

Linux Class -2

- I have created techie user and provided moreover I also provided sudo access and then switched to techie

```
vboxuser@ubuntu:~/Desktop$ sudo useradd techie
[sudo] password for vboxuser:
Sorry, try again.
[sudo] password for vboxuser:
vboxuser@ubuntu:~/Desktop$ ls
Arjuman  Arjumand  Class  d1  Devops  word
vboxuser@ubuntu:~/Desktop$ passwd techie
passwd: You may not view or modify password information for techie.
vboxuser@ubuntu:~/Desktop$ sudo passwd techie
sudo: passwd: command not found
vboxuser@ubuntu:~/Desktop$ sudo passwd techie
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/systematic
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Have exhausted maximum number of retries for service
passwd: password unchanged
vboxuser@ubuntu:~/Desktop$ sudo passwd techie
New password:
Retype new password:
passwd: password updated successfully
vboxuser@ubuntu:~/Desktop$ find/.name sudoers
bash: find/.name: No such file or directory
```

- While providing switching to techie I have faced an issue because the user was created without home directory option. Then I have created home directory, change ownership and given access then switch to techie using su command.

```

Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
passwd: Have exhausted maximum number of retries for service
passwd: password unchanged
vboxuser@ubuntu:~/Desktop$ sudo passwd techie
New password:
Retype new password:
passwd: password updated successfully
vboxuser@ubuntu:~/Desktop$ find/.name sudoers
bash: find/.name: No such file or directory
vboxuser@ubuntu:~/Desktop$ sudo visudo
visudo: /etc/sudoers.tmp unchanged
vboxuser@ubuntu:~/Desktop$ sudo visudo
vboxuser@ubuntu:~/Desktop$ su -techie
su: invalid option -- 't'
Try 'su --help' for more information.
vboxuser@ubuntu:~/Desktop$ su - techie
Password:
su: warning: cannot change directory to /home/techie: No such file or directory
$ exit
vboxuser@ubuntu:~/Desktop$ sudo mkdir /home/techie
vboxuser@ubuntu:~/Desktop$ techie:techie/home/techie
bash: techie:techie/home/techie: No such file or directory
vboxuser@ubuntu:~/Desktop$ sudo chown techie /home/techie
vboxuser@ubuntu:~/Desktop$ sudo chom 755/home/techie
sudo: chom: command not found
vboxuser@ubuntu:~/Desktop$ su - techie
Password:

```

- Created new file called AArr copied f
- Copied file from called world to home using cp command, the move to vboxer using mv command then deleted using rm -rf command
- Used ll, ls pwd, ltr, vi, commands
- Renamed file world to word

```

vboxuser@ubuntu:~$ cat world

hello team
vboxuser@ubuntu:~$ cp world /home/
cp: cannot create regular file '/home/world': Permission denied
vboxuser@ubuntu:~$ sudo cp world /home/
[sudo] password for vboxuser:
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos world
vboxuser@ubuntu:~$ cd ..
vboxuser@ubuntu:/home$ ls
techie vboxuser world
vboxuser@ubuntu:/home$ mv -rf world /home/vboxuser
mv: invalid option -- 'r'
Try 'mv --help' for more information.
vboxuser@ubuntu:/home$ mv world /home/vboxuser
mv: cannot move 'world' to '/home/vboxuser/world': Permission denied
vboxuser@ubuntu:/home$ sudo mv world /home/vboxuser/
vboxuser@ubuntu:/home$ ls
techie vboxuser
vboxuser@ubuntu:/home$ cd vboxuser
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos world
vboxuser@ubuntu:~$ mv world word
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos word
vboxuser@ubuntu:~$ rm -rf word
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ ll

```

Above image I have used CP, ls, mv, rm -rf commands

```

B
Hello world
vboxuser@ubuntu:~$ uptime
13:25:08 up 1 day, 46 min, 1 user, load average: 0.07, 0.03, 0.08
vboxuser@ubuntu:~$ pwd
/home/vboxuser
vboxuser@ubuntu:~$ ls
AArr AArr_link cat Desktop Documents Downloads hello hello.tar Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ join AArr cat > merged
vboxuser@ubuntu:~$ ls
AArr cat Documents hello merged Pictures snap Videos
AArr_link Desktop Downloads hello.tar Music Public Templates
vboxuser@ubuntu:~$ grep 'a' cat
Baa
Ba
Ba
vboxuser@ubuntu:~$ echo "z" >>cat
vboxuser@ubuntu:~$ cat cat
A
Ad

```

In above image I have used time, grep, echo, cat commands to append and check alphabets.

Below image ive used vi, head,teal commands

```
vboxuser@ubuntu:~$ pwd
/home/vboxuser
vboxuser@ubuntu:~$ ls
AArr  AArr_link  cat  Desktop  Documents  Downloads  hello  hello.tar  Musi
vboxuser@ubuntu:~$ cat hello
vboxuser@ubuntu:~$ cat cat
Hello world
vboxuser@ubuntu:~$ top -3 cat
top: invalid option -- '3'
vboxuser@ubuntu:~$ head -3 cat
Hello world
vboxuser@ubuntu:~$ vi cat
vboxuser@ubuntu:~$ head -3 cat
A
Ad
Ac
vboxuser@ubuntu:~$ tail cat
Ad
Ac
Ab
Baa
Ba
Ba
B
B
B
Hello world
vboxuser@ubuntu:~$
```

Used tail -f command to continuously monitoring

```
archive.zip  ARJ.txt.xz  Documents  Merged  Public  Videos
vboxuser@ubuntu:~$ tail -f cat
Ac
Ab
Baa
Ba
Ba
B
B
B
Hello world
z
g

```

```

vboxuser@ubuntu:/home$
vboxuser@ubuntu:/home$ ls
techie vboxuser
vboxuser@ubuntu:/home$ cd vboxuser
vboxuser@ubuntu:~$ date
Wed Oct 29 12:28:14 PM UTC 2025
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ chmod 777 hello
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ ll
total 96
drwxr-x--- 16 vboxuser vboxuser 4096 Oct 29 12:15 ./
drwxr-xr-x  4 root      root    4096 Oct 29 12:14 ../
-rw-rw-r--  1 vboxuser vboxuser   0 Oct 29 11:25 AArr
-rw-rw-r--  1 vboxuser vboxuser  12 Jul  9 12:40 .Arjumandd
-rw-----  1 vboxuser vboxuser 12288 Jul  9 11:59 .Arjumand.swp
-rw-----  1 vboxuser vboxuser  614 Oct 29 10:25 .bash_history
-rw-r--r--  1 vboxuser vboxuser  220 Mar 31 2024 .bash_logout
-rw-r--r--  1 vboxuser vboxuser 3771 Mar 31 2024 .bashrc
drwx----- 10 vboxuser vboxuser 4096 Jul  9 09:59 .cache/
drwx----- 12 vboxuser vboxuser 4096 Jul  9 12:36 .config/
drwxr-xr-x 10 vboxuser vboxuser 4096 Oct 29 11:01 Desktop/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Documents/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Downloads/
drwx-----  2 vboxuser vboxuser 4096 Jul  9 10:24 .gnupg/
-rwxrwxrwx  1 vboxuser vboxuser   0 Jul  9 12:42 hello*
drwx-----  4 vboxuser vboxuser 4096 Jul  9 09:54 .local/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Music/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Pictures/

```

```
135 cp AArr /home/Desktop/Arjuman/
136 pwd
137 cd vboxuser
138 cd ..
139 pwd
140 cd ..
141 pwd
142 cd home
143 cd vboxuser
144 ls
145 cat world
146 cp world /home/
147 sudo cp world /home/
148 ls
149 cd ..
150 ls
151 mv -rf world /home/vboxuser
152 mv world /home/vboxuser
153 sudo mv world /home/vboxuser/
154 ls
155 cd vboxuser
156 ls
157 mv world word
158 ls
159 rm -rf word
160 ls
161 ll
162 history
```

Various commands I have used so far.

```
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ ln -s /home/vboxuser/AArr /home/vboxuser/AArr_link
vboxuser@ubuntu:~$ ls -l
AArr
AArr_link
Desktop
Documents
Downloads
hello
Music
Pictures
Public
snap
Templates
Videos
vboxuser@ubuntu:~$
```

Created soft link to AArr using ln -s command

```

vboxuser@ubuntu:/home$ 
vboxuser@ubuntu:/home$ ls
techie vboxuser
vboxuser@ubuntu:/home$ cd vboxuser
vboxuser@ubuntu:~$ date
Wed Oct 29 12:28:14 PM UTC 2025
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ chmod 777 hello
vboxuser@ubuntu:~$ ls
AArr Desktop Documents Downloads hello Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ ll
total 96
drwxr-x--- 16 vboxuser vboxuser 4096 Oct 29 12:15 ./
drwxr-xr-x  4 root      root    4096 Oct 29 12:14 ../
-rw-rw-r--  1 vboxuser vboxuser   0 Oct 29 11:25 AArr
-rw-rw-r--  1 vboxuser vboxuser  12 Jul  9 12:40 .Arjumandd
-rw-----  1 vboxuser vboxuser 12288 Jul  9 11:59 .Arjumand.swp
-rw-----  1 vboxuser vboxuser  614 Oct 29 10:25 .bash_history
-rw-r--r--  1 vboxuser vboxuser  220 Mar 31 2024 .bash_logout
-rw-r--r--  1 vboxuser vboxuser 3771 Mar 31 2024 .bashrc
drwx----- 10 vboxuser vboxuser 4096 Jul  9 09:59 .cache/
drwx----- 12 vboxuser vboxuser 4096 Jul  9 12:36 .config/
drwxr-xr-x 10 vboxuser vboxuser 4096 Oct 29 11:01 Desktop/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Documents/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Downloads/
drwx-----  2 vboxuser vboxuser 4096 Jul  9 10:24 .gnupg/
-rwxrwxrwx  1 vboxuser vboxuser   0 Jul  9 12:42 hello*
drwx-----  4 vboxuser vboxuser 4096 Jul  9 09:54 .local/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Music/
drwxr-xr-x  2 vboxuser vboxuser 4096 Jul  9 09:54 Pictures/

```

- I have used date and chmod command in above image
- In below image contain system update using g command sudo apt update
- Used commands in below pic searched file using find, compress & decompress using tar, used Top command

```

vboxuser@ubuntu:~$ find . -name "hello"
./hello
vboxuser@ubuntu:~$ cat hello
vboxuser@ubuntu:~$ vi cat
vboxuser@ubuntu:~$ tar -cvf hello.tar hello
hello
vboxuser@ubuntu:~$ tar zcvf hello.tar hello
hello
vboxuser@ubuntu:~$ top
top - 13:00:44 up 1 day, 21 min,  1 user,  load average: 0.00, 0.07, 0.08

```

- Set up Apache

```

Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
vboxuser@ubuntu:~$ apache2 -v
Server version: Apache/2.4.58 (Ubuntu)
Server built: 2025-08-11T11:10:09
vboxuser@ubuntu:~$ 

```



```
vboxuser@ubuntu:~$ sudo apt update
[sudo] password for vboxuser:
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu noble InRelease
Get:3 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,270 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,548 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [211 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9,008 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [2,080 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [470 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [905 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [294 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2,180 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [203 kB]
Get:19 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.4 kB]
Get:21 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:22 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [491 kB]
Get:23 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:24 http://in.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,498 kB]
Get:25 http://in.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [303 kB]
Get:26 http://in.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [378 kB]
Get:27 http://in.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4 kB]
Get:28 http://in.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
```

- Below image I have installed git using sudo apt install git command

```
drwx----- 2 vboxuser vboxuser 4096 Jul  9 09:54 .ssh/
-rw-r--r-- 1 vboxuser vboxuser    0 Oct 29 10:21 .sudo_as_admin_successful
drwxr-xr-x 2 vboxuser vboxuser 4096 Jul  9 09:54 Templates/
drwxr-xr-x 2 vboxuser vboxuser 4096 Jul  9 09:54 Videos/
vboxuser@ubuntu:~$ sudo apt update
[sudo] password for vboxuser:
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu noble InRelease
Get:3 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,270 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,548 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [211 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9,008 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [2,080 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [470 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [905 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [294 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2,180 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [203 kB]
Get:19 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.4 kB]
Get:21 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:22 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [491 kB]
Get:23 http://in.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:24 http://in.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,498 kB]
Get:25 http://in.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [303 kB]
```


I have used commands like find to search for file (eg: here I have searched for file called ARj.text) find /home -size 10M to look for file which are more than 10mb find with log .

```
vboxuser@ubuntu:~/Desktop$ ls
- ARj.text  Arjuman  Arjumand  Class  d1  Devops  Techie  word
vboxuser@ubuntu:~/Desktop$ find /home -name ARj.text
/home/vboxuser/Desktop/ARj.text
vboxuser@ubuntu:~/Desktop$ find . -name *log
vboxuser@ubuntu:~/Desktop$ find . -name '*.log'
vboxuser@ubuntu:~/Desktop$ find /etc -type d -name nginx
find: '/etc/ppp/peers': Permission denied
/etc/nginx
find: '/etc/credstore.encrypted': Permission denied
find: '/etc/credstore': Permission denied
find: '/etc/cups/ssl': Permission denied
find: '/etc/sss': Permission denied
find: '/etc/chatscripts': Permission denied
find: '/etc/polkit-1/rules.d': Permission denied
find: '/etc/ssl/private': Permission denied
vboxuser@ubuntu:~/Desktop$ find /home -size +10M
/home/vboxuser/snap/firefox/common/.cache/mozilla/firefox/4mjxycib.default/start
upCache/scriptCache-current.bin
/home/vboxuser/snap/firefox/common/.cache/mozilla/firefox/4mjxycib.default/start
upCache/scriptCache.bin
/home/vboxuser/snap/firefox/common/.mozilla/firefox/4mjxycib.default/storage/per
manent/chrome/idb/3870112724rsegmnoittet-es.sqlite
vboxuser@ubuntu:~/Desktop$
```

- Generated an SSH key pair on your local system (~/.ssh/id_ed25519).
- Copied the public key to the remote system using ssh-copy-id.
- Enabled and started the SSH service.
- Successfully logged in without a password.

```
vboxuser@ubuntu:~/Desktop$ number of key(s) added: 1
bash: syntax error near unexpected token `('
vboxuser@ubuntu:~/Desktop$ ssh vboxuser@10.0.2.15
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-34-generic x86_64)

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

Expanded Security Maintenance for Applications is not enabled.

1 update can be applied immediately.
1 of these updates is a standard security update.
To see these additional updates run: apt list --upgradable

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

SQL was set up in below image.

```
\
Setting up libhttp-message-perl (0.43-1ubuntu1) ...
Setting up mysql-server-8.0 (8.0.43-0ubuntu0.24.04.2) ...
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Renaming removed key_buffer and myisam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 5341
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /usr/lib/systemd/system/mysql.service.
Setting up libcgi-pm-perl (4.63-1) ...
Setting up libhtml-template-perl (2.97-2) ...
Setting up mysql-server (8.0.43-0ubuntu0.24.04.2) ...
Setting up libcgi-fast-perl (1:2.17-1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Arjumand@Arjumand:~$ sudo mysql -u riit -p
Enter password:
ERROR 1045 (28000): Access denied for user 'riit'@'localhost' (using password: YES)
Arjumand@Arjumand:~$ NUGM0nb@123
NUGM0nb@123: command not found
Arjumand@Arjumand:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.
```

Tomcat setup done `sudo apt install tomcat10 -y`

Sudo `systemctl start tomcat10` to start the process and then status to confirm

```
Processing triggers for rsyslog (8.2312.0-3ubuntu9.1) ...
Arjumand@Arjumand:~$ sudo systemctl start tomcat10 -y
sudo: systemctl: command not found
Arjumand@Arjumand:~$ sudo systemctl start tomcat10 -y
systemctl: invalid option -- 'y'
Arjumand@Arjumand:~$ sudo systemctl start tomcat10
Arjumand@Arjumand:~$ sudo systemctl status tomcat10
● tomcat10.service - Apache Tomcat 10 Web Application Server
   Loaded: loaded (/usr/lib/systemd/system/tomcat10.service; enabled; preset: enabled)
   Active: active (running) since Sat 2025-11-01 17:16:12 UTC; 1min 42s ago
     Docs: https://tomcat.apache.org/tomcat-10.0-doc/index.html
   Process: 7698 ExecStartPre=/usr/libexec/tomcat10/tomcat-update-policy.sh (code=exited, status=0/SUCCESS)
   Main PID: 7702 (java)
     Tasks: 41 (limit: 4615)
  Memory: 136.2M (peak: 140.9M)
    CPU: 5.999s
   CGroup: /system.slice/tomcat10.service
           └─7702 /usr/lib/jvm/default-java/bin/java -Djava.util.logging.config.file=/var/lib/tomcat10/conf/logging

Nov 01 17:16:12 Arjumand tomcat10[7702]: OpenSSL successfully initialized [OpenSSL 3.0.13 30 Jan 2024]
Nov 01 17:16:12 Arjumand tomcat10[7702]: Initializing ProtocolHandler ["http-nio-8080"]
Nov 01 17:16:12 Arjumand tomcat10[7702]: Server initialization in [550] milliseconds
Nov 01 17:16:12 Arjumand tomcat10[7702]: Starting service [Catalina]
Nov 01 17:16:12 Arjumand tomcat10[7702]: Starting Servlet engine: [Apache Tomcat/10.1.16 (Ubuntu)]
Nov 01 17:16:12 Arjumand tomcat10[7702]: Deploying web application directory [/var/lib/tomcat10/webapps/ROOT]
Nov 01 17:16:13 Arjumand tomcat10[7702]: At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug log
Nov 01 17:16:13 Arjumand tomcat10[7702]: Deployment of web application directory [/var/lib/tomcat10/webapps/ROOT] has
Nov 01 17:16:13 Arjumand tomcat10[7702]: Starting ProtocolHandler ["http-nio-8080"]
Nov 01 17:16:13 Arjumand tomcat10[7702]: Server startup in [967] milliseconds
```

Used `awk`, and `sed` command

```
Arjumand@Arjumand:~$ cat AArr
Welcome to the linux class and learning
This is new line
Arjumand@Arjumand:~$ sed -i "This is third line" AArr
sed: can't find label for jump to 'his'
Arjumand@Arjumand:~$ sed -i "3i This is third line" AArr
Arjumand@Arjumand:~$ cat
^C
Arjumand@Arjumand:~$ cat aarr
cat: aarr: No such file or directory
Arjumand@Arjumand:~$ cat AArr
Welcome to the linux class and learning
This is new line
```

Used awk command to solve Average, and also merged

```
Sara 40
arjumand@Arjumand:~$ awk '{sum+=$2}End{print"Average:",sum/NR}'data.txt
awk: cmd. line:1: {sum+=$2}End{print"Average:",sum/NR}data.txt
awk: cmd. line:1:                                     ^ syntax error
arjumand@Arjumand:~$ awk '{sum+=$2} End {print "Average:", sum/NR}' data.txt
arjumand@Arjumand:~$ awk '{sum+=$2} END {print "Average:", sum/NR}' data.txt
Average: 30
arjumand@Arjumand:~$ grep -c "error" AArr
0
arjumand@Arjumand:~$ join AArr.data.txt>merged.txt
join: missing operand after 'AArr.data.txt'
Try 'join --help' for more information.
arjumand@Arjumand:~$ cat > marks.txt
1 85
2 90
3 78
arjumand@Arjumand:~$ join data.txt marks.txt
join: marks.txt: No such file or directory
arjumand@Arjumand:~$ join data.txt marks.txt
join: data.txt:2: is not sorted: Alo 30
join: input is not in sorted order
arjumand@Arjumand:~$ sort data.txt -o data.txt
arjumand@Arjumand:~$ sort marks.txt -o marks.txt
arjumand@Arjumand:~$ join data.txt marks.txt
arjumand@Arjumand:~$ cat merged.txt
ls
AArr data.txt marks.txt merged.txt
```

Changed content of the file using echo file

```
arjumand@Arjumand:~$ echo "This is old line" > AArr
arjumand@Arjumand:~$ cat AArr
This is old line
```

Changed content of the file using sed command

```
arjumand@Arjumand:~$ sed -i 'old/new' AArr
sed: -e expression #1, char 1: unknown command: `o'
arjumand@Arjumand:~$ sed -e 'new/old'/g AArr
sed: -e expression #1, char 2: extra characters after command
arjumand@Arjumand:~$ sed -i 'old/new'/g AArr
sed: -e expression #1, char 1: unknown command: `o'
arjumand@Arjumand:~$ sed -i 's/old/new/g' AArr
arjumand@Arjumand:~$ cat AArr
This is new line
```

```
sed: -e expression #1, char 2: extra characters after command
arjumand@Arjumand:~$ sed -i 'old/new'/g AArr
sed: -e expression #1, char 1: unknown command: `o'
arjumand@Arjumand:~$ sed -i 's/old/new/g' AArr
arjumand@Arjumand:~$ cat AArr
This is new line
arjumand@Arjumand:~$ sed '/pattern/a\This is new line' AArr
This is new line
arjumand@Arjumand:~$ sed-n'2,5p' AArr
sed-n2,5p: command not found
arjumand@Arjumand:~$ sed-n '2,5p' AArr
sed-n: command not found
arjumand@Arjumand:~$ sed -n '2,5p' AArr
arjumand@Arjumand:~$ cat AArr
This is new line
arjumand@Arjumand:~$ awk '{print $1, $3}' data.txt
Alo
John
Sara
```