

CLOUD COMPUTING LAB

Name: Maria Abdul Malik

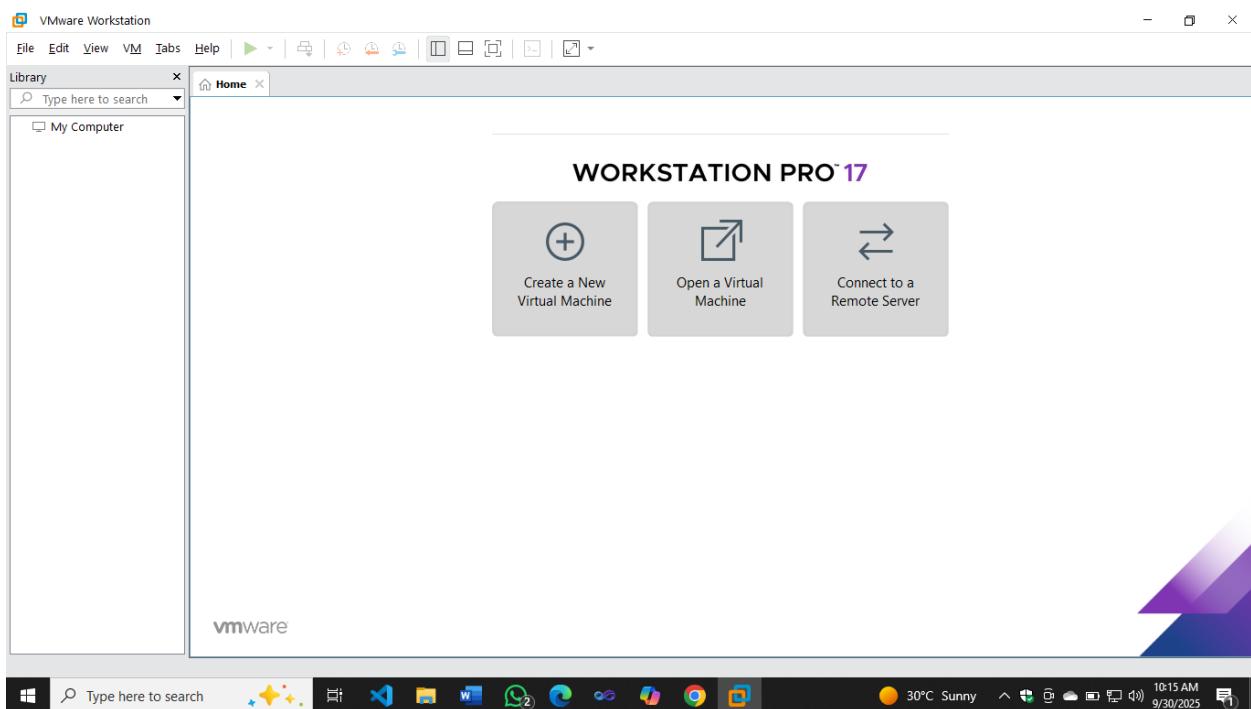
Reg No: 2023-BSE-076

Submitted to: Sir Muhammad Shoaib

Class: 5B

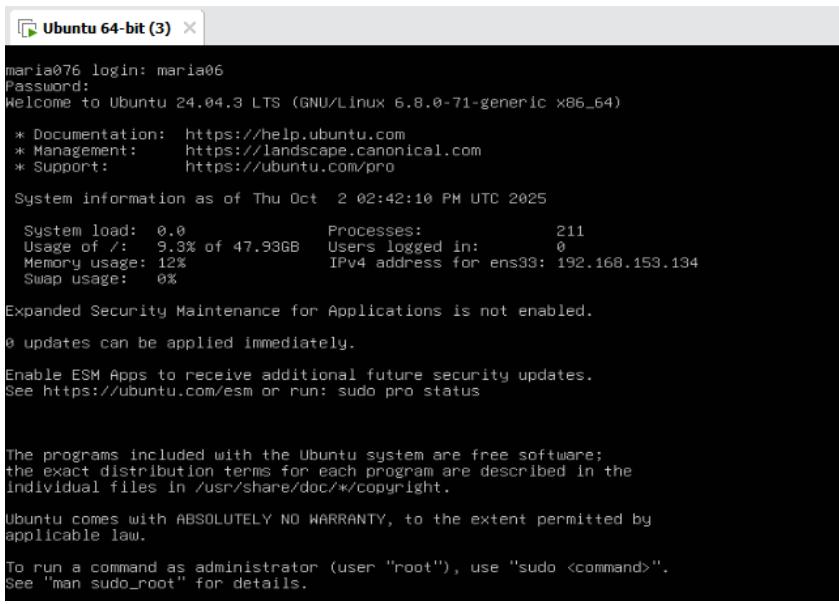
LAB #04

- Task 1: Verify VM resources in VMware**



vm_settings.png

Task 2 – Start VM and log in



```
maria076 login: maria06
Password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-71-generic x86_64)

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

System information as of Thu Oct 2 02:42:10 PM UTC 2025

 System load: 0.0      Processes:           211
 Usage of /: 9.3% of 47.99GB   Users logged in:     0
 Memory usage: 12%          IPv4 address for ens3: 192.168.153.134
 Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

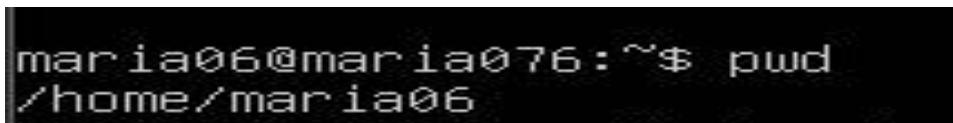
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

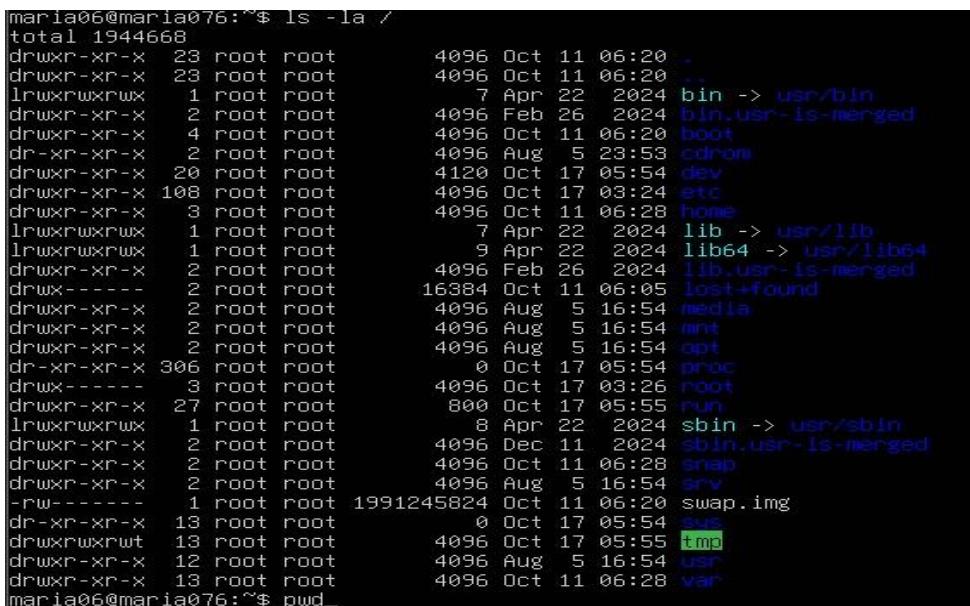
Vm.login.png



```
maria06@maria076:~$ pwd
/home/maria06
```

Whoami_pwd.png

Task 3 – Filesystem exploration — root tree and dotfiles



```
maria06@maria076:~$ ls -la /
total 1944668
drwxr-xr-x  23 root root        4096 Oct 11 06:20 .
drwxr-xr-x  23 root root        4096 Oct 11 06:20 ..
lrwxrwxrwx  1 root root         7 Apr 22 2024 bin -> usr/bin
drwxr-xr-x  2 root root        4096 Feb 26 2024 bin usr-ismerged
drwxr-xr-x  4 root root        4096 Oct 11 06:20 boot
dr-xr-xr-x  2 root root        4096 Aug  5 23:53 chrony
drwxr-xr-x  20 root root       4120 Oct 17 05:54 dev
drwxr-xr-x 108 root root       4096 Oct 17 03:24 etc
drwxr-xr-x  3 root root       4096 Oct 11 06:28 home
lrwxrwxrwx  1 root root         7 Apr 22 2024 lib -> usr/lib
lrwxrwxrwx  1 root root         9 Apr 22 2024 lib64 -> usr/lib64
drwxr-xr-x  2 root root       4096 Feb 26 2024 lib usr-ismerged
drwx-----  2 root root      16384 Oct 11 06:05 lost+found
drwxr-xr-x  2 root root       4096 Aug  5 16:54 media
drwxr-xr-x  2 root root       4096 Aug  5 16:54 mnt
drwxr-xr-x  2 root root       4096 Aug  5 16:54 opt
dr-xr-xr-x 306 root root        0 Oct 17 05:54 proc
drwx-----  3 root root       4096 Oct 17 03:26 root
drwxr-xr-x  27 root root       800 Oct 17 05:55 run
lrwxrwxrwx  1 root root         8 Apr 22 2024 sbin -> usr/sbin
drwxr-xr-x  2 root root       4096 Dec 11 2024 sbin usr-ismerged
drwxr-xr-x  2 root root       4096 Oct 11 06:28 snap
drwxr-xr-x  2 root root       4096 Aug  5 16:54 srv
-rw-----  1 root root 1991245824 Oct 11 06:20 swap.img
dr-xr-xr-x 13 root root        0 Oct 17 05:54 sys
drwxrwxrwt 13 root root       4096 Oct 17 05:55 tmp
drwxr-xr-x 12 root root       4096 Aug  5 16:54 usr
drwxr-xr-x 13 root root       4096 Oct 11 06:28 var
maria06@maria076:~$ pwd
```

Ls_root.png

```
maria06@maria076:~$ ls -la /bin
lrwxrwxrwx 1 root root 7 Apr 22 2024 /bin -> usr/bin
maria06@maria076:~$ _
```

Ls_bin.png

```
nayab046@nayab046:~$ ls -la /sbin
lrwxrwxrwx 1 root root 8 Apr 22 2024 /sbin -> usr/sbin
nayab046@nayab046:~$ _
```

Ls_sbin.png

```
nayab046@nayab046:~$ ls -la /usr
total 96
drwxr-xr-x 12 root root 4096 Aug 5 16:54 .
drwxr-xr-x 23 root root 4096 Sep 26 05:01 ..
drwxr-xr-x 2 root root 36864 Sep 26 05:02 bin
drwxr-xr-x 2 root root 4096 Apr 22 2024 games
drwxr-xr-x 33 root root 4096 Sep 26 05:01 include
drwxr-xr-x 78 root root 4096 Sep 26 05:02 lib
drwxr-xr-x 2 root root 4096 Aug 5 17:01 lib64
drwxr-xr-x 11 root root 4096 Sep 26 05:01 libexec
drwxr-xr-x 10 root root 4096 Aug 5 16:54 local
drwxr-xr-x 2 root root 20480 Sep 26 05:02 sbin
drwxr-xr-x 124 root root 4096 Sep 26 05:02 share
drwxr-xr-x 4 root root 4096 Sep 26 05:01 src
nayab046@nayab046:~$ _
```

Ls/usr.png

```
nayab046@nayab046:~$ ls -la /opt
total 8
drwxr-xr-x 2 root root 4096 Aug 5 16:54 .
drwxr-xr-x 23 root root 4096 Sep 26 05:01 ..
nayab046@nayab046:~$ _
```

Ls_opt.png

```

-rw-r--r-- 1 root root      0 Aug  5 16:54 subuid-
-rw-r--r-- 1 root root 4343 Jun 25 12:42 sudo.conf
-r--r----- 1 root root 1800 Jan 29  2024 sudoers
drwxr-xr-x 2 root root 4096 Aug  5 17:02 sudoers.d
-rw-r--r-- 1 root root 9804 Jun 25 12:42 sudo_logsvrd.conf
drwxr-xr-x 2 root root 4096 Aug  5 17:14 supervat
-rw-r--r-- 1 root root 2209 Mar 24 2024 sysctl.conf
drwxr-xr-x 2 root root 4096 Aug  5 17:02 sysctl.d
drwxr-xr-x 2 root root 4096 Aug  5 17:14 systat
drwxr-xr-x 6 root root 4096 Aug  5 16:49 systemd
drwxr-xr-x 2 root root 4096 Aug  5 17:00 terminal
drwxr-xr-x 2 root root 4096 Oct 11 06:19 thermald
-rw-r--r-- 1 root root     8 Aug  5 17:02 timezone
drwxr-xn-x 2 root root 4096 Aug  5 17:14 timetables.d
drwxr-xp-x 2 root root 4096 Aug  5 17:14 ubuntu-adantage
-rw-r--r-- 1 root root 1260 Jan 27 2023 ucf.conf
drwxr-xn-x 4 root root 4096 Aug  5 17:02 udev
drwxr-xr-x 2 root root 4096 Aug  5 17:14 udisks2
drwxr-xn-x 3 root root 4096 Aug  5 17:14 uhi
-rw-r--r-- 1 root root 208 Aug  5 16:54 .updated
drwxr-xr-x 3 root root 4096 Aug  5 17:02 update-manager
drwxr-xr-x 2 root root 4096 Aug  5 17:14 update-motd.d
drwxr-xr-x 2 root root 4096 Aug  5 17:14 update-notifier
drwxr-xn-x 2 root root 4096 Oct 11 06:19 UPower
-rw-r--r-- 1 root root 1523 Aug  5 17:14 usb_modeswitch.conf
drwxr-xr-x 2 root root 4096 Aug  5 17:14 usb_modeswitch.d
lrwxrwxrwx 1 root root   16 Aug  5 17:02 vconsole.conf -> default/keyboard
drwxr-xr-x 2 root root 4096 Aug  5 17:14 vim
drwxr-xn-x 4 root root 4096 Aug  5 17:14 vimware-tools
lrwxrwxrwx 1 root root   23 Feb 26 2024 vtrgb -> /etc/alternatives/vtrgb
-rw-r--r-- 1 root root 4942 Aug  5 17:14 wgetrc
drwxr-xr-x 4 root root 4096 Aug  5 17:02 x11
-rw-r--r-- 1 root root 681 Apr  8 2024 xattr.conf
drwxr-xn-x 4 root root 4096 Aug  5 17:02 xdg
drwxr-xr-x 2 root root 4096 Aug  5 17:02 xm
-rw-r--r-- 1 root root 460 Aug  5 17:14 zsh_command_not_found
maria06@maria076:~$ _
```

Ls_etc.png

```

crw-rw--- 1 root kvm 10, 124 Oct 17 05:54 udnabuf
crw----- 1 root root 10, 239 Oct 17 05:54 uhid
crw----- 1 root root 10, 223 Oct 17 05:54 uinput
crw-rw-rw- 1 root root 1,   9 Oct 17 05:54 urandom
crw----- 1 root root 10, 126 Oct 17 05:54 userfaultfd
crw----- 1 root root 10, 240 Oct 17 05:54 userio
crw-rw--- 1 root tty  7,   0 Oct 17 05:54 vcs
crw-rw--- 1 root tty  7,   1 Oct 17 05:54 vcs1
crw-rw--- 1 root tty  7,   2 Oct 17 05:54 vcs2
crw-rw--- 1 root tty  7,   3 Oct 17 05:54 vcs3
crw-rw--- 1 root tty  7,   4 Oct 17 05:54 vcs4
crw-rw--- 1 root tty  7,   5 Oct 17 05:54 vcs5
crw-rw--- 1 root tty  7,   6 Oct 17 05:54 vcs6
crw-rw--- 1 root tty  7, 128 Oct 17 05:54 vcsa
crw-rw--- 1 root tty  7, 129 Oct 17 05:54 vcsa1
crw-rw--- 1 root tty  7, 130 Oct 17 05:54 vcsa2
crw-rw--- 1 root tty  7, 131 Oct 17 05:54 vcsa3
crw-rw--- 1 root tty  7, 132 Oct 17 05:54 vcsa4
crw-rw--- 1 root tty  7, 133 Oct 17 05:54 vcsa5
crw-rw--- 1 root tty  7, 134 Oct 17 05:54 vcsa6
crw-rw--- 1 root tty  7, 64 Oct 17 05:54 vcsu
crw-rw--- 1 root tty  7, 65 Oct 17 05:54 vcsu1
crw-rw--- 1 root tty  7, 66 Oct 17 05:54 vcsu2
crw-rw--- 1 root tty  7, 67 Oct 17 05:54 vcsu3
crw-rw--- 1 root tty  7, 68 Oct 17 05:54 vcsu4
crw-rw--- 1 root tty  7, 69 Oct 17 05:54 vcsu5
crw-rw--- 1 root tty  7, 70 Oct 17 05:54 vcsu6
drwxr-xr-x 2 root root  60 Oct 17 05:54 virtio
crw----- 1 root root 10, 127 Oct 17 05:54 vga_arbiter
crw----- 1 root root 10, 137 Oct 17 05:54 vhci
crw-rw--- 1 root kvm 10, 238 Oct 17 05:54 vhost-net
crw-rw--- 1 root kvm 10, 241 Oct 17 05:54 vhost-vsock
crw----- 1 root root 10, 122 Oct 17 05:54 vmci
crw-rw-rw- 1 root root 1,   5 Oct 17 05:54 zero
crw----- 1 root root 10, 249 Oct 17 05:54 zfs
maria06@maria076:~$ _
```

Ls_dev.png

```
maria06@maria076:~$ ls -la /var
total 56
rwxr-xr-x 13 root root 4096 Oct 11 06:28 .
rwxr-xr-x 23 root root 4096 Oct 11 06:20 ..
rwxr-xr-x 2 root root 4096 Oct 17 05:51 backups
rwxr-xr-x 16 root root 4096 Oct 11 07:15 cache
rwxrwsrwt 2 root root 4096 Aug 5 17:02 crash
rwxr-xr-x 45 root root 4096 Oct 11 07:15 lib
rwxrwsr-x 2 root staff 4096 Apr 22 2024 local
rwxrwxrwx 1 root root 9 Aug 5 16:54 lock -> /run/lock
rwxrwxr-x 10 root syslog 4096 Oct 17 05:54 log
rwxrwsr-x 2 root mail 4096 Aug 5 16:54 mail
rwxr-xr-x 2 root root 4096 Aug 5 16:54 opt
rwxrwxrwx 1 root root 4 Aug 5 16:54 run -> /run
rwxr-xr-x 2 root root 4096 May 21 15:46 snap
rwxr-xr-x 4 root root 4096 Aug 5 17:14 socket
rwxrwxrwt 9 root root 4096 Oct 17 06:04 tmp
rw-r--r-- 1 root root 208 Aug 5 16:54 .updated
maria06@maria076:~$
```

Ls_var.png

```
total 60
drwxrwxrwt 15 root root 4096 Oct 17 06:04 .
drwxr-xr-x 23 root root 4096 Oct 11 06:20 ..
drwxrwxrwt 2 root root 4096 Oct 17 05:54 .font-unix
drwxrwxrwt 2 root root 4096 Oct 17 05:54 .ICE-unix
drwx----- 2 root root 4096 Oct 17 05:54 snap-private-trip
drwx----- 3 root root 4096 Oct 17 06:04 systemd-private-1f31bdadfc254a0e9853e57e11b72264-f
drwx----- 3 root root 4096 Oct 17 05:54 systemd-private-1f31bdadfc254a0e9853e57e11b72264-M
drwx----- 3 root root 4096 Oct 17 05:54 systemd-private-1f31bdadfc254a0e9853e57e11b72264-p
drwx----- 3 root root 4096 Oct 17 05:54 systemd-private-1f31bdadfc254a0e9853e57e11b72264-s
drwx----- 3 root root 4096 Oct 17 05:54 systemd-private-1f31bdadfc254a0e9853e57e11b72264-s
drwx----- 3 root root 4096 Oct 17 05:54 systemd-private-1f31bdadfc254a0e9853e57e11b72264-s
drwx----- 3 root root 4096 Oct 17 06:04 systemd-private-1f31bdadfc254a0e9853e57e11b72264-s
drwx----- 3 root root 4096 Oct 17 06:04 systemd-private-1f31bdadfc254a0e9853e57e11b72264-u
drwx----- 2 root root 4096 Oct 17 05:54 vmmware-root_737-4257003961
drwxrwxrwt 2 root root 4096 Oct 17 05:54 .X11-unix
drwxrwxrwt 2 root root 4096 Oct 17 05:54 .XIM-unix
maria06@maria076:~$
```

Ls_temp.png

```
maria06@maria076:~$ ls -la ~
total 28
drwxr-x--- 4 maria06 maria06 4096 Oct 11 07:01 .
drwxr-xr-x 3 root root 4096 Oct 11 06:28 ..
-rw-r--r-- 1 maria06 maria06 220 Mar 31 2024 .bash_logout
-rw-r--r-- 1 maria06 maria06 3771 Mar 31 2024 .bashrc
drwx----- 2 maria06 maria06 4096 Oct 11 06:29 .cache
-rw-r--r-- 1 maria06 maria06 807 Mar 31 2024 .profile
drwx----- 2 maria06 maria06 4096 Oct 17 03:26 .ssh
-rw-r--r-- 1 maria06 maria06 0 Oct 11 07:01 .sudo_as_admin_successful
```

home_ls.png



answers_md.png

Task 4 – Essential CLI tasks — navigation and file operations

```
maria06@maria076:~$ mkdir -p ~/lab4/workspace/python_project
```

mkdir_workspace.png

```
maria06@maria076:~/lab4/workspace/python_project$ cd ~/lab4/workspace/python_project
maria06@maria076:~/lab4/workspace/python_project$
```

cd_workspace.png

```
maria06@maria076:~/lab4/workspace/python_project$ pwd
/home/maria06/lab4/workspace/python_project$
```

pwd_workspace.png



nano_readme.png



nano_main.png



nano_env.png

```
maria06@maria076:~/lab4/workspace/python_project$ ls -la
total 20
drwxrwxr-x 2 maria06 maria06 4096 Oct 17 07:21 .
drwxrwxr-x 3 maria06 maria06 4096 Oct 17 06:27 ..
-rw-rw-r-- 1 maria06 maria06    9 Oct 17 07:21 .env
-rw-rw-r-- 1 maria06 maria06   20 Oct 17 07:19 main.py
-rw-rw-r-- 1 maria06 maria06   13 Oct 17 07:15 README.md
```

workspace_ls.png

```
maria06@maria076:~/lab4/workspace/python_project$ cp README.md README.copy.md
```

cp_readme.png

```
maria06@maria076:~/lab4/workspace/python_project$ mv README.copy.md
mv: missing destination file operand after 'README.copy.md'
Try 'mv --help' for more information.
```

mv_readme.png

```
maria06@maria076:~/lab4/workspace/python_project$ rm README.dev.md
rm: cannot remove 'README.dev.md': No such file or directory
```

rm_readme.png

```
maria06@maria076:~/lab4/workspace/python_project$ mkdir -p ~/lab4/workspace/java_app
maria06@maria076:~/lab4/workspace/python_project$
```

mkdir_java_app.png

```
ce/python_project$ cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_a_ce/python_project$
```

cp_recursive.png

```
_project$ cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_a_
_project$ la -la ~/lab4/workspace
08:07 .
06:27 ..
08:02 java_app
08:07 java_app_copy
07:27 python_project
_project$
```

copy_verify.png

```
drwxrwxr-x 2 maria06 maria06 4096 Oct 17 07:27 python_project
maria06@maria076:~/lab4/workspace/python_project$ history
  1  pwd
  2  ls -la /
  3  cat /etc/os-release
  4  ls -la /bin
  5  ls -la /sbin
  6  ls -la /usr
  7  ls -la /opt
  8  ls -la /etc
  9  ls -la /dev
 10  ls -la /var
 11  ls -la /tmp
 12*
 13  ls -la ~
 14  nano ~/answer.md
 15  mkdir -p ~/lab4/workspace/python_project
 16  cd ~/lab4/workspace/python_project
 17  pwd
 18  nano README.md
 19  nano main.py
 20  nano .env
 21  ls -la
 22  cp README.md README.copy.md
 23  mv README.copy.md
 24  rm README.dev.md
 25  mkdir -p ~/lab4/workspace/java_app
 26  cp -r ~/lab4/workspace/python_project ~/lab4/workspace/java_app_copy
 27  la -la ~/lab4/workspace
 28  history
maria06@maria076:~/lab4/workspace/python_project$
```

history.png

Task 5 – System info, resources & processes

```
28 history
maria06@maria076:~/lab4/workspace/python_project$ uname -a
Linux maria076 6.8.0-71-generic #71-Ubuntu SMP PREEMPT_DYNAMIC Tue Jul 22 16:52:38 UTC 2025 x86_64 x86_64 x86_64 GNU/Linux
maria06@maria076:~/lab4/workspace/python_projects$
```

uname.png

```
Ubuntu 64-bit (2) x
bugs : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds mmio_stale_data retbleed gds bhi
bogomips : 4992.00
clflush size : 64
cache_alignment : 64
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) i5-6300U CPU @ 2.40GHz
stepping : 3
microcode : 0xd4
cpu MHz : 2496.000
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 mmx fxsr sse sse2 ss syscall nx pdpe1gb rdscp lm constant_tsc
arch_perfm_mon xtoplogy tsc_reliable nopl cpuid tsc_known_freq pn1 pcimulqq ssse3 fma cx16 pclid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_time
r aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch pt1 ssbd lbrs ibpb stibp fsgsbase tsc_adjust bm1l avx2 smp epb invpcid rdseed adx smap clflush
hopt xsaveopt xsaves xgetbv1 xsaves arat md_clear flush_lid 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 : 4992.00
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:

maria06@maria076:~$
```

cpuinfo.png

```
maria06@maria076:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:       1.9Gi       369Mi      1.4Gi      1.2Mi       228Mi      1.5Gi
Swap:      1.9Gi          0B      1.9Gi
maria06@maria076:~$
```

meminfo.png

```
maria06@maria076:~$ df -h
Filesystem           Size  Used Avail Use% Mounted on
tmpfs                 192M   1.3M  191M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv  9.8G  4.6G  4.7G  50% /
tmpfs                 960M     0  960M   0% /dev/shm
tmpfs                  5.0M     0  5.0M   0% /run/lock
/dev/sda2               1.8G  100M  1.6G   7% /boot
tmpfs                 192M    12K  192M   1% /run/user/1000
maria06@maria076:~$
```

diskinfo.png

```
maria06@maria076:~$ cat /etc/os-release
PRETTY_NAME="Ubuntu 24.04.3 LTS"
NAME="Ubuntu"
VERSION_ID="24.04"
VERSION="24.04.3 LTS (Noble Numbat)"
VERSION_CODENAME=noble
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=noble
LOGO=ubuntu-logo
```

os-release.png

```
Ubuntu 64-bit (2) ×
root   524  0.0  0.4 19008  9344 ? Ss  00:54 0:00 /usr/lib/systemd/systemd-networkd
root   635  0.0  0.0    0   0 ? I  00:54 0:00 [kworker/u257:3-events_power_efficient]
systemd+ 641  0.0  0.6 21580 12672 ? Ss  00:54 0:00 /usr/lib/systemd/systemd-resolved
systemd+ 647  0.0  0.3 91024  7808 ? Ssl 00:54 0:00 /usr/lib/systemd/systemd-timesyncd
root   709  0.0  0.0    0   0 ? I< 00:54 0:00 [kworker/R-cfg80]
root   734  0.0  0.6 53464 12832 ? Ss  00:54 0:00 /usr/bin/GAuthService
root   735  0.4  0.4 242124 9340 ? Ssl 00:54 0:12 /usr/bin/vmtoolsd
root   759  0.0  0.0    0   0 ? S  00:54 0:00 [/tmp/57-vmu_vmc1]
root   760  0.0  0.0    0   0 ? S  00:54 0:00 [/tmp/58-vmu_vmc1]
root   762  0.0  0.0    0   0 ? S  00:54 0:00 [/tmp/59-vmu_vmc1]
message+ 780  0.0  0.2  9788  5376 ? Ss  00:54 0:00 @ibus-daemon --system --address=systemd --nofork --nopidfile --systemd-activation --syslog-o
polkitd 803  0.0  0.3 308164 7808 ? Ssl 00:54 0:00 /usr/lib/polkit-1/polkitd --no-debug
root   811  0.0  0.4 18140  8704 ? Ss  00:54 0:00 /usr/lib/systemd/systemd-logind
root   812  0.0  0.0    0   0 ? S  00:54 0:00 [/tmp/16-vmugfx]
root   813  0.0  0.6 468952 13568 ? Ssl 00:54 0:00 /usr/libexec/udisks2/udisksd
root   814  0.0  0.0    0   0 ? I< 00:54 0:00 [kworker/R-ttm]
syslog 829  0.0  0.2 222508  6016 ? Ssl 00:54 0:00 /usr/sbin/rsyslogd -n -INONE
root   845  0.0  0.1  5824  2688 ? Ss  00:54 0:00 /usr/sbin/cron -f -P
root   864  0.0  0.6 392028 12800 ? Ssl 00:54 0:00 /usr/sbin/ModemManager
root   868  0.0  1.1 109664 23040 ? Ssl 00:54 0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown --wait-for-signal
root   931  0.0  0.2  6948  4736 tty1 S  00:54 0:00 /bin/login -p --
root   1382  0.0  0.0    0   0 ? S  00:55 0:00 [psmon]
maria06 1384  0.0  0.5 20108 11008 ? Ss  00:55 0:00 /usr/lib/systemd/systemd --user
maria06 1385  0.0  0.1 21144  3512 ? S  00:55 0:00 [sd-pam]
maria06 1394  0.0  0.2  8652  5376 tty1 S  00:55 0:00 -bash
root   1413  0.0  0.0    0   0 ? I  00:00 0:00 [kworker/u257:0-events_power_efficient]
root   1414  0.3  0.0    0   0 ? I  00:04 0:00 [kworker/0:1-events]
root   1415  0.2  0.0    0   0 ? I  00:04 0:04 [kworker/0:1-events]
root   1432  0.0  0.0    0   0 ? I< 00:16 0:00 [kworker/0:0h]
root   1445  0.0  0.0    0   0 ? I  00:22 0:00 [kworker/u258:1-events_power_efficient]
root   1454  0.0  0.0    0   0 ? I  00:30 0:00 [kworker/0:2]
root   1455  0.0  0.0    0   0 ? I  00:32 0:00 [kworker/u258:0-events_power_efficient]
root   1483  0.0  0.0    0   0 ? I< 00:35 0:00 [kworker/R-tls-s]
root   1487  0.0  0.0    0   0 ? I  00:35 0:00 [kworker/1:0-cgroup_destroy]
root   1488  0.0  0.0    0   0 ? I  00:35 0:00 [kworker/u257:1-events_power_efficient]
root   1503  0.0  0.0    0   0 ? I  00:40 0:00 [kworker/u258:2-events_unbound]
maria06 1505  50.0  0.2 10884  4480 tty1 R+ 00:42 0:00 ps aux
```

processes.png

Task 6 – Users and account verification (no sudo group change)

```
maria06@maria076:~$ sudo adduser lab4user
[sudo] password for maria06:
info: Adding user `lab4user' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `lab4user' (1001) ...
info: Adding new user `lab4user' (1001) with group `lab4user (1001)' ...
info: Creating home directory `/home/lab4user' ...
info: Copying files from `/etc/skel' ...
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 []: maria
  Room Number []: 3
  Work Phone []: 3224
  Home Phone []: 5433
  Other []: 2245
Is the information correct? [Y/n] y
info: Adding new user `lab4user' to supplemental / extra groups `users' ...
info: Adding user `lab4user' to group `users' ...
```

adduser_lab4user.png

```
maria06@maria076:~$ getent passwd lab4user
lab4user:x:1001:1001:maria,3,3224,5433,2245:/home/lab4user:/bin/bash
```

lab4user_passwd.png

```
maria06@maria076:~$ su - lab4user
su: invalid option -- 'a'
Try 'su --help' for more information.
```

su_lab4user.png

```
maria06@maria076:~$ sudo whoami
root
```

sudo_whoami.png

```
Ubuntu 24.04.3 LTS maria076 tty1
maria076 login:
```

exit_back.png

```
maria06@maria076:~$ sudo deluser --remove-home lab4user
[sudo] password for maria06:
info: Looking for files to backup/remove ...
info: Removing files ...
info: Removing crontab ...
info: Removing user `lab4user' ...
maria06@maria076:~$ _
```

deluser.png