Assignment # 01

Real-Life Industry Use Cases of Basic Linux Commands

Name   Maheen Abdul Razzaq

Task 01

· whoami
➤Displays the current logged-in user — here, it's ubuntu.

· uname -a
➤Shows system information, including kernel version, system architecture, and OS — confirms it's an Ubuntu Linux EC2 instance.

· mkdir projectA
➤Creates a new directory named projectA.

· ls -l
➤Lists directory contents in long format, showing permissions, owner, group, and size — confirms projectA was created.

· touch projectA/README.txt
➤Creates an empty file named README.txt inside projectA.

· echo "Welcome to Project A" > projectA/README.txt
➤Writes the string into the README.txt file (overwrites if it already existed).

· cat projectA/README.txt
➤Displays the contents of README.txt — confirms your message was written.

```
ubuntu@ip-172-31-46-70:~$ whoami
ubuntu
[ubuntu@ip-172-31-46-70:~$ uname -a
Linux ip-172-31-46-70 6.8.0-1024-aws #26~22.04.1-Ubuntu SMP Wed Feb 19 06:54:57 UTC 2025 x86_64 x86_64 x86_64 GNU/Linux
ubuntu@ip-172-31-46-70:~$ mkdir projectA
[ubuntu@ip-172-31-46-70:~$ ls -l
[total 4
drwxrwxr-x 2 ubuntu ubuntu 4096 May  9 18:20 projectA
ubuntu@ip-172-31-46-70:~$ touch projectA/README.txt
[ubuntu@ip-172-31-46-70:~$ echo "Welcome to Project A" > projectA/README.txt
[ubuntu@ip-172-31-46-70:~$ cat projectA/README.txt
Welcome to Project A
```

Task 02

· sudo groupadd developers
➤Creates a new group called developers.

· sudo useradd -m -G developers john
➤Successfully adds the user john to the developers group after creating it.

· sudo passwd john
➤Sets a password for the new user john.

· id john
➤Shows the user ID, primary group, and secondary groups for user john — confirms he's part of developers.

· sudo chown :developers projectA
➤Changing group ownership of projectA to developers.

· sudo chmod 770 projectA
➤Sets directory permissions: owner and group have full access; others have none.

· ls -ld projectA
➤Displays detailed info about the projectA directory itself — confirms ownership to user john and group developers.

```
ubuntu@ip-172-31-46-70:~$ sudo groupadd developers
ubuntu@ip-172-31-46-70:~$ sudo useradd -m -G developers john
[ubuntu@ip-172-31-46-70:~$ sudo passwd john
[New password:
[Retype new password:
[passwd: password updated successfully
 ubuntu@ip-172-31-46-70:~$ id john
[uid=1001(john) gid=1002(john) groups=1002(john),1001(developers)
 ubuntu@ip-172-31-46-70:~$ sudo chown :developers /projectA
[chown: cannot access '/projectA': No such file or directory
 ubuntu@ip-172-31-46-70:~$ sudo chown :developers projectA
[ubuntu@ip-172-31-46-70:~$ sudo chmod 770 projectA
[ubuntu@ip-172-31-46-70:~$ ls -ld projectA
[drwxrwx--- 2 ubuntu developers 4096 May  9 18:20 projectA
```

Task 03

sudo chown john:developers projectA
➤Changes ownership to user john and group developers.

```
ubuntu@ip-172-31-46-70:~$ sudo chown john:developers projectA
ubuntu@ip-172-31-46-70:~$ ls -ld projectA
drwxrwx--- 2 john developers 4096 May  9 18:20 projectA
```

Task 04

uptime
➤Shows system uptime, number of users, and system load averages.

df -h
➤Displays disk usage in human-readable format — shows /dev/root has   5.9G free.

free -m
➤Displays memory usage in megabytes — about 614 MB available memory.

ps aux --sort=-%mem | head -5
➤Lists top 5 memory-consuming processes running on the system.

```
ubuntu@ip-172-31-46-70:~$ uptime
 18:29:54 up  1:34,  1 user,  load average: 0.00, 0.00, 0.00
ubuntu@ip-172-31-46-70:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       7.6G  1.7G  5.9G  23% /
tmpfs           479M     0  479M   0% /dev/shm
tmpfs           192M  856K  191M   1% /run
tmpfs           5.0M     0  5.0M   0% /run/lock
/dev/xvda15     105M  6.1M   99M   6% /boot/efi
tmpfs            96M  4.0K   96M   1% /run/user/1000
ubuntu@ip-172-31-46-70:~$ free -m
               total        used        free      shared  buff/cache   available
Mem:             957         189         304           0         463         614
Swap:              0           0           0
ubuntu@ip-172-31-46-70:~$ ps aux --sort=-%mem | head -5
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         403  0.0  3.3 1329508 33276 ?       Ssl  16:55   0:01 /usr/lib/snapd/snapd
root         165  0.0  2.7 289316 27392 ?        SLsl 16:55   0:00 /sbin/multipathd -d -s
root         497  0.0  2.2 110132 21760 ?        Ssl  16:55   0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown -
-wait-for-signal
root         399  0.0  1.9  33064 19444 ?        Ss   16:55   0:00 /usr/bin/python3 /usr/bin/networkd-dispatcher --run-startup-triggers
```