

LINUX COMMANDS TASK 03 (11-02-2025)

- 1) Create user with name Techie and provide sudo access to user:

```
narendar@ubuntu:/$ sudo useradd techie1
narendar@ubuntu:/$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
/nologin
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
hari:x:1001:1004:./home/hari:/bin/sh
techie1:x:1002:1005:./home/techie1:/bin/sh
```

- 2) Navigate to the home directory:

```
narendar@ubuntu:~$ cd ..
narendar@ubuntu:/home$
```

- 3) Create a new directory:

```
root@ubuntu:~# mkdir xyz1
root@ubuntu:~# ll
```

- 4) List the contents of a directory:

```
root@ubuntu:~# ll
total 68
drwx----- 8 root      root 4096 Feb 11 06:53 ./
drwxr-xr-x 25 root      root 4096 Feb 11 06:42 ../
-rw-r--r--  1 root      root   19 Feb 10 14:03 alphabet
-rw-----  1 root      root 1709 Feb 10 09:39 .bash_history
-rw-r--r--  1 root      root 3106 Apr 22  2024 .bashrc
drwx----- 2 root      root 4096 Aug 27 15:39 .cache/
drwx----- 3 root      root 4096 Feb  9 11:28 .config/
-rw---xrw-  1 narendar root   20 Feb 10 16:26 file1*
-rw-r--r--  1 narendar root    0 Feb  9 11:22 file2
-rw-----  1 root      root   20 Feb 10 06:18 .lessht
-rw-r--r--  1 root      root 3170 Feb 10 14:26 mytask
-rw-r--r--  1 root      root  161 Apr 22  2024 .profile
drwx----- 6 root      root 4096 Feb  4 06:21 snap/
drwx----- 2 root      root 4096 Feb  4 06:21 .ssh/
-r-xr-xr-x  1 root      root 7049 Feb  4 06:20 vboxpostinstall.sh*
drwxr-xr-x  2 root      root 4096 Feb 11 06:47 xyz/
drwxr-xr-x  2 root      root 4096 Feb 11 06:53 xyz1/
```

5) Change the current directory:

```
root@ubuntu:~# pwd
/root
root@ubuntu:~# cd xyz
root@ubuntu:~/xyz#
```

6) Create a new empty file :

```
root@ubuntu:~# touch abc1
```

7) View the contents of a file:

```
root@ubuntu:~# touch abc1
root@ubuntu:~# ls
abc1  alphabet  file1  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~#
```

8) Copy a file to another location:

```
root@ubuntu:~# ls
abc1  alphabet  file1  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# cp abc1 xyz1
root@ubuntu:~# cd xyz1
root@ubuntu:~/xyz1# ls
abc1
root@ubuntu:~/xyz1#
```

9) Move a file to another location

```
root@ubuntu:~# ls
abc1  alphabet  file1  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# cp abc1 xyz1
root@ubuntu:~# cd xyz1
root@ubuntu:~/xyz1# ls
abc1
root@ubuntu:~/xyz1# cd ..
root@ubuntu:~# mv file1 abc1
root@ubuntu:~# ls
abc1  alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~#
```

10)Rename a file:

```
root@ubuntu:~# ls
abc1  alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# mv abc1 abc2
root@ubuntu:~# ls
abc2  alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~#
```

11) Delete a file:

```
root@ubuntu:~# ls
abc2  alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# rm abc2
root@ubuntu:~# ls
alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~#
```

12) Grant or revoke permissions on a file or directory:

```
root@ubuntu:~# ll
total 64
drwx----- 8 root    root 4096 Feb 11 07:11 ./
drwxr-xr-x 25 root    root 4096 Feb 11 06:42 ../
-rw-r--r-- 1 root    root  19 Feb 10 14:03 alphabet
-rw----- 1 root    root 1709 Feb 10 09:39 .bash_history
-rw-r--r-- 1 root    root 3106 Apr 22 2024 .bashrc
drwx----- 2 root    root 4096 Aug 27 15:39 .cache/
drwx----- 3 root    root 4096 Feb  9 11:28 .config/
-rw-r--r-- 1 narendar root   0 Feb  9 11:22 file2
```

```
root@ubuntu:~# chmod 777 file2
root@ubuntu:~# ll
total 64
drwx----- 8 root    root 4096 Feb 11 07:11 ./
drwxr-xr-x 25 root    root 4096 Feb 11 06:42 ../
-rw-r--r-- 1 root    root  19 Feb 10 14:03 alphabet
-rw----- 1 root    root 1709 Feb 10 09:39 .bash_history
-rw-r--r-- 1 root    root 3106 Apr 22 2024 .bashrc
drwx----- 2 root    root 4096 Aug 27 15:39 .cache/
drwx----- 3 root    root 4096 Feb  9 11:28 .config/
-rwxrwxrwx 1 narendar root   0 Feb  9 11:22 file2*
```

13) View the current date and time:

```
root@ubuntu:~# date
Tue Feb 11 07:20:15 AM UTC 2025
```

14) Check the system uptime:

```
root@ubuntu:~# uptime
07:22:00 up 1 day, 23:14,  2 users,  load average: 0.15, 0.04, 0.01
root@ubuntu:~#
```

15) View the running processes:

```
root@ubuntu:~# ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
root           1         0  0 Feb09 ?        00:01:12 /usr/lib/systemd/systemd --s
root           2         0  0 Feb09 ?        00:00:00 [kthreadd]
root           3         2  0 Feb09 ?        00:00:00 [pool_workqueue_release]

root          41773         2  0 07:20 ?        00:00:00 [kworker/0:3]
root          41778       41499  0 07:23 pts/4    00:00:00 ps -ef
```

16) Kill a running process:

```
root@ubuntu:~# kill -9 41778
```

17) Install a package using the package manager (e.g., apt or yum):

```
root@ubuntu:~# apt install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7.1).
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 219 not upgraded.
```

18) Update the system packages:

```
root@ubuntu:~# sudo apt update
Warning: The unit file, source configuration file or drop-ins of apt-news.servi
e changed on disk. Run 'systemctl daemon-reload' to reload units.
Warning: The unit file, source configuration file or drop-ins of esm-cache.servi
ce changed on disk. Run 'systemctl daemon-reload' to reload units.
Hit:1 http://in.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [8,
```

19) Create a symbolic link:

```
root@ubuntu:~# ls
alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# ln -s /home/user/file2 shortlink1
root@ubuntu:~# ls
alphabet  file2  mytask  shortlink1  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~#
```

20) Search for files using the find command:

```
root@ubuntu:~# ls
alphabet  file2  mytask  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# ln -s /home/user/file2 shortlink1
root@ubuntu:~# ls
alphabet  file2  mytask  shortlink1  snap  vboxpostinstall.sh  xyz  xyz1
root@ubuntu:~# find /home -name file2
/home/narendar/file2
root@ubuntu:~#
```

21) Compress and decompress files using tar:

Compress

```
narendar@ubuntu:~/Desktop$ cd
narendar@ubuntu:~$ mkdir test_tar
narendar@ubuntu:~$ cd test_tar/
narendar@ubuntu:~/test_tar$ touch a b c d e f
narendar@ubuntu:~/test_tar$ ls
a b c d e f
narendar@ubuntu:~/test_tar$ tar cvf techie.tar test_tar/_
tar: test_tar/_: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
narendar@ubuntu:~/test_tar$ tar cvf techie.tar test_tar/
tar: test_tar: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
narendar@ubuntu:~/test_tar$ cd ..
narendar@ubuntu:~$ tar cvf techie.tar test_tar/
test_tar/
test_tar/techie.tar
test_tar/c
test_tar/a
test_tar/b
test_tar/e
test_tar/d
test_tar/f
narendar@ubuntu:~$ sudo cp techie.tar /opt/
[sudo] password for narendar:
narendar@ubuntu:~$ cd /opt/
narendar@ubuntu:/opt$ ls
techie.tar
```

Decompress

```
narendar@ubuntu:~$ sudo cp techie.tar /opt/
[sudo] password for narendar:
narendar@ubuntu:~$ cd /opt/
narendar@ubuntu:/opt$ ls
techie.tar
narendar@ubuntu:/opt$ sudo tar xvf techie.tar
test_tar/
test_tar/techie.tar
test_tar/c
test_tar/a
test_tar/b
test_tar/e
test_tar/d
test_tar/f
narendar@ubuntu:/opt$ ls
techie.tar test_tar
narendar@ubuntu:/opt$ cd test_tar
narendar@ubuntu:/opt/test_tar$ ls
a b c d e f techie.tar
```

22) Monitor system resources with top or htop:

```
top - 07:57:22 up 1 day, 23:49,  2 users,  load average: 0.00, 0.00, 0.00
Tasks: 257 total,  1 running, 256 sleeping,  0 stopped,  0 zombie
%Cpu(s):  1.7 us,  0.7 sy,  0.0 ni, 97.2 id,  0.0 wa,  0.0 hi,  0.3 si,  0.0 st
MiB Mem : 1968.2 total,  75.4 free, 1808.3 used,  293.0 buff/cache
MiB Swap:  0.0 total,  0.0 free,  0.0 used. 159.9 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
34539	narendar	20	0	3497388	296580	47920	S	2.0	14.7	3:24.70	gnome-s+
38002	narendar	20	0	624644	31704	19472	S	0.3	1.6	0:18.23	gnome-t+
39136	systemd+	20	0	17688	3328	2432	S	0.3	0.2	0:09.06	systemd+
41541	root	20	0	0	0	0	I	0.3	0.0	0:01.03	kworker+
1	root	20	0	23220	8404	3584	S	0.0	0.4	1:13.42	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.03	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pool_wo+

23) Create and manage user groups:

```
root@ubuntu:~# groupadd group1
root@ubuntu:~# cat /etc/group
```

```
group1:x:1004:
```

```
root@ubuntu:~#
```

24) Set up SSH password less authentication:

```
naren@narendar MINGW64 /d/downloads
$ ssh ec2-user@3.7.45.230
Last login: Sun Feb 23 17:28:31 2025 from 45.127.59.91

#_
~\##### Amazon Linux 2
~\#####\
~\####| AL2 End of Life is 2026-06-30.
~\#/
~\V~'-'>
~
~..-.-
~/_/_/_/
~/m/'_/_/_/

A newer version of Amazon Linux is available!

Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-12-72 ~]$
```

25) Monitor log files using tail or grep:

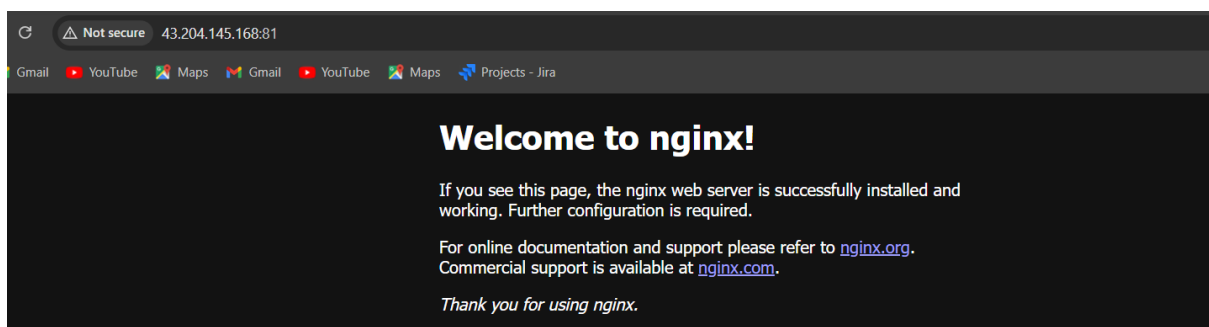
```

arendar@ubuntu:~/Desktop$ tail -f /var/log/syslog
2025-02-11T13:52:30.807952+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 34 with keysym 34 (keycode d).
2025-02-11T13:52:30.807964+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 35 with keysym 35 (keycode e).
2025-02-11T13:52:30.807976+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 36 with keysym 36 (keycode f).
2025-02-11T13:52:30.807988+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 33 with keysym 33 (keycode c).
2025-02-11T13:52:30.808008+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 39 with keysym 39 (keycode 12).
2025-02-11T13:52:30.808021+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 33 with keysym 33 (keycode c).
2025-02-11T13:52:30.808032+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 37 with keysym 37 (keycode 10).
2025-02-11T13:52:30.808044+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 35 with keysym 35 (keycode e).
2025-02-11T13:52:30.808056+00:00 ubuntu gnome-shell[1893]: Window manager warnin
g: Overwriting existing binding of keysym 39 with keysym 39 (keycode 12).
2025-02-11T13:52:41.742774+00:00 ubuntu systemd[1]: fprintd.service: Deactivated
successfully.

```


26) Set up a web server (e.g., Apache or Nginx):

```
root@ubuntu:~# sudo apt install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7.1).
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 227 not upgraded.
root@ubuntu:~# ps -ef | grep nginx
root      43398      41499  0 09:56 pts/4      00:00:00 grep --color=auto nginx
```



27) Configure and secure a MySQL Database:

```
mysql57-community-release.noarch 0:el7-11

Complete!
[root@ip-172-31-10-255 ~]# sudo yum install -y mysql-community-server
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
63 packages excluded due to repository priority protections
Package mysql-community-server-5.7.44-1.el7.x86_64 already installed and latest version
Nothing to do
[root@ip-172-31-10-255 ~]# sudo systemctl start mysqld
^C
[root@ip-172-31-10-255 ~]# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 4
Server version: 5.5.68-MariaDB MariaDB Server

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owners.

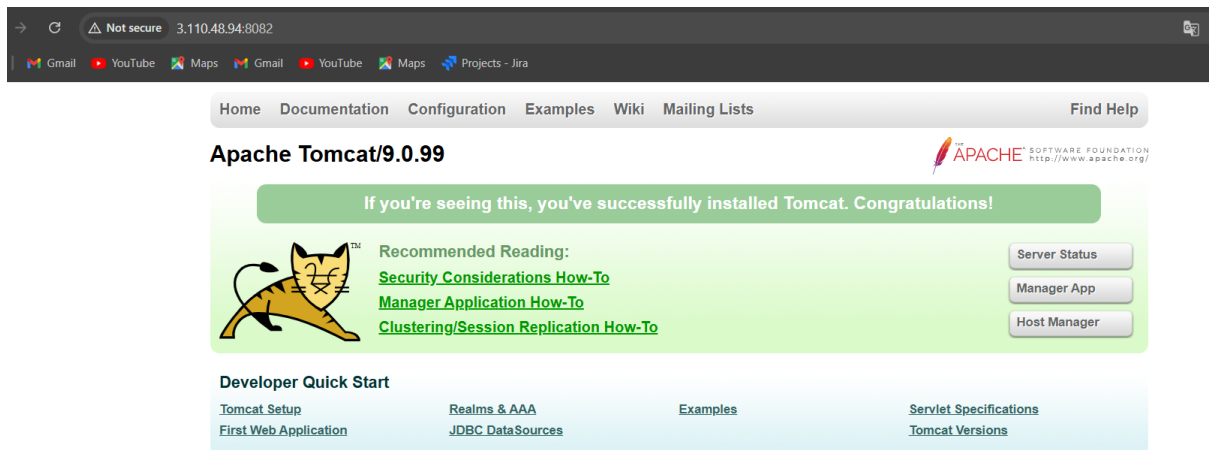
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
```

28) Set up a Application Server (e.g.,Apache Tomcat):

```
narendar@ubuntu:~/Desktop$ sudo apt install httpd
[sudo] password for narendar:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package httpd is a virtual package provided by:
  merecat 2.31+git20220513+ds-4.1ubuntu0.1
  nginx 1.24.0-2ubuntu7.1
  apache2 2.4.58-1ubuntu8.5
  yaws 2.1.1+dfsg-2
  webfs 1.21+ds1-12build3
  tntnet 3.0-3.1build1
  mini-httpd 1.30-8build2
  micro-httpd 20140814-2.1
  lighttpd 1.4.74-1ubuntu3
You should explicitly select one to install.

E: Package 'httpd' has no installation candidate
```



29) create a service file for Apache Tomcat.(Should execute by using systemctl command)

```
[ec2-user@ip-172-31-83-126 ~]$ sudo su -
cat login: wed Feb 19 09:53:52 UTC 2023 on pts/1
[root@ip-172-31-83-126 ~]$ systemctl status tomcat
tomcat.service - Apache Tomcat
Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; vendor preset: disabled)
Active: active (running) since wed 2023-02-19 10:22:18 UTC; 11min ago
Process: 4126 ExecStart=/opt/apache-tomcat-9.0.100/bin/startup.sh (code=exited, status=0/SUCCESS)
Main PID: 4140 (java)
CGroup: /system.slice/tomcat.service
└─4140 /usr/bin/java -Djava.util.logging.config.file=/opt/apache-tomcat-9.0.100/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djdk.tls.ephemeralDHKeyS...

feb 19 10:22:18 ip-172-31-83-126.ec2.internal systemd[1]: Starting Apache Tomcat...
feb 19 10:22:18 ip-172-31-83-126.ec2.internal startup.sh[4126]: Tomcat started.
feb 19 10:22:18 ip-172-31-83-126.ec2.internal systemd[1]: Started Apache Tomcat.
[root@ip-172-31-83-126 ~]$
```

30) Print specific columns from a delimited file:

```
narendar@ubuntu:~/Desktop$ touch data.csv
narendar@ubuntu:~/Desktop$ vi data.csv
narendar@ubuntu:~/Desktop$ cat data.csv
na      age      loca
a        2        N
B        3        C
X        5        T
narendar@ubuntu:~/Desktop$ cut -d',' -f1,3 data.csv
na      age      loca
a        2        N
B        3        C
X        5        T
narendar@ubuntu:~/Desktop$
```

31) Filter and print lines based on a specific pattern or condition:

```
narendar@ubuntu:~/Desktop$ vi abc.txt
narendar@ubuntu:~/Desktop$ cat abc.txt
i apple
u apple
he apple
she arange

narendar@ubuntu:~/Desktop$ grep "apple" abc.txt
i apple
u apple
he apple
narendar@ubuntu:~/Desktop$
```

32) Calculate and print the average, sum, or other statistics of a column:

```
narendar@ubuntu:~/Desktop$ vi f6
narendar@ubuntu:~/Desktop$ awk '{sum += $1} end {print sum}' f6
narendar@ubuntu:~/Desktop$ cat f6
```

33) Perform string manipulation, such as extracting substrings or changing case:

```
MINGW64:/c/Users/naren
#!/bin/bash

# Define a sample string
text="Hello, World! Welcome to Bash scripting."

echo "Original Text: $text"

# 1. Extracting a substring (Extract 'World' from the string)
substring=${text:7:5} # Extract 5 characters starting from index 7
echo "Extracted Substring: $substring"

# 2. Convert to uppercase
uppercase=${text^^}
echo "Uppercase: $uppercase"

# 3. Convert to lowercase
lowercase=${text,,}
echo "Lowercase: $lowercase"

# 4. Replacing text (Replace 'Bash' with 'Linux')
new_text=${text/Bash/Linux}
echo "Replaced Text: $new_text"

# 5. Splitting a string by space
IFS=' ' read -ra words <<< "$text"
echo "Words in the String:"
for word in "${words[@]}"; do
    echo "$word"
done

# 6. Removing leading and trailing spaces
trimmed=$(echo "$text" | xargs)
echo "Trimmed Text: '$trimmed'"

# 7. Checking if a substring exists
if [[ "$text" == *"Bash"* ]]; then
    echo "The word 'Bash' exists in the text."
fi

# 8. Finding position of a substring
position=$(expr index "$text" "World")
echo "Position of 'World': $position"

# 9. Reverse the string
reversed=$(echo "$text" | rev)
echo "Reversed Text: $reversed"

# 10. Get the length of the string
length=${#text}
echo "Length of the Text: $length"
```

```
MINGW64:/c/Users/naren
naren@narendar MINGW64 ~ (master)
$ vi string.bash

naren@narendar MINGW64 ~ (master)
$ chmod 777 string.bash

naren@narendar MINGW64 ~ (master)
$ bash string.bash
Original Text: Hello, World! Welcome to Bash scripting.
Extracted Substring: World
Uppercase: HELLO, WORLD! WELCOME TO BASH SCRIPTING.
Lowercase: hello, world! welcome to bash scripting.
Replaced Text: Hello, World! Welcome to Linux scripting.
Words in the String:
Hello,
World!
Welcome
to
Bash
scripting.
Trimmed Text: 'Hello, World! Welcome to Bash scripting.'
The word 'Bash' exists in the text.
Position of 'World': 3
string.bash: line 45: rev: command not found
Reversed Text:
Length of the Text: 40

naren@narendar MINGW64 ~ (master)
$ |
```

34) Count the occurrences of a specific pattern in a file:

```
narendar@ubuntu:~/Desktop$ vi f5
narendar@ubuntu:~/Desktop$ cat f5
1 apple su
2 apple na
3 apple ha
narendar@ubuntu:~/Desktop$ grep -0 "pattern" f5 | wc -l
0
```

35) Sort lines based on a specific field or column:

```
narendar@ubuntu:~/Desktop$ vi f3
narendar@ubuntu:~/Desktop$ cat f3
3      a      30
1      b      50
2      c      20
2      c      20
narendar@ubuntu:~/Desktop$ sort -k1,1n f3
1      b      50
2      c      20
2      c      20
3      a      30
narendar@ubuntu:~/Desktop$ sort -k2,2 f3
3      a      30
1      b      50
2      c      20
2      c      20
narendar@ubuntu:~/Desktop$ sort -k3,3n f3
2      c      20
2      c      20
3      a      30
1      b      50
narendar@ubuntu:~/Desktop$
```

36) Merge multiple files based on a common field or column:

```
narendar@ubuntu:~/Desktop$ touch f1 f2
narendar@ubuntu:~/Desktop$ ls
abc  dirc1  f1  f2  file1  naren
narendar@ubuntu:~/Desktop$ vi f1
narendar@ubuntu:~/Desktop$ vi f1
narendar@ubuntu:~/Desktop$ vi f1
narendar@ubuntu:~/Desktop$ cat f1
id      name
1       a
2       b
3       c
narendar@ubuntu:~/Desktop$ vi f2
narendar@ubuntu:~/Desktop$ cat f2
id      age
1       25
2       30
3       35
narendar@ubuntu:~/Desktop$ join -1 1 -2 1 <(sort f1) <(sort f2)
1 a 25
2 b 30
3 c 35
id name age
narendar@ubuntu:~/Desktop$
```


37) Substitute text in a file using search and replace:

```
narendar@ubuntu:~/Desktop$ vi f4
narendar@ubuntu:~/Desktop$ cat f4
apple
narendar@ubuntu:~/Desktop$ sed -i 's/apple/banana/g' f4
narendar@ubuntu:~/Desktop$ cat f4
banana
narendar@ubuntu:~/Desktop$
```

38) Delete specific lines based on a pattern or line number:

```
narendar@ubuntu:~/Desktop$ ls
abc  dirc1  file1  naren
narendar@ubuntu:~/Desktop$ cat naren
hi
iam
narendar

narendar@ubuntu:~/Desktop$ sed '2d' naren
hi
narendar

narendar@ubuntu:~/Desktop$
```

39) Append or insert text before or after a specific pattern or line:

```
narendar@ubuntu:~/Desktop$ ls
abc  dirc1  file1
narendar@ubuntu:~/Desktop$ vi naren
narendar@ubuntu:~/Desktop$ sed '3i hello' naren
hi
iam
hello
narendar
```

40) Print only specific lines from a file:

```
root@ubuntu:~# ls
alphabet  file2  mytask  shortlink1  s
root@ubuntu:~# cat alphabet
a
b
c
d
e
f
g
a
b

root@ubuntu:~# sed -n '5p' alphabet
e
root@ubuntu:~#
```

41) Copy file from linux to windows machine

42) 5 use cases for AWK and 5 use cases for SED :

→AWK 5 use cases:

```
MINGW64:/c/Users/naren
echo "Original File Content:"
cat sample.txt
echo "-----"

##### AWK USE CASES #####

echo "### AWK Use Cases ###"

# 1. Print the second column (First Names)
echo "1. Extract First Names:"
awk -F',' '{print $2}' sample.txt
echo "-----"

# 2. Print lines where the age is greater than 25
echo "2. People older than 25:"
awk -F',' '$4 > 25 {print $2, $3, $4}' sample.txt
echo "-----"

# 3. Add a header and format output
echo "3. Table Format with Header:"
awk -F',' 'BEGIN {print "ID | First Name | Last Name | Age | Job"} {print $1, $2, $3, $4, $5}' sample.txt
echo "-----"

# 4. Calculate the average age
echo "4. Average Age:"
awk -F',' '{sum+=$4; count++} END {print "Average Age:", sum/count}' sample.txt
echo "-----"

# 5. Replace "Engineer" with "Software Developer"
echo "5. Replace 'Engineer' with 'Software Developer':"
awk -F',' 'BEGIN {OFS=","} {gsub("Engineer", "Software Developer", $5); print}' sample.txt
echo "-----"
```

```
naren@narendar MINGW64 ~ (master)
$ vi string.bash

naren@narendar MINGW64 ~ (master)
$ vi sedawk.bash

naren@narendar MINGW64 ~ (master)
$ chmod 777 sedawk.bash

naren@narendar MINGW64 ~ (master)
$ ./sedawk.bash
Original File Content:
1,John,Doe,25,Engineer
2,Jane,Smith,30,Doctor
3,Mike,Johnson,22,Artist
4,Emily,Davis,28,Writer
5,Chris,Brown,35,Teacher
-----
### AWK Use Cases ###
1. Extract First Names:
John
Jane
Mike
Emily
Chris
-----
2. People older than 25:
Jane Smith 30
Emily Davis 28
Chris Brown 35
-----
3. Table Format with Header:
ID | First Name | Last Name | Age | Job
1 John Doe 25 Engineer
2 Jane Smith 30 Doctor
3 Mike Johnson 22 Artist
4 Emily Davis 28 Writer
5 Chris Brown 35 Teacher
-----
4. Average Age:
Average Age: 28
-----
5. Replace 'Engineer' with 'Software Developer':
1,John,Doe,25,Software Developer
2,Jane,Smith,30,Doctor
3,Mike,Johnson,22,Artist
4,Emily,Davis,28,Writer
5,Chris,Brown,35,Teacher
```

→SED 5 use cases:

```
##### SED USE CASES #####

echo "### SED Use Cases ###"

# 1. Replace 'Doctor' with 'Surgeon' in the file
echo "1. Replace 'Doctor' with 'Surgeon':"
sed 's/Doctor/Surgeon/' sample.txt
echo "-----"

# 2. Delete lines containing 'Artist'
echo "2. Remove lines containing 'Artist':"
sed '/Artist/d' sample.txt
echo "-----"

# 3. Print only the second line
echo "3. Print only the second line:"
sed -n '2p' sample.txt
echo "-----"

# 4. Add 'Title: ' at the beginning of each line
echo "4. Add 'Title:' to each line:"
sed 's/^/Title: /' sample.txt
echo "-----"

# 5. Remove the last column (job titles)
echo "5. Remove last column:"
sed 's/,([^\,]*)$//' sample.txt
echo "-----"

# Clean up sample file
rm sample.txt
```

```
### SED Use Cases ###
1. Replace 'Doctor' with 'Surgeon':
1,John,Doe,25,Engineer
2,Jane,Smith,30,Surgeon
3,Mike,Johnson,22,Artist
4,Emily,Davis,28,Writer
5,Chris,Brown,35,Teacher
-----
2. Remove lines containing 'Artist':
1,John,Doe,25,Engineer
2,Jane,Smith,30,Doctor
4,Emily,Davis,28,Writer
5,Chris,Brown,35,Teacher
-----
3. Print only the second line:
2,Jane,Smith,30,Doctor
-----
4. Add 'Title:' to each line:
Title: 1,John,Doe,25,Engineer
Title: 2,Jane,Smith,30,Doctor
Title: 3,Mike,Johnson,22,Artist
Title: 4,Emily,Davis,28,Writer
Title: 5,Chris,Brown,35,Teacher
-----
5. Remove last column:
1,John,Doe,25
2,Jane,Smith,30
3,Mike,Johnson,22
4,Emily,Davis,28
5,Chris,Brown,35
-----
```