• echo "Hello, World!"

Echo print the string

```
cdac@Isha:~/LinuxAssignments$ echo "Hello,World!"
Hello,World!
cdac@Isha:~/LinuxAssignments$
```

• name="Productive"

Name store productive

```
cdac@Isha:~/LinuxAssignments$ name="Productive"
cdac@Isha:~/LinuxAssignments$ echo $name
Productive
```

• touch file.txt

• ls -a

Touch create a file

Ls list all the file in present directory

```
cdac@Isha:~/LinuxAssignments$ touch file.txt
cdac@Isha:~/LinuxAssignments$ ls -a
.       2que   5que   9que        docs        file1.txt  input.txt
..      3que   6que   Data.txt    docs.zip    friut.txt  number.txt
10que   3quey  7que   Upper       duplicates  fruit.txt  upperinput
11que   4que   8que   directory1  file.txt    hello
cdac@Isha:~/LinuxAssignments$
```

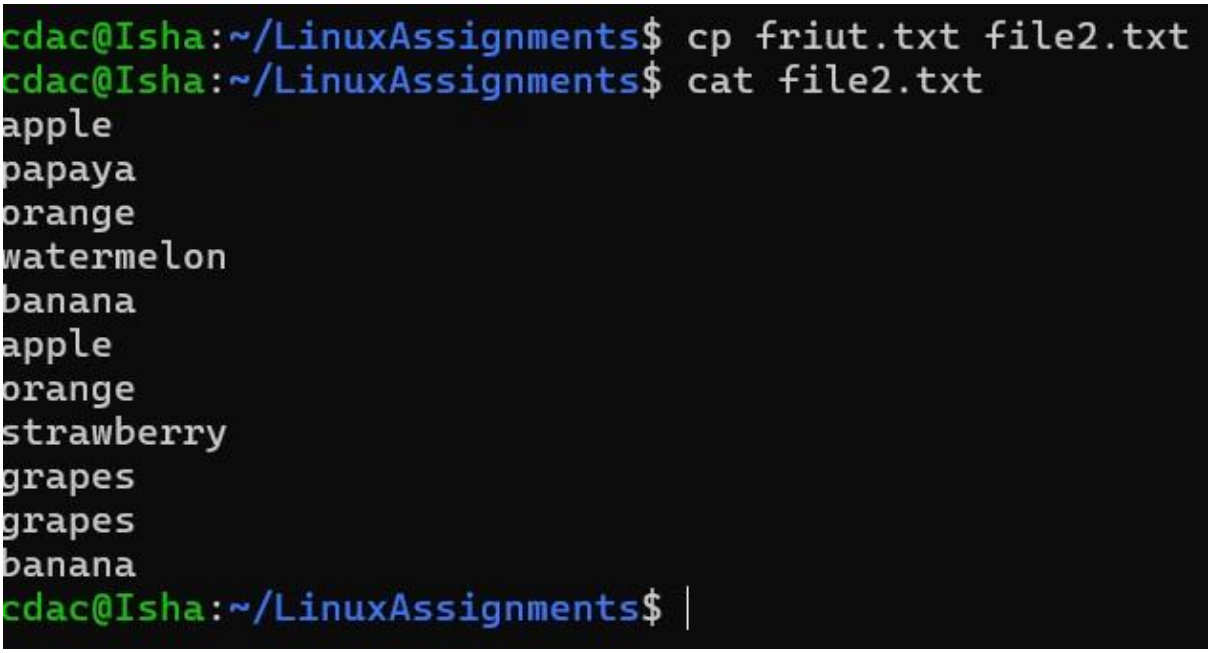
• rm file.txt

Remove the file

```
cdac@Isha:~/LinuxAssignments$ ls
10que  3que   5que  8que      Upper       docs.zip    file1.txt  hello       upperinput
11que  3quey  6que  9que      directory1  duplicates  friut.txt  input.txt
2que   4que   7que  Data.txt  docs        file.txt    fruit.txt  number.txt
cdac@Isha:~/LinuxAssignments$ rm file.txt
cdac@Isha:~/LinuxAssignments$ rm file1.txt
cdac@Isha:~/LinuxAssignments$ ls
10que  2que  3quey  5que  7que  9que      Upper       docs      duplicates  fruit.txt  input.txt   upperinput
11que  3que  4que   6que  8que  Data.txt  directory1  docs.zip  friut.txt   hello      number.txt
cdac@Isha:~/LinuxAssignments$
```

• cp file1.txt file2.txt

Copy the file file1.txt to file2.txt



• mv file.txt /path/to/directory/

Move file from source to destinstion

• chmod 755 script.sh

Change permission for owner all for group , others read and execute

```
cdac@Isha:~/LinuxAssignments$ chmod 755 friut.txt
cdac@Isha:~/LinuxAssignments$ ls -l
total 96
-rw-r--r-- 1 cdac cdac  117 Feb 28 14:02 10que
-rw-r--r-- 1 cdac cdac  171 Feb 28 14:13 11que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:17 2que
-rw-r--r-- 1 cdac cdac   45 Feb 28 13:20 3que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:19 3quey
-rw-r--r-- 1 cdac cdac   73 Feb 28 13:22 4que
-rw-r--r-- 1 cdac cdac  102 Feb 28 13:28 5que
-rw-r--r-- 1 cdac cdac   40 Feb 28 13:30 6que
-rw-r--r-- 1 cdac cdac   62 Feb 28 13:38 7que
-rw-r--r-- 1 cdac cdac  103 Feb 28 13:44 8que
-rw-r--r-- 1 cdac cdac  121 Feb 28 13:47 9que
-rw-r--r-- 1 cdac cdac   87 Feb 27 12:05 Data.txt
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:41 Upper
drwxr-xr-x 3 cdac cdac 4096 Feb 28 14:19 directory1
drwxr-xr-x 2 cdac cdac 4096 Feb 27 13:00 docs
-rw-r--r-- 1 cdac cdac  160 Feb 27 13:03 docs.zip
-rw-r--r-- 1 cdac cdac   73 Feb 27 12:27 duplicates
-rw-r--r-- 1 cdac cdac   83 Feb 28 14:35 file2.txt
-rwxr-xr-x 1 cdac cdac   83 Feb 27 12:33 friut.txt
-rw-r--r-- 1 cdac cdac   77 Feb 27 12:36 fruit.txt
-rw-r--r-- 1 cdac cdac   18 Feb 28 13:15 hello
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:14 input.txt
-rw-r--r-- 1 cdac cdac   45 Feb 27 12:09 number.txt
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:24 upperinput
```

• grep "pattern" file.txt

```
cdac@Isha:~/LinuxAssignments$ man grep
cdac@Isha:~/LinuxAssignments$ grep "pattern" friut.txt
cdac@Isha:~/LinuxAssignments$ cat friut.txt
apple
papaya
orange
watermelon
banana
apple
orange
strawberry
grapes
grapes
banana
cdac@Isha:~/LinuxAssignments$
```

• mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt

Create directory go to that and create file.txt print hello world redirect it to file.txt and print the file

```
cdac@Isha:~/LinuxAssignments$ mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt
Hello, World!
cdac@Isha:~/LinuxAssignments/mydir$ ls
file.txt
cdac@Isha:~/LinuxAssignments/mydir$
```

• ls -l | grep ".txt"

Ls all file that has .txt in name

```
cdac@Isha:~/LinuxAssignments/mydir$ ls -l | grep ".txt"
-rw-r--r-- 1 cdac cdac 14 Feb 28 14:41 file.txt
cdac@Isha:~/LinuxAssignments/mydir$
```

• cat file1.txt file2.txt | sort | uniq

Print the both file content sort them alphabetically and print uniq entry

```
cdac@Isha:~/LinuxAssignments$ cat input.txt friut.txt | sort | uniq
abcdefghijklmnopqrstuvwxyz
apple
banana
grapes
orange
papaya
strawberry
watermelon
cdac@Isha:~/LinuxAssignments$
```

• ls -l | grep "^d"

List all directory

```
cdac@Isha:~/LinuxAssignments$ ls -l | grep "^d"
drwxr-xr-x 3 cdac cdac 4096 Feb 28 14:19 directory1
drwxr-xr-x 2 cdac cdac 4096 Feb 27 13:00 docs
drwxr-xr-x 2 cdac cdac 4096 Feb 28 14:41 mydir
cdac@Isha:~/LinuxAssignments$
```

• cat file1.txt file2.txt | sort | uniq –d

Print the both file content sort and print uniq directory

```
cdac@Isha:~/LinuxAssignments$ cat input.txt friut.txt | sort | uniq -d
uniq: -d: No such file or directory
cdac@Isha:~/LinuxAssignments$
```

chmod 644 file.txt

change permission for owner read write and group and other read and execute

```
cdac@Isha:~/LinuxAssignments$ chmod 644 input.txt
cdac@Isha:~/LinuxAssignments$ ls -l
total 100
-rw-r--r-- 1 cdac cdac  117 Feb 28 14:02 10que
-rw-r--r-- 1 cdac cdac  171 Feb 28 14:13 11que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:17 2que
-rw-r--r-- 1 cdac cdac   45 Feb 28 13:20 3que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:19 3quey
-rw-r--r-- 1 cdac cdac   73 Feb 28 13:22 4que
-rw-r--r-- 1 cdac cdac  102 Feb 28 13:28 5que
-rw-r--r-- 1 cdac cdac   40 Feb 28 13:30 6que
-rw-r--r-- 1 cdac cdac   62 Feb 28 13:38 7que
-rw-r--r-- 1 cdac cdac  103 Feb 28 13:44 8que
-rw-r--r-- 1 cdac cdac  121 Feb 28 13:47 9que
-rw-r--r-- 1 cdac cdac   87 Feb 27 12:05 Data.txt
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:41 Upper
drwxr-xr-x 3 cdac cdac 4096 Feb 28 14:19 directory1
drwxr-xr-x 2 cdac cdac 4096 Feb 27 13:00 docs
-rw-r--r-- 1 cdac cdac  160 Feb 27 13:03 docs.zip
-rw-r--r-- 1 cdac cdac   73 Feb 27 12:27 duplicates
-rw-r--r-- 1 cdac cdac   83 Feb 28 14:35 file2.txt
-rwxr-xr-x 1 cdac cdac   83 Feb 27 12:33 friut.txt
-rw-r--r-- 1 cdac cdac   77 Feb 27 12:36 fruit.txt
-rw-r--r-- 1 cdac cdac   18 Feb 28 13:15 hello
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:14 input.txt
drwxr-xr-x 2 cdac cdac 4096 Feb 28 14:41 mydir
-rw-r--r-- 1 cdac cdac   45 Feb 27 12:09 number.txt
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:24 upperinput
cdac@Isha:~/LinuxAssignments$
```

• cp -r source_directory destination_directory

Cp copy file

```
cdac@Isha:~/LinuxAssignments$ cp -r mydir docs
cdac@Isha:~/LinuxAssignments$ ls
10que  3quey  7que      Upper       duplicates  hello       upperinput
11que  4que   8que      directory1  file2.txt   input.txt
2que   5que   9que      docs        friut.txt   mydir
3que   6que   Data.txt  docs.zip    fruit.txt   number.txt
cdac@Isha:~/LinuxAssignments$ cd docs
cdac@Isha:~/LinuxAssignments/docs$ ls
file.txt  file2.txt  mydir
```

chmod u+x file.txt change permission

to user to execute

```
cdac@Isha:~/LinuxAssignments$ chmod u+x file2.
cdac@Isha:~/LinuxAssignments$ ls -l
total 100:~/LinuxAssignments$ ls -l
-rw-r--r-- 1 cdac cdac  117 Feb 28 14:02 10que
-rw-r--r-- 1 cdac cdac  171 Feb 28 14:13 11que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:17 2que
-rw-r--r-- 1 cdac cdac   45 Feb 28 13:20 3que
-rw-r--r-- 1 cdac cdac   35 Feb 28 13:19 3quey
-rw-r--r-- 1 cdac cdac   73 Feb 28 13:22 4que
-rw-r--r-- 1 cdac cdac  102 Feb 28 13:28 5que
-rw-r--r-- 1 cdac cdac   40 Feb 28 13:30 6que
-rw-r--r-- 1 cdac cdac   62 Feb 28 13:38 7que
-rw-r--r-- 1 cdac cdac  103 Feb 28 13:44 8que
-rw-r--r-- 1 cdac cdac  121 Feb 28 13:47 9que
-rw-r--r-- 1 cdac cdac   87 Feb 27 12:05 Data.txt
-rw-r--r-- 1 cdac cdac   27 Feb 27 12:41 Upper
drwxr-xr-x 3 cdac cdac 4096 Feb 28 14:19 directory1
drwxr-xr-x 3 cdac cdac 4096 Feb 28 14:49 docs
-rw-r--r-- 1 cdac cdac  160 Feb 27 13:03 docs.zip
-rw-r--r-- 1 cdac cdac   73 Feb 27 12:27 duplicates
-rwxr--r-- 1 cdac cdac   83 Feb 28 14:35 file2.txt
```

• echo $PATH

Print path

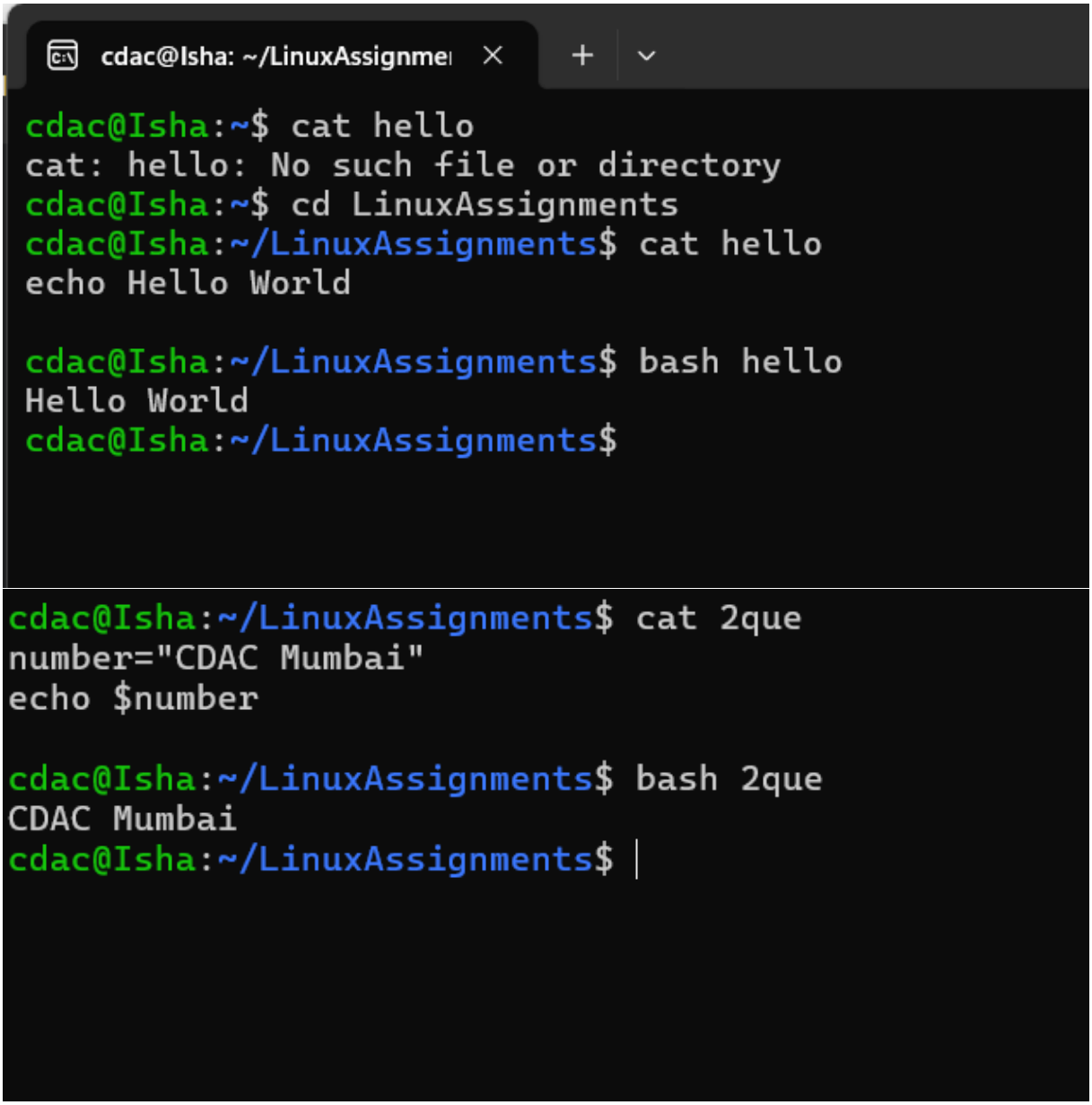
```
cdac@Isha:~/LinuxAssignments$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr
/local/games:/usr/lib/wsl/lib:/mnt/c/Program Files/Java/jdk-11/bin:/mnt/c/Pr
ogram Files/Common Files/Oracle/Java/javapath:/mnt/c/Program Files/Python311
/Scripts/:/mnt/c/Program Files/Python311/:/mnt/c/Program Files/Java/jdk1.8.0
_131/bin:/mnt/c/Program Files/dotnet/:/mnt/c/Program Files/Python312:/mnt/c/
Program Files/Java/jdk-21/bin:/mnt/c/Users/admin/AppData/Local/JetBrains/PyC
harm Community Edition 2023.2.1/bin:/mnt/c/Users/admin/AppData/Local/Program
s/Microsoft VS Code/bin:/mnt/c/Users/admin/AppData/Local/Programs/Python/Pyt
hon311/:/mnt/c/Users/admin/AppData/Local/Programs/Python/Python311/Scripts/:
/snap/bin
cdac@Isha:~/LinuxAssignments$
```

Part B

1. ls is used to list files and directories in a directory. **True**
2. mv is used to move files and directories. **TRUE**
3. cd is used to copy files and directories. **FALSE**
4. pwd stands for "print working directory" and displays the current directory. **FALSE**
5. grep is used to search for patterns in files.**TRUE**
6. chmod 755 file.txt gives read, write, and execute permissions to the owner, and read and execute permissions to group and others**.TRUE**
7. mkdir -p directory1/directory2 creates nested directories, creating directory2 inside directory1 if directory1 does not exist.**TRUE**
8. rm -rf file.txt deletes a file forcefully without confirmation **TRUE** . Identify the Incorrect Commands:

1. chmodx is used to change file permissions. **CORRECT**
2. cpy is used to copy files and directories.**INCORRECT**
3. mkfile is used to create a new file. **INCORRECT**
4. catx is used to concatenate files.**INCORRECT**
5. rn is used to rename files.**INCORRECT**

Part c:


cdac@Isha: ~/LinuxAssignme
cdac@Isha:~$ cat hello
cat: hello: No such file or directory
cdac@Isha:~$ cd LinuxAssignments
cdac@Isha:~/LinuxAssignments$ cat hello
echo Hello World
cdac@Isha:~/LinuxAssignments$ bash hello
Hello World
cdac@Isha:~/LinuxAssignments$
cdac@Isha:~/LinuxAssignments$ cat 2que
number="CDAC Mumbai"
echo $number
cdac@Isha:~/LinuxAssignments$ bash 2que
CDAC Mumbai
cdac@Isha:~/LinuxAssignments$

```
cdac@Isha:~/LinuxAssignments$ cat 3que
echo Enter a number
read n
echo number is $n
cdac@Isha:~/LinuxAssignments$ bash 3que
Enter a number
3
number is 3
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 4que
echo Enter two number
read a
read b
sum=`expr $a + $b`
echo sum is $sum

cdac@Isha:~/LinuxAssignments$ bash 4que
Enter two number
2
3
sum is 5
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 5que
echo Enter a number
read n

if [ $(($n%2)) -eq 0 ]
then
   echo $n is even
else
  echo $n is odd
fi
cdac@Isha:~/LinuxAssignments$ bash 5que
Enter a number
3
3 is odd
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 6que
for i in 1 2 3 4 5
do
   echo $i
done

cdac@Isha:~/LinuxAssignments$ bash 6que
1
2
3
4
5
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 7que
n=1
while [ $n -lt 6 ]
do
   echo $n
   n=`expr $n + 1`
done
cdac@Isha:~/LinuxAssignments$ bash 7que
1
2
3
4
5
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 9que
echo Enter a number
read n
if [ $n -gt 10 ]
then
    echo $n is greater than 10
else
    echo $n is smaller than 10
fi
cdac@Isha:~/LinuxAssignments$ bash 9que
Enter a number
11
11 is greater than 10
cdac@Isha:~/LinuxAssignments$
```

```
cdac@Isha:~/LinuxAssignments$ cat 10que
for i in {1..5}
do
  for a in {1..10}
  do
    mul=`expr $i \* $a`
    echo -n "$mul "
  done
  echo
done


cdac@Isha:~/LinuxAssignments$ bash 10que
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50
cdac@Isha:~/LinuxAssignments$
```

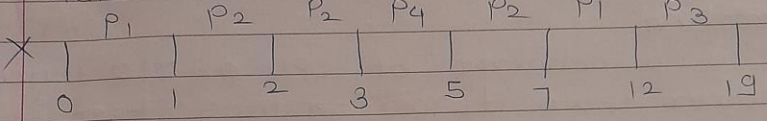
```
cdac@Isha:~/LinuxAssignments$ cat 11que
while true
do
  echo "Enter a number (negative number to quit):"
  read num

  if [ $num -lt 0 ]
  then
     break
  fi
echo "The square of $num is $((num * num))"
done

cdac@Isha:~/LinuxAssignments$ bash 11que
Enter a number (negative number to quit):
5
The square of 5 is 25
Enter a number (negative number to quit):
-8
cdac@Isha:~/LinuxAssignments$
```

Part E:

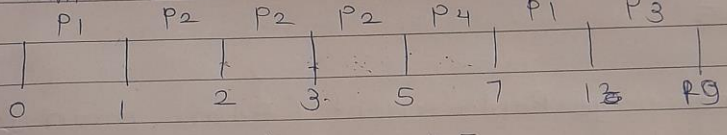
3. Priority

Process	A.T	B.T	Priority	R.T	W.T	T.A.T
P1	0	6	3	0	6	12
P2	1	4	1	1	0	4
P3	2	7	4	12	10	17
P4	3	2	2	5	2	4

Gantt chart



Gantt chart

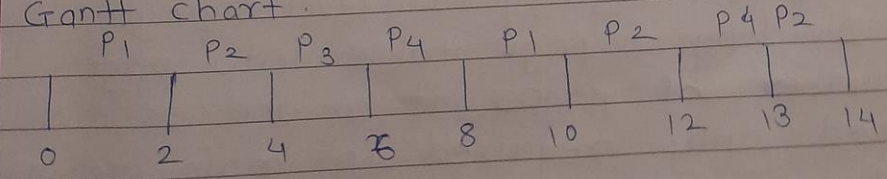


Average Waiting = 4.5
Average TAT = 9.25

4. Round Robin Quantum is 2 unit

Process	A.T	B.T	R.T	W.T	TAT
P1	0	4	0	6	10
P2	1	5	2	9	14
P3	2	2	4	2	6
P4	3	3	6	3	13

Gantt chart



Avg T.AT = 10.75

6. Consider a program that uses the fork() system call to create a child process. Initially, the parent process has a variable x with a value of 5. After forking, both the parent and child processes increment the value of x by 1. What will be the final values of x in the parent and child processes after the fork() call? **Ans is 6 because fork create only copy of main program**