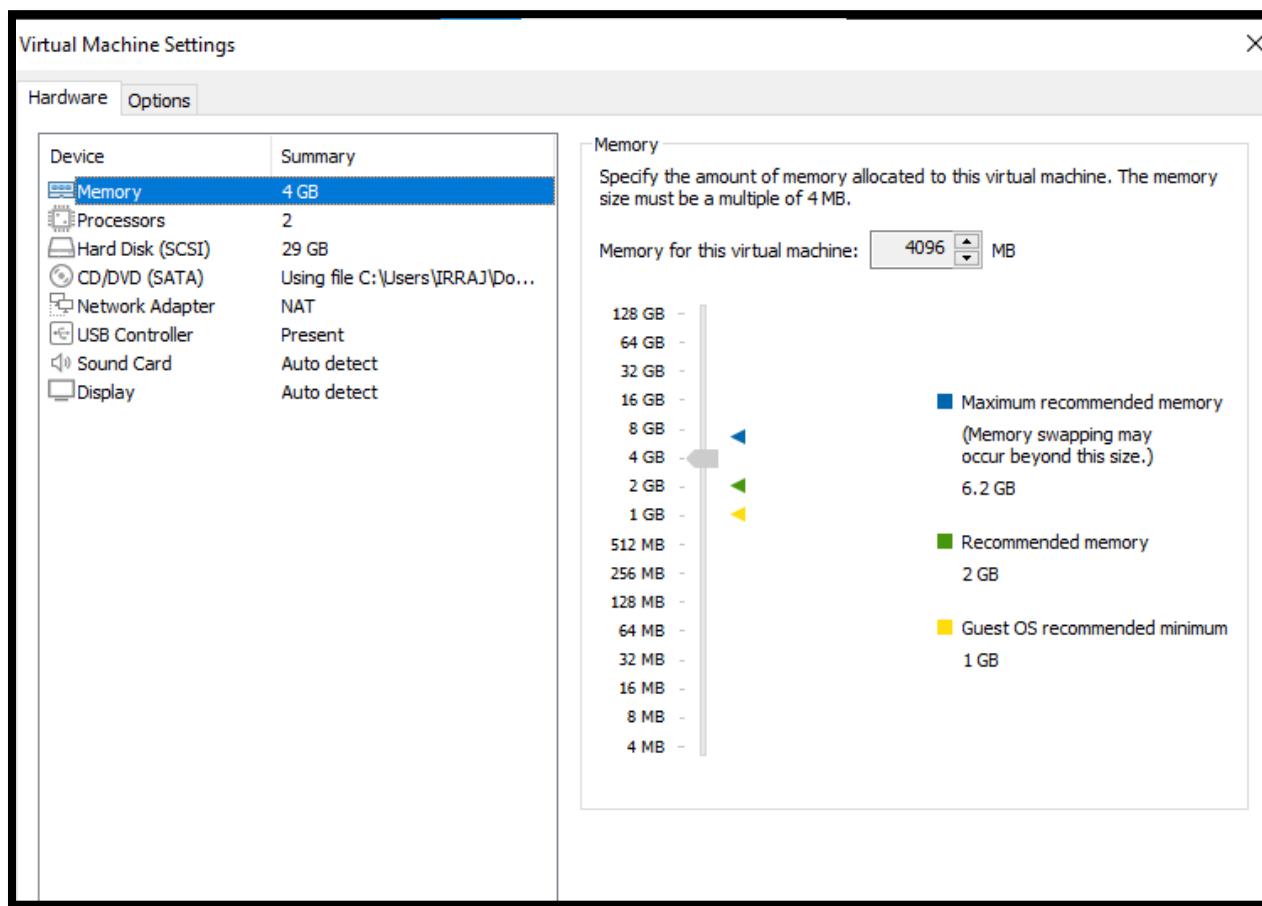
Section:

5A

CLOUD COMPUTING

LAB 04

TASK:01



TASK:02

```
C:\Users\IRRAJ>ssh ubuntu027@192.168.72.142
ubuntu027@192.168.72.142's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 5.15.0-119-generic x86_64)

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

System information as of Thu Oct 23 08:31:40 AM UTC 2025

 System load:  0.98           Processes:          245
 Usage of /:   48.9% of 13.18GB  Users logged in:    1
 Memory usage: 10%            IPv4 address for ens33: 192.168.72.142
 Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

175 updates can be applied immediately.
118 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
```

```
valid_lft forever preferred_lft
ubuntu027@ubuntu:~$ whoami
ubuntu027
ubuntu027@ubuntu:~$ pwd
/home/ubuntu027
ubuntu027@ubuntu:~$ _
```

TASK:03

```
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .XIM-unix
ubuntu027@ubuntu:~$ ls -la /
total 2768976
drwxr-xr-x  20 root root      4096 Oct  9 13:45 .
drwxr-xr-x  20 root root      4096 Oct  9 13:45 ..
lrwxrwxrwx   1 root root       7 Sep 11 2024 bin -> usr/bin
drwxr-xr-x   4 root root     4096 Oct 23 08:45 boot
dr-xr-xr-x   2 root root     4096 Sep 11 2024 cdrom
drwxr-xr-x  20 root root    4100 Oct 23 08:28 dev
drwxr-xr-x  96 root root    4096 Oct 23 08:57 etc
drwxr-xr-x   3 root root    4096 Oct  9 14:26 home
lrwxrwxrwx   1 root root       7 Sep 11 2024 lib -> usr/lib
lrwxrwxrwx   1 root root       9 Sep 11 2024 lib32 -> usr/lib32
lrwxrwxrwx   1 root root       9 Sep 11 2024 lib64 -> usr/lib64
lrwxrwxrwx   1 root root      10 Sep 11 2024 libx32 -> usr/libx32
drwx-----  2 root root   16384 Oct  9 13:39 lost+found
drwxr-xr-x   2 root root     4096 Sep 11 2024 media
drwxr-xr-x   2 root root     4096 Sep 11 2024 mnt
drwxr-xr-x   2 root root     4096 Sep 11 2024 opt
dr-xr-xr-x  276 root root      0 Oct 23 08:27 proc
drwx-----  4 root root     4096 Oct  9 14:26 root
drwxr-xr-x  31 root root    1000 Oct 23 08:51 run
lrwxrwxrwx   1 root root       8 Sep 11 2024 sbin -> usr/sbin
drwxr-xr-x   6 root root     4096 Sep 11 2024 snap
drwxr-xr-x   2 root root     4096 Sep 11 2024 srv
-rw-------  1 root root 2835349504 Oct  9 13:45 swap.img
dr-xr-xr-x  13 root root      0 Oct 23 08:27 sys
drwxrwxrwt  13 root root    4096 Oct 23 08:56 tmp
drwxr-xr-x  14 root root    4096 Sep 11 2024 usr
drwxr-xr-x  13 root root    4096 Sep 11 2024 var
ubuntu027@ubuntu:~$
```

```
drwxr-xr-x  13 root root     4096 Sep 11 2024 var
ubuntu027@ubuntu:~$ ls -la /bin
lrwxrwxrwx 1 root root  7 Sep 11 2024 /bin -> usr/bin
ubuntu027@ubuntu:~$ ls -la /sbin
lrwxrwxrwx 1 root root  8 Sep 11 2024 /sbin -> usr/sbin
ubuntu027@ubuntu:~$ ls -la /usr_
```

```
ubuntu027@ubuntu:~$ ls -la /usr
total 100
drwxr-xr-x 14 root root 4096 Sep 11 2024 .
drwxr-xr-x 20 root root 4096 Oct  9 13:45 ..
drwxr-xr-x  2 root root 36864 Oct 23 08:58 bin
drwxr-xr-x  2 root root 4096 Apr 18 2022 games
drwxr-xr-x  5 root root 4096 Oct 23 08:58 include
drwxr-xr-x 83 root root 4096 Oct 23 08:51 lib
drwxr-xr-x  2 root root 4096 Sep 11 2024 lib32
drwxr-xr-x  2 root root 4096 Sep 11 2024 lib64
drwxr-xr-x 10 root root 4096 Oct  9 13:44 libexec
drwxr-xr-x  2 root root 4096 Sep 11 2024 libx32
drwxr-xr-x 10 root root 4096 Sep 11 2024 local
drwxr-xr-x  2 root root 16384 Oct 23 08:58 sbin
drwxr-xr-x 111 root root 4096 Oct  9 13:47 share
drwxr-xr-x  6 root root 4096 Oct 23 08:41 src
ubuntu027@ubuntu:~$ _
```

```
ubuntu027@ubuntu:~$ ls -la /opt
total 8
drwxr-xr-x  2 root root 4096 Sep 11 2024 .
drwxr-xr-x 20 root root 4096 Oct  9 13:45 ..
ubuntu027@ubuntu:~$ _
```

```
drwxr-xr-x  4 root root 4096 Oct 23 08:51 ssh
drwxr-xr-x  4 root root 4096 Oct 23 08:57 ssl
-rw-r--r--  1 root root 23 Oct  9 14:26 subgid
-rw-r--r--  1 root root 0 Sep 11 2024 subgid-
-rw-r--r--  1 root root 23 Oct  9 14:26 subuid
-rw-r--r--  1 root root 0 Sep 11 2024 subuid-
-rw-r--r--  1 root root 4573 Apr  3 2023 sudo.conf
-r--r----- 1 root root 1671 Aug  3 2022 sudoers
drwxr-xr-x  2 root root 4096 Oct 23 08:58 sudoers.d
-rw-r--r--  1 root root 9390 Apr  3 2023 sudo_logsrvd.conf
-rw-r--r--  1 root root 2355 Feb 25 2022 sysctl.conf
drwxr-xr-x  2 root root 4096 Oct 23 08:48 sysctl.d
drwxr-xr-x  5 root root 4096 Oct 23 08:48 systemd
drwxr-xr-x  2 root root 4096 Sep 11 2024 terminfo
drwxr-xr-x  2 root root 4096 Oct  9 13:44 thermald
-rw-r--r--  1 root root 8 Sep 11 2024 timezone
drwxr-xr-x  2 root root 4096 Sep 11 2024 tmpfiles.d
drwxr-xr-x  2 root root 4096 Sep 11 2024 ubuntu-advantage
-rw-r--r--  1 root root 1260 Jun 16 2020 ucf.conf
drwxr-xr-x  4 root root 4096 Sep 11 2024 udev
drwxr-xr-x  2 root root 4096 Sep 11 2024 udisks2
drwxr-xr-x  3 root root 4096 Sep 11 2024 ufw
drwxr-xr-x  3 root root 4096 Sep 11 2024 update-manager
drwxr-xr-x  2 root root 4096 Sep 11 2024 update-motd.d
drwxr-xr-x  2 root root 4096 Mar  4 2024 update-notifier
drwxr-xr-x  2 root root 4096 Oct  9 13:44 UPower
-rw-r--r--  1 root root 1523 Mar 25 2022 usb_modeswitch.conf
drwxr-xr-x  2 root root 4096 Sep  6 2021 usb_modeswitch.d
drwxr-xr-x  2 root root 4096 Oct 23 08:52 vim
drwxr-xr-x  4 root root 4096 Sep 11 2024 vmware-tools
lrwxrwxrwx  1 root root 23 Sep 11 2024 vttrgb -> /etc/alternatives/vttrgb
-rw-r--r--  1 root root 4942 Jun 19 2024 wgetrc
drwxr-xr-x  4 root root 4096 Sep 11 2024 X11
-rw-r--r--  1 root root 681 Mar 23 2022 xattr.conf
drwxr-xr-x  4 root root 4096 Sep 11 2024 xdg
-rw-r--r--  1 root root 460 Dec  8 2021 zsh_command_not_found
ubuntu027@ubuntu:~$ _
```

```
crw----- 1 root      root   10, 249 Oct 2
ubuntu027@ubuntu:~$ ls -la /dev
```

drwxr-xr-x	2	root	root	60	Oct 23	08:28	ubuntu-vg
crw-rw----	1	root	kvm	10,	125 Oct 23	08:28	udmabuf
crw-----	1	root	root	10,	239 Oct 23	08:28	uhid
crw-----	1	root	root	10,	223 Oct 23	08:28	uinput
crw-rw-rw-	1	root	root	1,	9 Oct 23	08:28	urandom
crw-----	1	root	root	10,	240 Oct 23	08:28	userio
crw-rw----	1	root	tty	7,	0 Oct 23	08:28	vcs
crw-rw----	1	root	tty	7,	1 Oct 23	08:28	vcs1
crw-rw----	1	root	tty	7,	2 Oct 23	08:28	vcs2
crw-rw----	1	root	tty	7,	3 Oct 23	08:28	vcs3
crw-rw----	1	root	tty	7,	4 Oct 23	08:28	vcs4
crw-rw----	1	root	tty	7,	5 Oct 23	08:28	vcs5
crw-rw----	1	root	tty	7,	6 Oct 23	08:28	vcs6
crw-rw----	1	root	tty	7,	128 Oct 23	08:28	vcsa
crw-rw----	1	root	tty	7,	129 Oct 23	08:28	vcsa1
crw-rw----	1	root	tty	7,	130 Oct 23	08:28	vcsa2
crw-rw----	1	root	tty	7,	131 Oct 23	08:28	vcsa3
crw-rw----	1	root	tty	7,	132 Oct 23	08:28	vcsa4
crw-rw----	1	root	tty	7,	133 Oct 23	08:28	vcsa5
crw-rw----	1	root	tty	7,	134 Oct 23	08:28	vcsa6
crw-rw----	1	root	tty	7,	64 Oct 23	08:28	vcsu
crw-rw----	1	root	tty	7,	65 Oct 23	08:28	vcsu1
crw-rw----	1	root	tty	7,	66 Oct 23	08:28	vcsu2
crw-rw----	1	root	tty	7,	67 Oct 23	08:28	vcsu3
crw-rw----	1	root	tty	7,	68 Oct 23	08:28	vcsu4
crw-rw----	1	root	tty	7,	69 Oct 23	08:28	vcsu5
crw-rw----	1	root	tty	7,	70 Oct 23	08:28	vcsu6
drwxr-xr-x	2	root	root	60	Oct 23	08:27	vfio
crw-----	1	root	root	10,	127 Oct 23	08:28	vga_arbiter
crw-----	1	root	root	10,	137 Oct 23	08:28	vhci
crw-rw----	1	root	kvm	10,	238 Oct 23	08:28	vhost-net
crw-rw----	1	root	kvm	10,	241 Oct 23	08:28	vhost-vsock
crw-----	1	root	root	10,	123 Oct 23	08:28	vmci
crw-rw-rw-	1	root	root	10,	122 Oct 23	08:28	vsock
crw-rw-rw-	1	root	root	1,	5 Oct 23	08:28	zero
crw-----	1	root	root	10,	249 Oct 23	08:28	zfs

```
crw          1 root      root    10, 245 Oct 23 08:28 273
ubuntu027@ubuntu:~$ ls -la /var
total 52
drwxr-xr-x 13 root root    4096 Sep 11 2024 .
drwxr-xr-x 20 root root    4096 Oct  9 13:45 ..
drwxr-xr-x  2 root root    4096 Oct 17 03:50 backups
drwxr-xr-x 14 root root    4096 Oct 16 06:15 cache
drwxrwxrwt  2 root root    4096 Sep 11 2024 crash
drwxr-xr-x 41 root root    4096 Oct 16 06:15 lib
drwxrwsr-x  2 root staff   4096 Apr 18 2022 local
lrwxrwxrwx  1 root root     9 Sep 11 2024 lock -> /run/lock
drwxr-xr-x  9 root syslog  4096 Oct 23 08:28 log
drwxrwsr-x  2 root mail    4096 Sep 11 2024 mail
drwxr-xr-x  2 root root    4096 Sep 11 2024 opt
lrwxrwxrwx  1 root root     4 Sep 11 2024 run -> /run
drwxr-xr-x  5 root root    4096 Sep 11 2024 snap
drwxr-xr-x  4 root root    4096 Sep 11 2024 spool
drwxrwxrwt  7 root root    4096 Oct 23 09:00 tmp
ubuntu027@ubuntu:~$
```

```
ubuntu027@ubuntu:~$ ls -la /tmp
total 52
drwxrwxrwt 13 root root 4096 Oct 23 08:56 .
drwxr-xr-x 20 root root 4096 Oct  9 13:45 ..
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .font-unix
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .ICE-unix
drwx----- 3 root root 4096 Oct 23 08:28 snap-private-tmp
drwx----- 3 root root 4096 Oct 23 08:28 systemd-private-7d8365cdb82b42599c383f23baaa117e-ModemManager.service-ZKF1Pa
drwx----- 3 root root 4096 Oct 23 08:28 systemd-private-7d8365cdb82b42599c383f23baaa117e-systemd-1ogind.service-6c2Tfm
drwx----- 3 root root 4096 Oct 23 08:48 systemd-private-7d8365cdb82b42599c383f23baaa117e-systemd-resolved.service-xalCcV
drwx----- 3 root root 4096 Oct 23 08:48 systemd-private-7d8365cdb82b42599c383f23baaa117e-systemd-timesyncd.service-SOOAWy
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .Test-unix
drwx----- 2 root root 4096 Oct 23 08:28 vmware-root_744-2957583465
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .X11-unix
drwxrwxrwt  2 root root 4096 Oct 23 08:28 .XIM-unix
ubuntu027@ubuntu:~$ _
```

```
urwxrwxrwt  2 root root 4096 Oct 23 08:28 .XIM-unix
ubuntu027@ubuntu:~$ ls -la ~
total 28
drwxr-x--- 4 ubuntu027 ubuntu027 4096 Oct  9 14:32 .
drwxr-xr-x  3 root      root    4096 Oct  9 14:26 ..
-rw-r--r--  1 ubuntu027 ubuntu027  220 Jan  6 2022 .bash_logout
-rw-r--r--  1 ubuntu027 ubuntu027 3771 Jan  6 2022 .bashrc
drwx----- 2 ubuntu027 ubuntu027 4096 Oct  9 14:32 .cache
-rw-r--r--  1 ubuntu027 ubuntu027  807 Jan  6 2022 .profile
drwx----- 2 ubuntu027 ubuntu027 4096 Oct  9 14:27 .ssh
ubuntu027@ubuntu:~$
```

```
ubuntu027@ubuntu:~$ cat ~/answer.md
The /bin directory contains essential command binaries that are needed for system booting and basic
operations.

The /usr/bin directory contains user commands and applications that are not required for system star
tup.

The /usr/local/bin directory is used for programs installed manually by the user and not managed by
the system package manager.

This separation keeps system tools and user-installed software organized.
```

TASK:04

```
ubuntu027@ubuntu:~$ mkdir -p ~/lab4/workspace/python_project
ubuntu027@ubuntu:~$ cd ~/lab4/workspace/python_project
ubuntu027@ubuntu:~/lab4/workspace/python_project$ pwd
/home/ubuntu027/lab4/workspace/python_project
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

Ubuntu Server ~

GNU nano 6.2 README.md *

Lab 4 README

```
GNU nano 6.2 main.py
print("Hello Lab 4")_
```

GNU nano 6.2
Env=Lab 4

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la
total 20
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:27 .
drwxrwxr-x 3 ubuntu027 ubuntu027 4096 Oct 23 09:08 ..
-rw-rw-r-- 1 ubuntu027 ubuntu027    10 Oct 23 09:27 .Env
-rw-rw-r-- 1 ubuntu027 ubuntu027   21 Oct 23 09:26 main.py
-rw-rw-r-- 1 ubuntu027 ubuntu027   13 Oct 23 09:24 README.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la
total 20
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:27 .
drwxrwxr-x 3 ubuntu027 ubuntu027 4096 Oct 23 09:08 ..
-rw-rw-r-- 1 ubuntu027 ubuntu027    10 Oct 23 09:27 .Env
-rw-rw-r-- 1 ubuntu027 ubuntu027   21 Oct 23 09:26 main.py
-rw-rw-r-- 1 ubuntu027 ubuntu027   13 Oct 23 09:24 README.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp README..md README..copy.md
cp: cannot stat 'README..md': No such file or directory
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp README.md README.copy.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ mv README.copy.md README.dev.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ rm README.dev.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ -p ~/lab4/workspace/java_app
-p: command not found
ubuntu027@ubuntu:~/lab4/workspace/python_project$ mkdir -p ~/lab4/workspace/java_app
ubuntu027@ubuntu:~/lab4/workspace/python_project$ _
```

```
pass/java_app_copy
cp: -r not specified; omitting directory '/home/ubuntu027/lab4/workspace/python_project'
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la ~/lab4/workspace_
```

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la
total 20
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:27 .
drwxrwxr-x 3 ubuntu027 ubuntu027 4096 Oct 23 09:08 ..
-rw-rw-r-- 1 ubuntu027 ubuntu027 10 Oct 23 09:27 .Env
-rw-rw-r-- 1 ubuntu027 ubuntu027 21 Oct 23 09:26 main.py
-rw-rw-r-- 1 ubuntu027 ubuntu027 13 Oct 23 09:24 README.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp README..md README.copy.md
cp: cannot stat 'README..md': No such file or directory
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp README.md README.copy.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ mv README.copy.md README.dev.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ rm README.dev.md
ubuntu027@ubuntu:~/lab4/workspace/python_project$ -p ~/lab4/workspace/java_app
-p: command not found
ubuntu027@ubuntu:~/lab4/workspace/python_project$ mkdir -p ~/lab4/workspace/java_app
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp -p ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
cp: -r not specified; omitting directory '/home/ubuntu027/lab4/workspace/python_project'
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la ~/lab4/workspace
ls-la: command not found
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ls -la ~/lab4/workspace
total 20
drwxrwxr-x 5 ubuntu027 ubuntu027 4096 Oct 23 09:33 .
drwxrwxr-x 3 ubuntu027 ubuntu027 4096 Oct 23 09:08 ..
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:31 java_app
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:33 java_app_copy
drwxrwxr-x 2 ubuntu027 ubuntu027 4096 Oct 23 09:30 python_project
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```
10 ls -la /usr
11 ls -la /dev
12 ls -la /var
13 ls -la /temp
14 ls -la /tmp
15 ls -la /
16 ls -la /bin
17 ls -la /sbin
18 ls -la /usr
19 ls -la /opt
20 ls -la /etc
21 ls -la /dev
22 ls -la /var
23 ls -la /tmp
24 ls -la ~
25 nano ~/answer.md
26 cat ~/answer.md
27 mkdir -p ~/lab4/workspace/python_project
28 cd ~/lab4/workspace/python_project
29 pwd
30 cd /home/student/lab4/workspace/python_project
31 nano README.md
32 nano main.py
33 nano .Env
34 ls -la
35 cp README..md README.copy.md
36 cp README.md README.copy.md
37 mv README.copy.md README.dev.md
38 rm README.dev.md
39 -p ~/lab4/workspace/java_app
40 mkdir -p ~/lab4/workspace/java_app
41 cp -p ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
42 cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
43 ls-ia ~/lab4/workspace
44 ls -la ~/lab4/workspace
45 history
ubuntu027@ubuntu:~/lab4/workspace/python_project$ _
```

```
-bash: cd: /home/ubuntu027/lab4/workspace/py: No such file or directory
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cd ~/lab4/workspace/python_project/
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

TASK:05

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cd ~/lab4/workspace/python_project/
ubuntu027@ubuntu:~/lab4/workspace/python_project$ uname -a
Linux ubuntu 5.15.0-119-generic #129-Ubuntu SMP Fri Aug 2 19:25:20 UTC 2024 x86_64 x86_64 x86_64 GNU
/Linux
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cat /proc/cpuinfo_
```

```

address sizes    : 45 bits physical, 48 bits virtual
power management:

processor      : 1
vendor_id     : GenuineIntel
cpu family    : 6
model         : 78
model name   : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
stepping       : 3
microcode     : 0xffffffff
cpu MHz       : 2399.999
cache size    : 3072 KB
physical id   : 2
siblings       : 1
core id        : 0
cpu cores     : 1
apicid         : 2
initial apicid: 2
fpu            : yes
fpu_exception  : yes
cpuid level   : 22
wp             : yes
flags          : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mm
x fxsr sse sse2 ss syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon nopl xttopology tsc_reliabi
e nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popc
nt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch invpcid_single
pti ssbd ibrs ibpb stibp fsgsbase tsc_adjust bmi1 avx2 smep bmi2 invpcid rdseed adx smap clflushopt
xsaveopt xsavec xgetbv1 xsaves arat md_clear flush_l1d arch_capabilities
bugs           : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit
srbds mmio_stale_data retbleed gds bhi
bogomips      : 4799.99
clflush size   : 64
cache_alignment : 64
address sizes  : 45 bits physical, 48 bits virtual
power management:

```

```

ubuntu027@ubuntu:~/lab4/workspace/python_project$ free -h
      total        used        free      shared  buff/cache   available
Mem:   3.8Gi       835Mi      765Mi      1.0Mi      2.7Gi      3.2Gi
Swap:  2.6Gi       1.0Mi      2.6Gi
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```

ubuntu027@ubuntu:~/lab4/workspace/python_project$ free -h
      total        used        free      shared  buff/cache   available
Mem:   3.8Gi       835Mi      765Mi      1.0Mi      2.7Gi      3.2Gi
Swap:  2.6Gi       1.0Mi      2.6Gi
ubuntu027@ubuntu:~/lab4/workspace/python_project$ df -h
Filesystem            Size  Used Avail Use% Mounted on
tmpfs                 388M  1.6M  387M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv   14G  6.8G  5.8G  55% /
tmpfs                 1.9G    0  1.9G   0% /dev/shm
tmpfs                 5.0M    0  5.0M   0% /run/lock
/dev/sda2              2.0G  252M  1.6G  14% /boot
tmpfs                 388M  4.0K  388M   1% /run/user/1000
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```

tmpfs 388M 4.0K 388M 1% /run/user/1000
ubuntu027@ubuntu:~/lab4/workspace/python_project$ cat /etc/os-release
PRETTY_NAME="Ubuntu 22.04.5 LTS"
NAME='Ubuntu'
VERSION_ID="22.04"
VERSION='22.04.5 LTS (Jammy Jellyfish)'
VERSION_CODENAME=jammy
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=jammy
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```

ubuntu027@ubuntu:~/lab4/workspace/python_project$ ps aux
```

User	PPID	RSS	RES	SHR	STIME	TTY	%CPU	%MEM	COMMAND
root	712	0.0	0.0	0	0 ?		I<	12:27	0:00 [ext4-rsv-conver]
root	861	0.0	0.0	6896	2868 ?		Ss	12:27	0:00 /usr/sbin/cron -f -P
message+	862	0.0	0.1	9000	4936 ?		Ss	12:27	0:04 @dbus-daemon --system --address=s
root	868	0.0	0.1	82832	3980 ?		Ss1	12:27	0:00 /usr/sbin/irqbalance --foreground
root	870	0.0	0.4	32736	18312 ?		Ss	12:27	0:02 /usr/bin/python3 /usr/bin/network
root	871	0.0	0.1	234504	6704 ?		Ssl	12:27	0:00 /usr/libexec/polkitd --no-debug
root	875	0.2	0.9	1923096	36368 ?		Ssl	12:27	0:12 /usr/lib/snapd/snapd
root	877	0.0	0.1	15532	7032 ?		Ss	12:27	0:01 /lib/systemd/systemd-logind
root	889	0.0	0.1	7840	4420 tty1		Ss	12:27	0:00 /bin/login -p --
root	918	0.0	0.3	317964	12256 ?		Ssl	12:27	0:00 /usr/sbin/ModemManager
root	930	0.0	0.5	109756	20964 ?		Ssl	12:27	0:00 /usr/bin/python3 /usr/share/unatt
ubuntu0+	1239	0.0	0.2	17084	9768 ?		Ss	12:28	0:01 /lib/systemd/systemd --user
ubuntu0+	1240	0.0	0.0	169360	3616 ?		S	12:28	0:00 (sd-pam)
ubuntu0+	1248	0.0	0.1	8880	5384 tty1		S	12:28	0:03 -bash
root	1318	0.0	0.2	17176	8636 ?		Ss	12:30	0:00 sshd: ubuntu027 [priv]
ubuntu0+	1375	0.0	0.1	17308	5908 ?		S	12:30	0:00 sshd: ubuntu027@pts/0
ubuntu0+	1376	0.0	0.1	8736	4292 pts/0		Ss+	12:30	0:00 -bash
root	1688	0.0	0.4	295592	18844 ?		Ssl	12:31	0:02 /usr/libexec/packagekitd
root	23544	0.2	0.0	0	0 ?		I	12:44	0:11 [kworker/u256:4-events_unbound]
systemd+	25485	0.1	0.2	16256	8532 ?		Ss	12:47	0:04 /lib/systemd/systemd-networkd
systemd+	25490	0.0	0.2	25540	10620 ?		Ss	12:47	0:01 /lib/systemd/systemd-resolved
root	25492	0.1	0.3	31808	12508 ?		Sxs	12:47	0:06 /lib/systemd/systemd-journald
systemd+	25558	0.0	0.1	89364	6572 ?		Ssl	12:47	0:02 /lib/systemd/systemd-timesyncd
root	27176	0.0	0.2	15440	8464 ?		Ss	12:50	0:00 sshd: /usr/sbin/sshd -D [listener]
root	52327	0.1	0.0	0	0 ?		I	13:03	0:05 [kworker/1:1-events]
root	75128	0.2	0.0	0	0 ?		I	13:14	0:05 [kworker/0:2-rcu_gp]
root	76290	0.0	0.3	392632	12836 ?		Ssl	13:15	0:00 /usr/libexec/udisks2/udisksd
root	77534	0.0	0.1	25632	6564 ?		Ss	13:17	0:01 /lib/systemd/systemd-udevd
root	90862	0.0	0.3	51152	12072 ?		Ss	13:24	0:00 /usr/bin/vGAuthService
root	90863	0.7	0.2	167316	8704 ?		Ssl	13:24	0:12 /usr/bin/vmtoolsd
syslog	93897	0.0	0.1	222404	4976 ?		Ssl	13:28	0:00 /usr/sbin/rsyslogd -n -iNONE
root	95023	0.0	0.0	0	0 ?		I	13:39	0:00 [kworker/u256:1-events_power_effi]
root	95025	0.0	0.0	0	0 ?		I	13:43	0:00 [kworker/1:0-events]
root	95026	0.6	0.0	0	0 ?		I	13:44	0:03 [kworker/0:3-events]
root	95028	0.1	0.0	0	0 ?		I	13:46	0:00 [kworker/u256:0-events_power_effi]
ubuntu0+	95047	0.0	0.0	10072	3536 tty1		R+	13:53	0:00 ps aux

TASK:06

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ sudo adduser lab4user
[sudo] password for ubuntu027:
Adding user `lab4user' ...
Adding new group `lab4user' (1001) ...
Adding new user `lab4user' (1001) with group `lab4user' ...
Creating home directory `/home/lab4user' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for lab4user
Enter the new value, or press ENTER for the default
      Full Name []: Irraj
      Room Number []: 115
      Work Phone []: 03448424416
      Home Phone []: 03170178338
      Other []: xyz
Is the information correct? [Y/n] y^[S_
```

```
      Other []: xyz
Is the information correct? [Y/n] y
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```
Is the information correct? [Y/n] y
ubuntu027@ubuntu:~/lab4/workspace/python_project$ su lab4user
Password:
lab4user@ubuntu:/home/ubuntu027/lab4/workspace/python_project$ _
```

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ su lab4user
Password:
lab4user@ubuntu:/home/ubuntu027/lab4/workspace/python_project$ sudo whoami
[sudo] password for lab4user:
lab4user is not in the sudoers file. This incident will be reported.
lab4user@ubuntu:/home/ubuntu027/lab4/workspace/python_project$ sudo whoami
[sudo] password for lab4user:
lab4user is not in the sudoers file. This incident will be reported.
lab4user@ubuntu:/home/ubuntu027/lab4/workspace/python_project$ exit
exit
ubuntu027@ubuntu:~/lab4/workspace/python_project$ _
```

```
exit
ubuntu027@ubuntu:~/lab4/workspace/python_project$ sudo deluser --remove-home lab4user
Looking for files to backup/remove ...
Removing files ...
Removing user `lab4user' ...
Warning: group `lab4user' has no more members.
Done.
ubuntu027@ubuntu:~/lab4/workspace/python_project$ _
```

TASK:07

```
GNU nano 6.2          /home/ubuntu027/lab4/workspace/run-demo.sh *
#!/bin/bash

echo "Lab 4 demo: current user is $(whoami)"
echo "Current time: $(date)"

uptime

free -h_
```

```
ubuntu027@ubuntu:~/lab4/workspace/python_project$ chmod +x ~/lab4/workspace/run-demo.sh
ubuntu027@ubuntu:~/lab4/workspace/python_project$ ~/lab4/workspace/run-demo.sh
Lab 4 demo: current user is ubuntu027
Current time: Thu Oct 23 02:06:15 PM UTC 2025
14:06:16 up 1:39, 2 users, load average: 0.02, 0.03, 0.12
           total        used         free      shared  buff/cache   available
Mem:       3.8Gi       345Mi      746Mi       1.0Mi       2.7Gi       3.2Gi
Swap:      2.6Gi       1.0Mi      2.6Gi
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```

```
Swap.      2.6Gi       1.0Mi      2.6Gi
ubuntu027@ubuntu:~/lab4/workspace/python_project$ sudo ~/lab4/workspace/run-demo.sh
Lab 4 demo: current user is root
Current time: Thu Oct 23 02:06:51 PM UTC 2025
14:06:51 up 1:39, 3 users, load average: 0.06, 0.04, 0.12
           total        used         free      shared  buff/cache   available
Mem:       3.8Gi       345Mi      745Mi       1.0Mi       2.7Gi       3.2Gi
Swap:      2.6Gi       1.0Mi      2.6Gi
ubuntu027@ubuntu:~/lab4/workspace/python_project$
```