

## OS Lab01

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### Question 1

#### Solution

```
#!/bin/sh
echo "Enter your name"
read name
echo "Entered name: $name"
```

#### Output

```
→ Lab02 git:(master) less Q1.sh
→ Lab02 git:(master) ./Q1.sh
Enter your name
Dipankar Das
Entered name: Dipankar Das
→ Lab02 git:(master)
```

```
→ Lab02 git:(master)
```

```
→ Lab02 git:(master)
```

```
→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
├── file.txt
├── mycity.txt
├── myfile.sh
├── passwd
└── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~
```

### Question 2

#### Solution

```
#!/bin/sh
a=$1
b=$2
res=`echo $a *\` $b | bc`
echo "Res: $res"
```

#### Output

```
→ Lab02 git:(master) ./Q2.sh 3.4 5.7
Res: 19.3
→ Lab02 git:(master) █
```

```
→ Lab02 git:(master)
```

```
→ Lab02 git:(master)
```

```
→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
└── file.txt
    ├── mycity.txt
    ├── myfile.sh
    ├── passwd
    ├── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~
```

### Question 3

#### Solution

```
#!/bin/sh

echo "Enter a number"

read num

if [ `expr $num % 2` -eq 0 ]
then
    echo "Even number"
else
    echo "Odd number"
fi
```

#### Output

```
→ Lab02 git:(master) ./Q3.sh
Enter a number
34
Even number
→ Lab02 git:(master) ./Q3.sh
Enter a number
56
Even number
→ Lab02 git:(master) ./Q3.sh
Enter a number
7
Odd number
→ Lab02 git:(master) █
```

```
→ Lab02 git:(master)
```

```
→ Lab02 git:(master)
```

```
→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
└── file.txt
    ├── mycity.txt
    ├── myfile.sh
    ├── passwd
    ├── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~
```

### Question 4

#### Solution

```

#!/bin/sh

echo "Enter 3 number"

read a
read b
read c

if [ $a -lt $b ]
then
    if [ $a -lt $c ]
    then
        echo "smallest: $a"
    else
        echo "smallest: $c"
    fi
else
    if [ $b -lt $c ]
    then
        echo "smallest: $b"
    else
        echo "smallest: $c"
    fi
fi

if [ $a -gt $b ]
then
    if [ $a -gt $c ]
    then
        echo "largest: $a"
    else
        echo "largest: $c"
    fi
else
    if [ $b -gt $c ]
    then
        echo "largest: $b"
    else
        echo "largest: $c"
    fi
fi

```

## Output

```

→ Lab02 git:(master) less Q4.sh
→ Lab02 git:(master) ./Q4.sh
Enter 3 number
3
4
6
smallest: 3
largest: 6
→ Lab02 git:(master) ./Q4.sh
Enter 3 number
6
7
3
smallest: 3
largest: 7
→ Lab02 git:(master)

```

```

→ Lab02 git:(master)

```

```

→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
├── file.txt
├── mycity.txt
├── myfile.sh
├── passwd
├── Q10.sh
├── Q1.sh
├── Q2.sh
├── Q3.sh
├── Q4.sh
├── Q5.sh
├── Q6.sh
├── Q7.sh
└── Q8.sh
└── Q9.sh

0 directories, 14 files
→ ~

```

## Question 5

### Solution

```

#!/bin/sh

echo "enter the username"

read usr

currUsr=$(whoami)

if [ "$usr" = "$currUsr" ]
then
    echo "Currently logged in"
else
    echo "Currently not logged in"
fi

```

### Output

```

→ Lab02 git:(master) less Q5.sh
→ Lab02 git:(master) ./Q5.sh
enter the username
dd
Currently not logged in
→ Lab02 git:(master) ./Q5.sh
enter the username
dipankar
Currently logged in
→ Lab02 git:(master) █

```

```

→ Lab02 git:(master) whoami
dipankar
→ Lab02 git:(master)

```

```
→ Lab02 git:(master)
```

```

→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
├── file.txt
└── mycity.txt
    └── myfile.sh
    └── passwd
        ├── Q10.sh
        ├── Q1.sh
        ├── Q2.sh
        ├── Q3.sh
        ├── Q4.sh
        ├── Q5.sh
        ├── Q6.sh
        ├── Q7.sh
        ├── Q8.sh
        └── Q9.sh

0 directories, 14 files
→ ~

```

### Question 6

#### Solution

```

#!/bin/bash

currHour=$(date +%H)
currDate=$(date +%x)
currTime=$(date +%X)

if [ "$currHour" -lt "12" ]; then
    echo "Good Morning"
elif [ "$currHour" -ge "12" -a "$currHour" -le "18" ]; then
    echo "Good Afternoon"
else
    echo "Good Night"
fi

echo "It's $currTime of $currDate"

```

### Output

```
→ Lab02 git:(master) ./Q6.sh
Good Morning
It's 11:46:24 AM IST of 05/02/22
→ Lab02 git:(master) ./Q6.sh
Good Morning
It's 11:46:29 AM IST of 05/02/22
→ Lab02 git:(master) ./Q6.sh
Good Morning
It's 11:46:30 AM IST of 05/02/22
→ Lab02 git:(master)
→ Lab02 git:(master) █
```

```
→ Lab02 git:(master)
```

```
→ Lab02 git:(master) whoami
dipankar
→ Lab02 git:(master)
```

```
→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
└── file.txt
    ├── mycity.txt
    ├── myfile.sh
    ├── passwd
    ├── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~
```

## Question 7

### Solution

```
#!/bin/bash

echo "Enter the marks for a subject"

read marks

if [ $marks -ge 90 ]; then
    echo "Grade: 'O'"
elif [ $marks -ge 80 ]; then
    echo "Grade: 'A'"
elif [ $marks -ge 70 ]; then
    echo "Grade: 'B'"
elif [ $marks -ge 60 ]; then
    echo "Grade: 'C'"
elif [ $marks -ge 50 ]; then
    echo "Grade: 'D'"
elif [ $marks -ge 40 ]; then
    echo "Grade: 'E'"
else
    echo "Grade: 'F'"
fi
```

### Output

```

→ Lab02 git:(master) less Q7.sh
→ Lab02 git:(master) ./Q7.sh
Enter the marks for a subject
79
Grade: 'B'
→ Lab02 git:(master) ./Q7.sh
Enter the marks for a subject
59
Grade: 'D'
→ Lab02 git:(master) ./Q7.sh
Enter the marks for a subject
90
Grade: 'O'
→ Lab02 git:(master) █

```

```
→ Lab02 git:(master)
```

```

→ Lab02 git:(master) whoami
dipankar
→ Lab02 git:(master)

```

```

→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
└── file.txt
    ├── mycity.txt
    ├── myfile.sh
    ├── passwd
    ├── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~

```

## Question 8

### Solution

```

#!/bin/bash

# marks=$(sed -ne 3,7p file.txt)
# echo "$marks"

m1=$(sed -ne '3,3p' file.txt)
m2=$(sed -ne '4,4p' file.txt)
m3=$(sed -ne '5,5p' file.txt)
m4=$(sed -ne '6,6p' file.txt)
m5=$(sed -ne '7,7p' file.txt)

echo "Hello, $(sed -ne '1,2p' file.txt)"

total=`expr $m1 + $m2 + $m3 + $m4 + $m5`
per=`echo $total / 5 | bc -l`
echo "Total: $total"
echo "Percentage: $per%"

```

### Output

```

→ Lab02 git:(master) less Q8.sh
→ Lab02 git:(master) ./Q8.sh
Hello, 20051554
Dipankar Das
Total: 372
Percentage: 74.40000000000000%
→ Lab02 git:(master) █

```

```

→ Lab02 git:(master) cat file.txt
20051554
Dipankar Das
45
68
90
89
80

→ Lab02 git:(master)

```

```

→ Lab02 git:(master) whoami
dipankar
→ Lab02 git:(master)

```

```

→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
└── file.txt
    ├── mycity.txt
    ├── myfile.sh
    ├── passwd
    ├── Q10.sh
    ├── Q1.sh
    ├── Q2.sh
    ├── Q3.sh
    ├── Q4.sh
    ├── Q5.sh
    ├── Q6.sh
    ├── Q7.sh
    ├── Q8.sh
    └── Q9.sh

0 directories, 14 files
→ ~

```

## Question 9

### Solution

```
#!/bin/bash

echo "Enter the fileName"

read fname

if [ -f "$fname" ]; then
    echo "File Exist"
    echo "Contents:"
    txt=`cut -d " " -f 5 $fname | sort`
    echo "$txt"
else
    echo "File Does not exist"
fi
```

### Output

```
→ Lab02 git:(master) less Q9.sh
→ Lab02 git:(master) ./Q9.sh
Enter the fileName
passwd
File Exist
Contents:
dfsdsd
scsc
→ Lab02 git:(master) ./Q9.sh
Enter the fileName
dd
File Does not exist
→ Lab02 git:(master)
```

```
→ Lab02 git:(master) cat file.txt
20051554
Dipankar Das
45
68
90
89
80
→ Lab02 git:(master)
```

```
→ Lab02 git:(master) whoami
dipankar
→ Lab02 git:(master) cat passwd
root x 0 sdadash scsc
dcscdsc xccx 32 fds dfdsdsd
→ Lab02 git:(master) █
```

```
→ ~ tree Documents/OS_lab/Lab02
Documents/OS_lab/Lab02
├── file.txt
├── mycity.txt
└── myfile.sh
  ├── passwd
  ├── Q10.sh
  ├── Q1.sh
  ├── Q2.sh
  ├── Q3.sh
  ├── Q4.sh
  ├── Q5.sh
  ├── Q6.sh
  ├── Q7.sh
  └── Q8.sh
  └── Q9.sh
0 directories, 14 files
→ ~
```

## Question 10

### Solution

```

#!/bin/bash

echo "Enter [ 1 ] List files"
echo "Enter [ 2 ] create dir"
echo "Enter [ 3 ] change dir"
echo "Enter [ 4 ] remove dir"
echo "Enter [ 5 ] create file"
echo "Enter [ 6 ] copy file"
echo "Enter [ 7 ] remove file"

read choice

if [ $choice -eq 1 ]; then
# assuming it is the curr dir
    ls -la

elif [ $choice -eq 2 ]; then
    echo "Enter the directory name"
    read dirN
    `mkdir $dirN`
    ls -la

elif [ $choice -eq 3 ]; then
    echo "Enter the directory name"
    read dirN
    cd $dirN
    pwd

elif [ $choice -eq 4 ]; then
    echo "Enter the directory name"
    read dirN
    `rm -R $dirN`
    ls -la

elif [ $choice -eq 5 ]; then
    echo "Enter the file name"
    read fileN
    `touch $fileN`
    ls -l

elif [ $choice -eq 6 ]; then
    echo "Enter the file name"
    read fileN
    `cp -v $fileN copy_$fileN`
    ls -l

elif [ $choice -eq 7 ]; then
    echo "Enter the file name"
    read fileN
    `rm -i $fileN`
    ls -l

else
    echo "Wrong Choice"
fi

```

### Output

```

→ Lab02 git:(master) ./Q10.sh
Enter [ 1 ] List files
Enter [ 2 ] create dir
Enter [ 3 ] change dir
Enter [ 4 ] remove dir
Enter [ 5 ] create file
Enter [ 6 ] copy file
Enter [ 7 ] remove file
1
total 72
drwxr-xr-x 2 dipankar dipankar 4096 Feb 4 21:19 .
drwxr-xr-x 5 dipankar dipankar 4096 Feb 3 12:38 ..
-rw-r--r-- 1 dipankar dipankar 38 Feb 4 19:10 file.txt
-rw-r--r-- 1 dipankar dipankar 0 Feb 4 21:18 mycity.txt
-rw-r--r-- 1 dipankar dipankar 239 Feb 3 13:21 myfile.sh
-rw-r--r-- 1 dipankar dipankar 51 Feb 4 20:55 passwd
-rw-r--r-- 1 dipankar dipankar 908 Feb 4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 12288 Feb 4 21:06 .Q10.sh.swp
-rw-r--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rw-r--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rw-r--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rw-r--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rw-r--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rw-r--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rw-r--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
-rw-r--r-- 1 dipankar dipankar 374 Feb 4 19:41 Q8.sh
-rw-r--r-- 1 dipankar dipankar 202 Feb 4 20:57 Q9.sh
+ Lab02 git:(master)

→ Lab02 git:(master) ./Q10.sh
Enter [ 1 ] List files
Enter [ 2 ] create dir
Enter [ 3 ] change dir
Enter [ 4 ] remove dir
Enter [ 5 ] create file
Enter [ 6 ] copy file
Enter [ 7 ] remove file
3
Enter the directory name
hello
/home/dipankar/Documents/OS_lab/Lab02/hello
→ Lab02 git:(master) ./Q10.sh
Enter [ 1 ] List files
Enter [ 2 ] create dir
Enter [ 3 ] change dir
Enter [ 4 ] remove dir
Enter [ 5 ] create file
Enter [ 6 ] copy file
Enter [ 7 ] remove file
4
Enter the directory name
hello
rm: remove directory 'hello'? yes
total 72
drwxr-xr-x 2 dipankar dipankar 4096 Feb 5 11:51 .
drwxr-xr-x 5 dipankar dipankar 4096 Feb 3 12:38 ..
-rw-r--r-- 1 dipankar dipankar 38 Feb 4 19:10 file.txt
-rw-r--r-- 1 dipankar dipankar 0 Feb 4 21:18 mycity.txt
-rw-r--r-- 1 dipankar dipankar 239 Feb 3 13:21 myfile.sh
-rw-r--r-- 1 dipankar dipankar 51 Feb 4 20:55 passwd
-rw-r--r-- 1 dipankar dipankar 908 Feb 4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 12288 Feb 4 21:06 .Q10.sh.swp
-rw-r--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rw-r--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rw-r--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rw-r--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rw-r--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rw-r--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rw-r--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
+ Lab02 git:(master) x ./Q10.sh
Enter [ 1 ] List files
Enter [ 2 ] create dir
Enter [ 3 ] change dir
Enter [ 4 ] remove dir
Enter [ 5 ] create file
Enter [ 6 ] copy file
Enter [ 7 ] remove file
6
Enter the file name
mycity.txt
./Q10.sh: line 44: 'mycity.txt': command not found
total 60
-rw-r--r-- 1 dipankar dipankar 45 Feb 5 11:55 copy_mycity.txt
-rw-r--r-- 1 dipankar dipankar 38 Feb 4 19:10 file.txt
-rw-r--r-- 1 dipankar dipankar 45 Feb 5 11:53 mycity.txt
-rw-r--r-- 1 dipankar dipankar 239 Feb 3 13:21 myfile.sh
-rw-r--r-- 1 dipankar dipankar 51 Feb 4 20:55 passwd
-rw-r--r-- 1 dipankar dipankar 908 Feb 4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rw-r--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rw-r--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rw-r--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rw-r--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rw-r--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rw-r--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
-rw-r--r-- 1 dipankar dipankar 374 Feb 4 19:41 Q8.sh
-rw-r--r-- 1 dipankar dipankar 202 Feb 4 20:57 Q9.sh
+ Lab02 git:(master) x cat mycity.txt
jamshedpur
new delhi
kolkata
chennai
mumbai
+ Lab02 git:(master) x cat copy_mycity.txt
jamshedpur
new delhi
kolkata
chennai
mumbai
+ Lab02 git:(master) x

Documents/OS_lab/Lab02
├── copy_mycity.txt
└── file.txt
    ├── mycity.txt
    └── myfile.sh
    └── passwd
    └── Q10.sh
        └── Q1.sh

```

```

+ Lab02 git:(master) x
└── Q1.sh
└── Q2.sh
└── Q3.sh
└── Q4.sh
└── Q5.sh
└── Q6.sh
└── Q7.sh
└── Q8.sh
└── Q9.sh

0 directories, 15 files
+ ~

+ Lab02 git:(master) x ./Q10.sh
Enter [ 1 ] List files
Enter [ 2 ] create dir
Enter [ 3 ] change dir
Enter [ 4 ] remove dir
Enter [ 5 ] create file
Enter [ 6 ] copy file
Enter [ 7 ] remove file
7
Enter the file name
mycity.txt
rm: remove regular file 'mycity.txt'? yes
total 56
-rw-r--r-- 1 dipankar dipankar 45 Feb  5 11:55 copy_mycity.txt
-rw-r--r-- 1 dipankar dipankar 38 Feb  4 19:10 file.txt
-rw-r--r-- 1 dipankar dipankar 239 Feb  3 13:21 myfile.sh
-rw-r--r-- 1 dipankar dipankar 51 Feb  4 20:55 passwd
-rwxr--r-- 1 dipankar dipankar 988 Feb  4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 73 Feb  3 13:26 Q1.sh
-rw-r--r-- 1 dipankar dipankar 64 Feb  3 13:46 Q2.sh
-rw-r--r-- 1 dipankar dipankar 125 Feb  3 13:37 Q3.sh
-rw-r--r-- 1 dipankar dipankar 428 Feb  3 13:56 Q4.sh
-rw-r--r-- 1 dipankar dipankar 167 Feb  4 18:40 Q5.sh
-rw-r--r-- 1 dipankar dipankar 280 Feb  4 18:58 Q6.sh
-rw-r--r-- 1 dipankar dipankar 376 Feb  4 19:05 Q7.sh
-rw-r--r-- 1 dipankar dipankar 374 Feb  4 19:41 Q8.sh
-rw-r--r-- 1 dipankar dipankar 202 Feb  4 20:57 Q9.sh
+ Lab02 git:(master) x

+ Lab02 git:(master) x cat mycity.txt
jamshedpur
new delhi
kolkata
chennai
mumbai
+ Lab02 git:(master) x cat copy_mycity.txt
jamshedpur
new delhi
kolkata
chennai
mumbai
+ Lab02 git:(master) x

Documents/OS_lab/Lab02
├── copy_mycity.txt
├── file.txt
└── mycity.txt

myfile.sh
passwd
Q10.sh
Q1.sh
Q2.sh
Q3.sh
Q4.sh
Q5.sh
Q6.sh
Q7.sh
Q8.sh
Q9.sh

0 directories, 15 files
+ ~

```