OS Lab01

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Question 1

Write a shell program to take input of your name and display the same.

Solution

```
#!/bin/sh

echo "Enter your name"

read name

echo "Entered name: $name"
```

Output

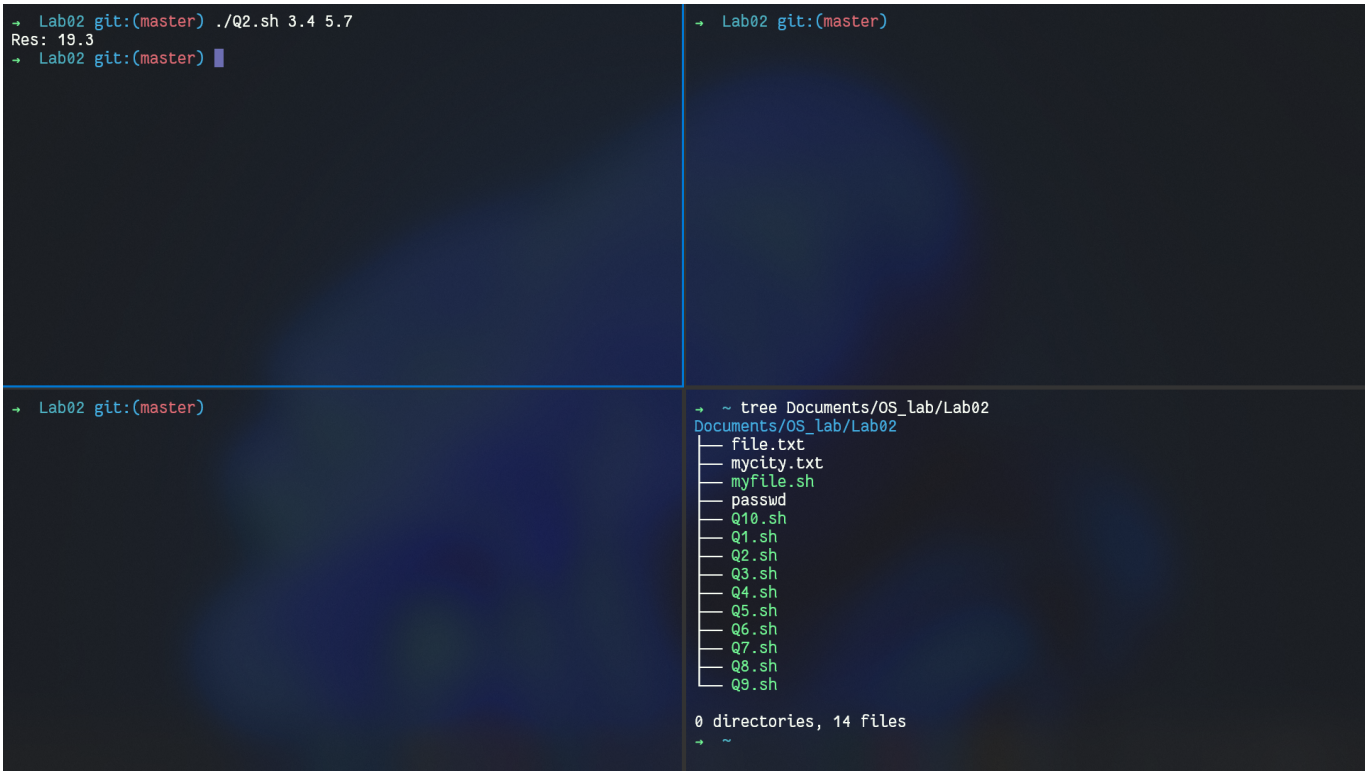
Question 2

Write a shell program that multiply two numbers using the command line arguments

Solution

```
#!/bin/sh

a=$1
b=$2

res=`echo $a *\ $b | bc`
echo "Res: $res"
```

Output



Question 3

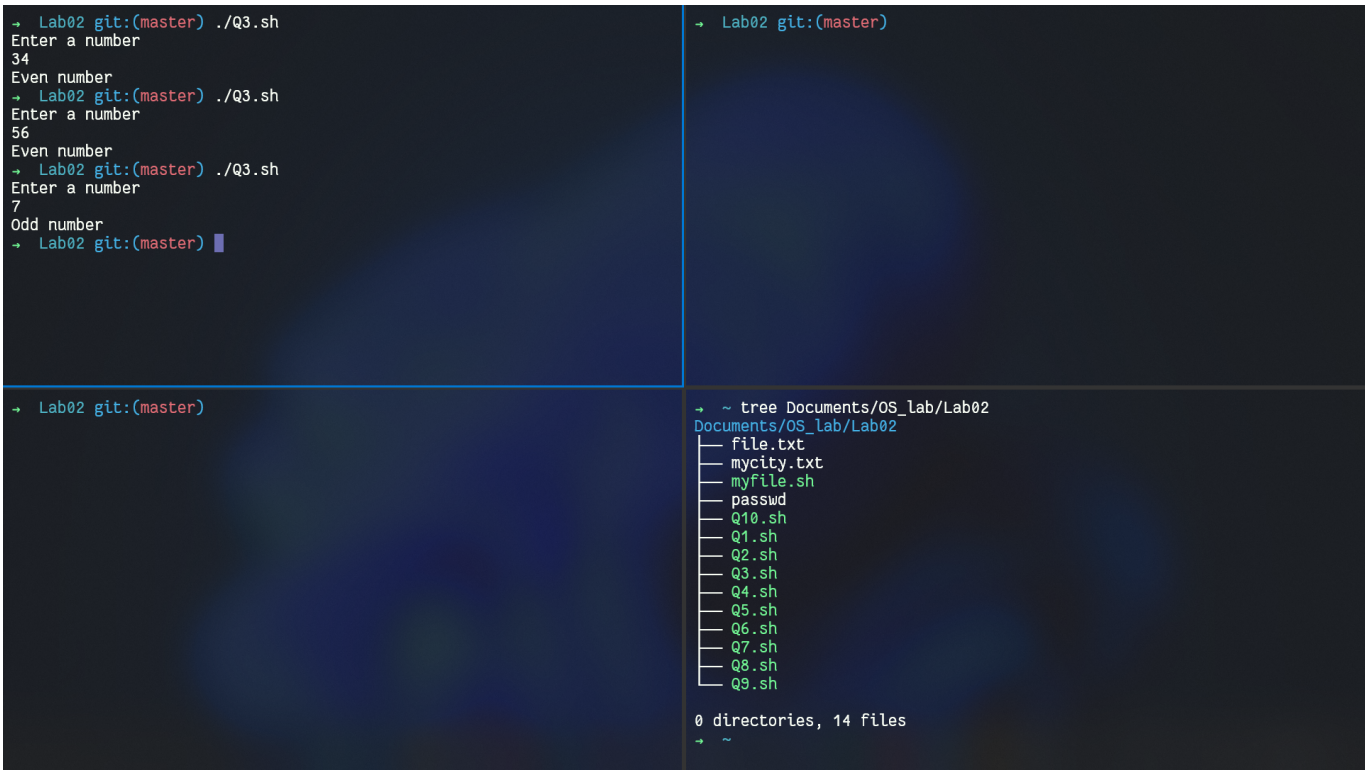
Write a shell program to check whether a given number is even or odd.

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



Question 4

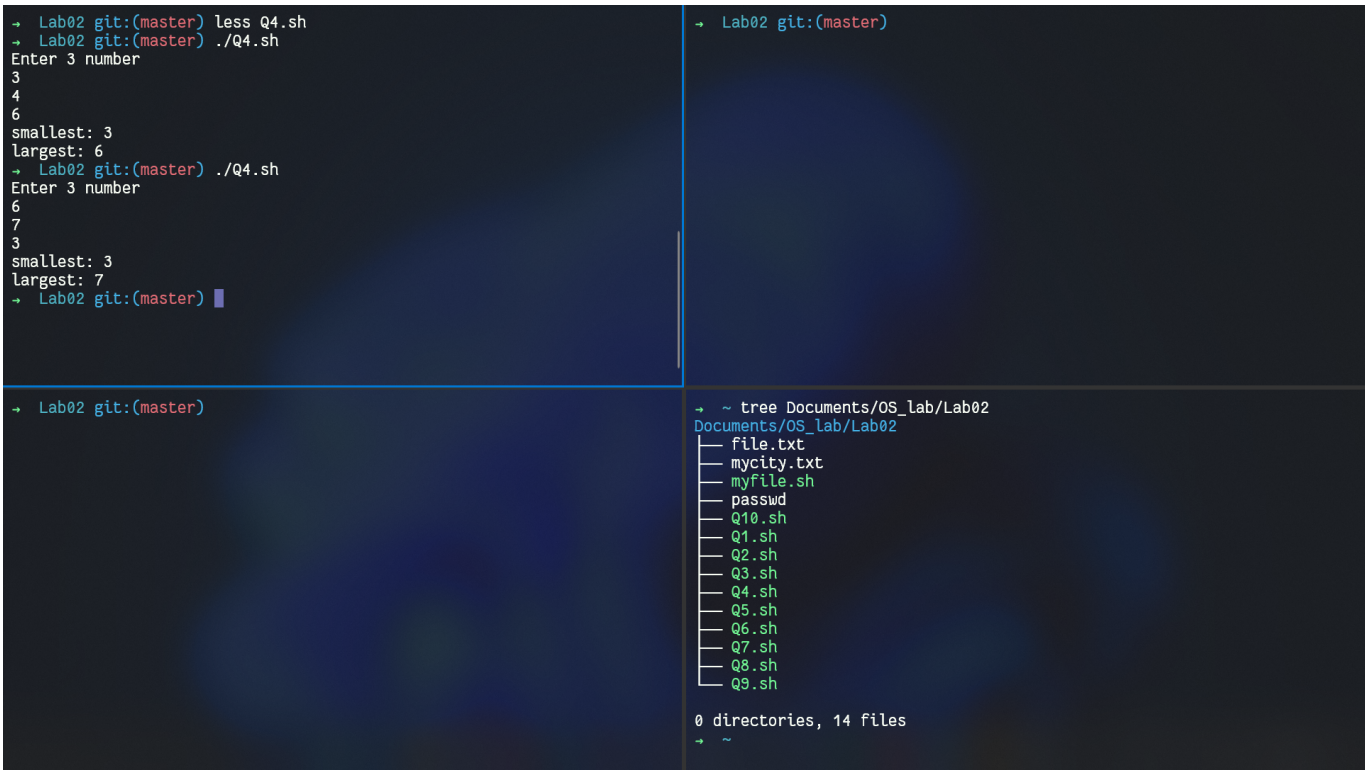
Write a shell program to find greatest and smallest among three given numbers using nested if

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



Question 5

Write a shell program to check whether a given user is currently logged in or not.

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

Question 6

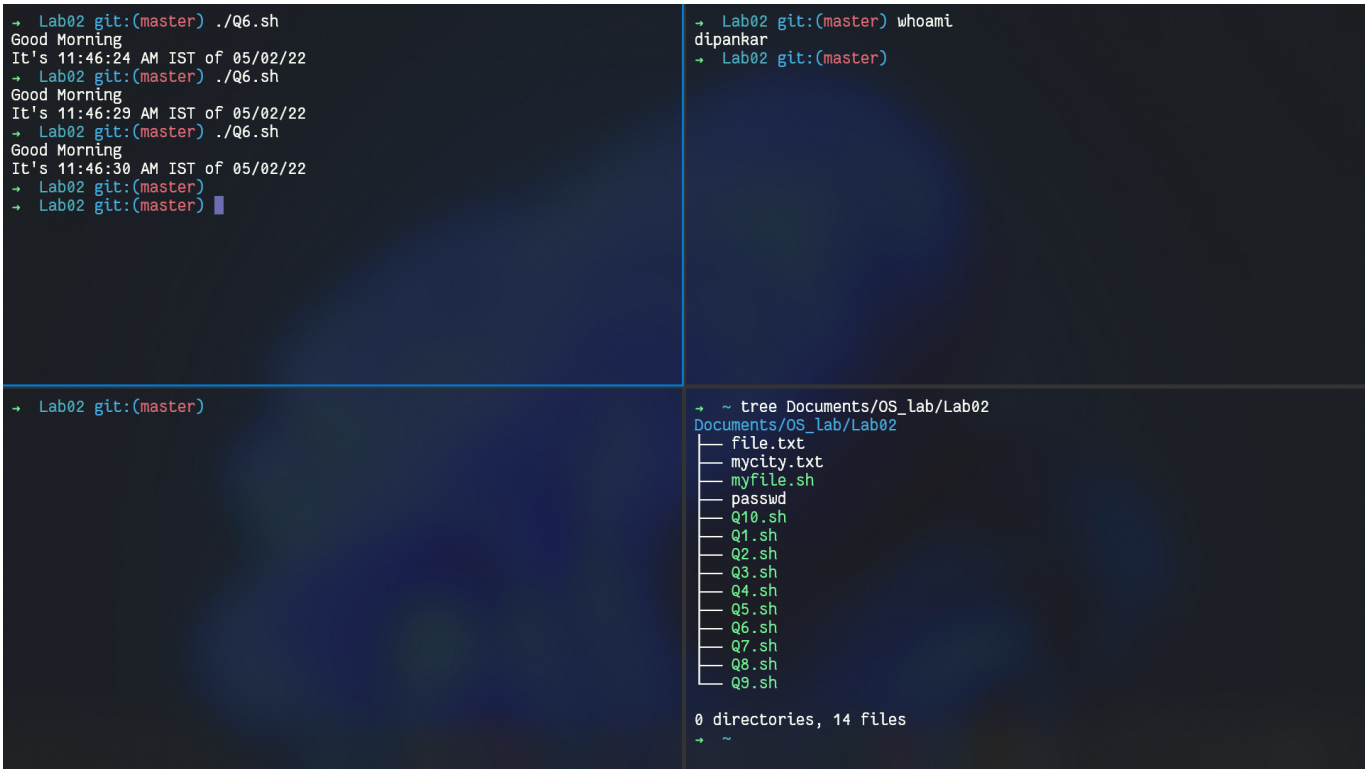
Write a shell program to display the Date in “dd/mm/yyyy” format and the time in "hour:minute:second AM/PM timezone” with a greeting message like Good Morning, Good Evening etc. based on the current time

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



Question 7

Write a shell program to enter the mark secured by a student in a particular subject. Based on the grading system of our university, find and display the grade (i.e. from “O” to “F”) secured by the student in that subject

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

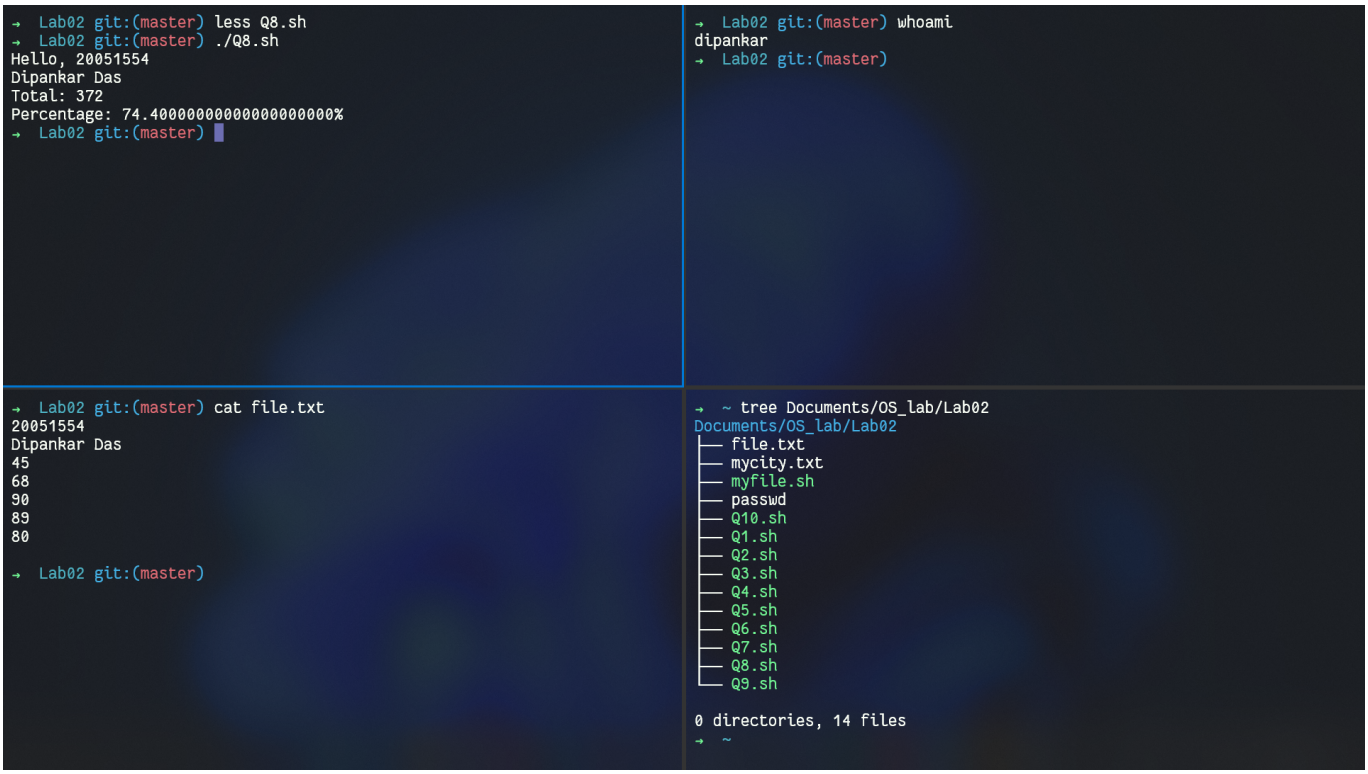
Question 8

Write a shell program to fetch the data of a particular student (based on the row information, i.e., ex. The student present in the 3rd row of the file) from a stored file. Then calculate and display his total mark and the aggregate percentage secured in a semester. The file contains student roll no, name , and marks of five differ subjects in a semester

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



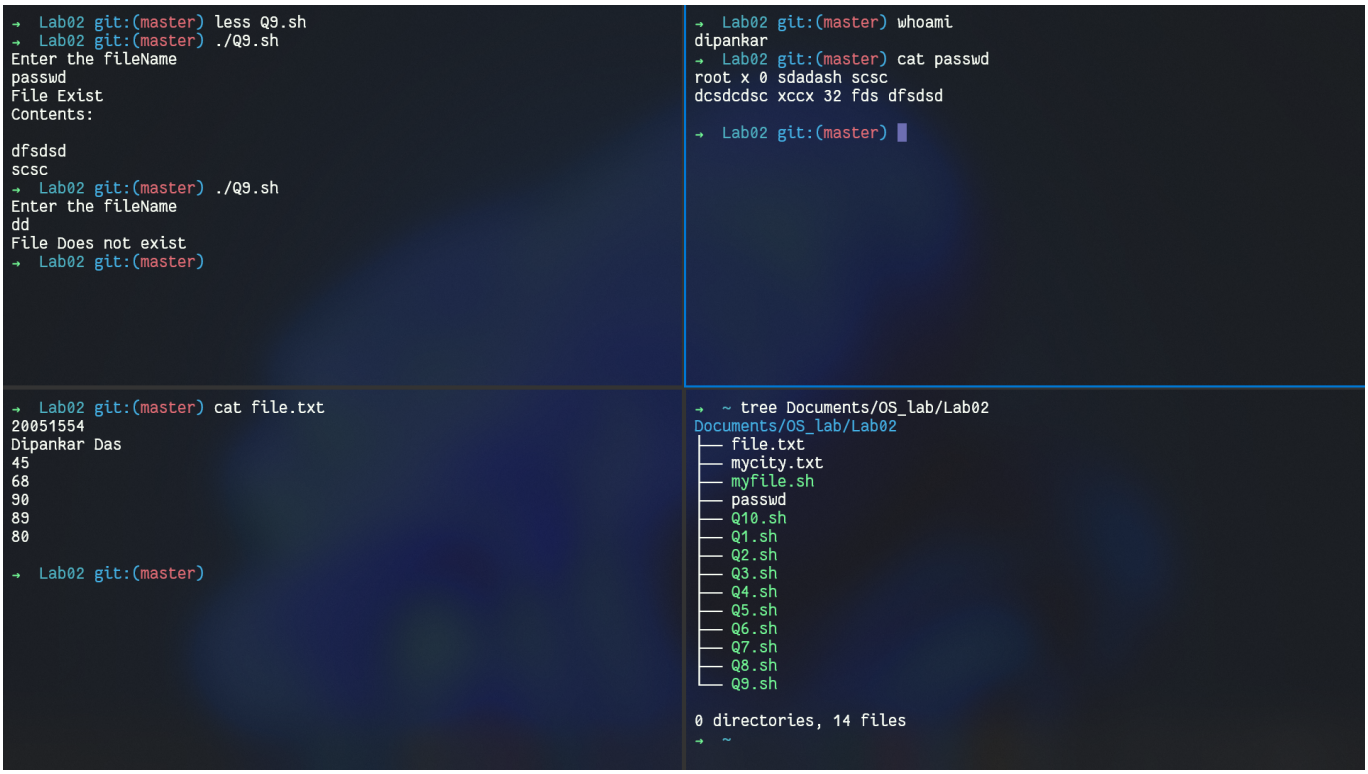
Question 9

Write a shell program to take the input of a file name and check whether the file exists or not. If the file exists then display the last column of every record of the file (Assume that no. of columns in each record of the file may vary) in ascending order.

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



Question 10

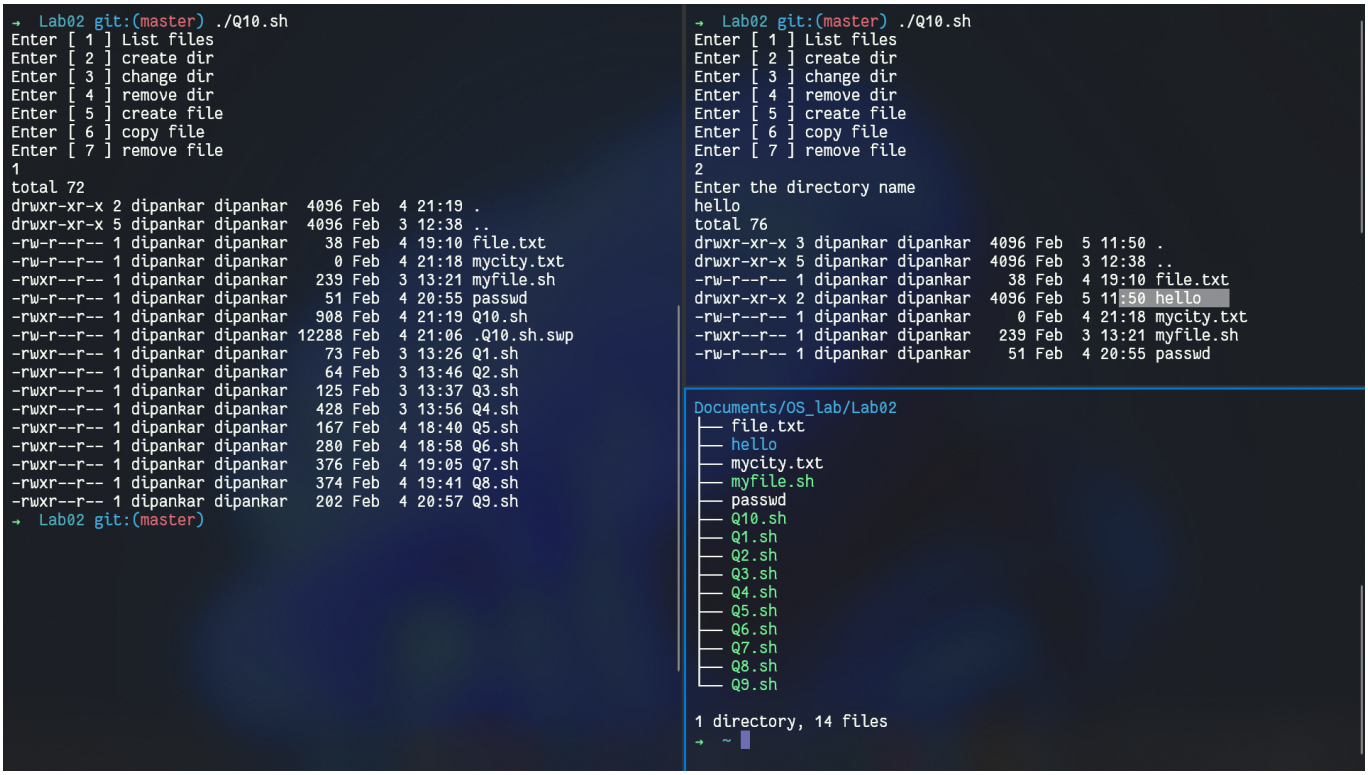
Write a menu based shell program that will carry out the following file management operations based on the specifed choice value. 1 - List files, 2 - Create directory, 3 – Change directory, 4 – Remove directory, 5 - Create file, 6 - Copy file, 7 – remove file.

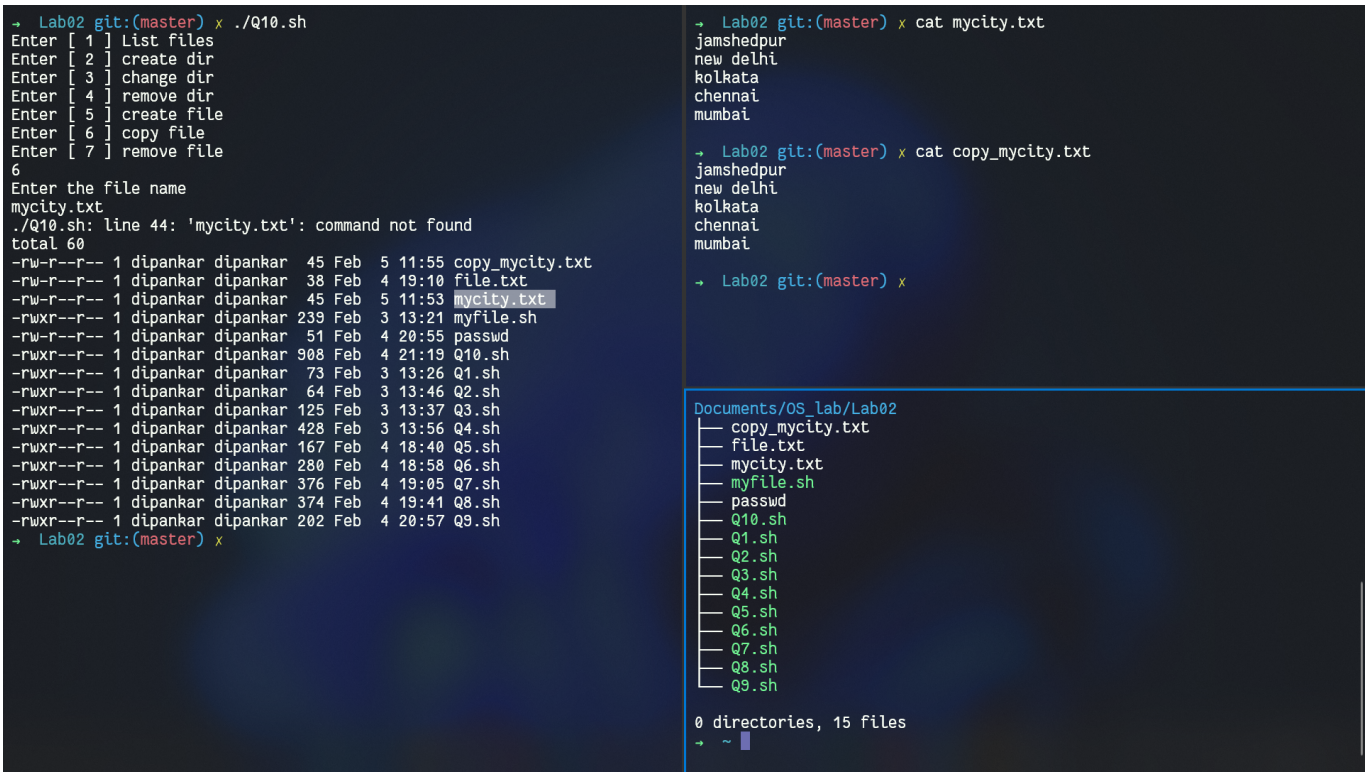
Solution

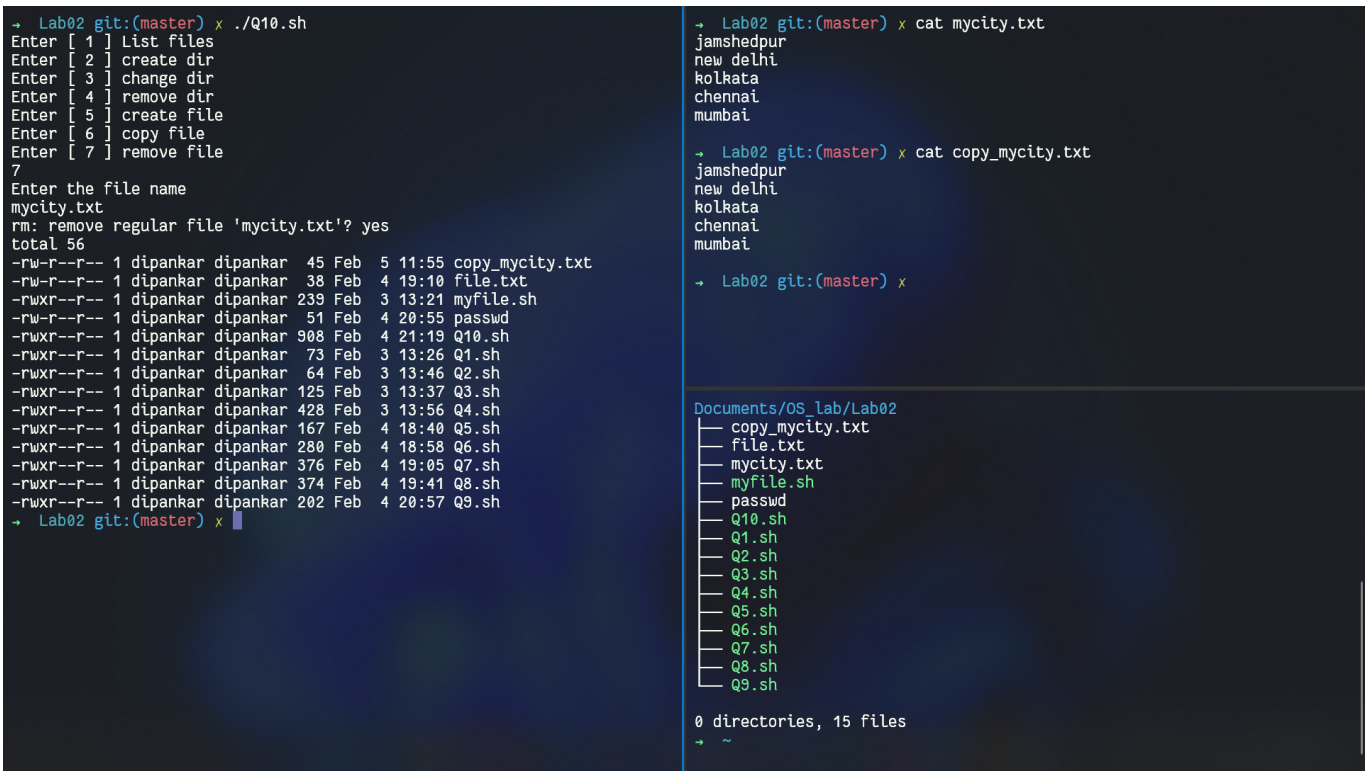
```
#!/bin/bash
```

```
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 -Ri $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
-rwxr--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 908 Feb 4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 12288 Feb 4 21:06 .Q10.sh.swp
-rwxr--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rwxr--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rwxr--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rwxr--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rwxr--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rwxr--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rwxr--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
-rwxr--r-- 1 dipankar dipankar 374 Feb 4 19:41 Q8.sh
-rwxr--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
2
Enter the directory name
hello
total 76
drwxr-xr-x 3 dipankar dipankar 4096 Feb 5 11:50 .
drwxr-xr-x 5 dipankar dipankar 4096 Feb 3 12:38 ..
-rw-r--r-- 1 dipankar dipankar 38 Feb 4 19:10 file.txt
drwxr-xr-x 2 dipankar dipankar 4096 Feb 5 11:50 hello
-rw-r--r-- 1 dipankar dipankar 0 Feb 4 21:18 mycity.txt
-rwxr--r-- 1 dipankar dipankar 239 Feb 3 13:21 myfile.sh
-rw-r--r-- 1 dipankar dipankar 51 Feb 4 20:55 passwd
Documents/OS_lab/Lab02
├── file.txt
├── hello
├── 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
1 directory, 14 files
→ ~
→ 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
-rwxr--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 908 Feb 4 21:19 Q10.sh
-rw-r--r-- 1 dipankar dipankar 12288 Feb 4 21:06 .Q10.sh.swp
-rwxr--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rwxr--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rwxr--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rwxr--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rwxr--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rwxr--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rwxr--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
→ 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
5
Enter the file name
mycity.txt
total 52
-rw-r--r-- 1 dipankar dipankar 38 Feb 4 19:10 file.txt
-rw-r--r-- 1 dipankar dipankar 0 Feb 5 11:52 mycity.txt
-rwxr--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 908 Feb 4 21:19 Q10.sh
-rwxr--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rwxr--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
→ ~ 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
→ ~


→ 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
-rwxr--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 908 Feb 4 21:19 Q10.sh
-rwxr--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rwxr--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rwxr--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rwxr--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rwxr--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rwxr--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rwxr--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
-rwxr--r-- 1 dipankar dipankar 374 Feb 4 19:41 Q8.sh
-rwxr--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
→ ~


→ 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
-rwxr--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 908 Feb 4 21:19 Q10.sh
-rwxr--r-- 1 dipankar dipankar 73 Feb 3 13:26 Q1.sh
-rwxr--r-- 1 dipankar dipankar 64 Feb 3 13:46 Q2.sh
-rwxr--r-- 1 dipankar dipankar 125 Feb 3 13:37 Q3.sh
-rwxr--r-- 1 dipankar dipankar 428 Feb 3 13:56 Q4.sh
-rwxr--r-- 1 dipankar dipankar 167 Feb 4 18:40 Q5.sh
-rwxr--r-- 1 dipankar dipankar 280 Feb 4 18:58 Q6.sh
-rwxr--r-- 1 dipankar dipankar 376 Feb 4 19:05 Q7.sh
-rwxr--r-- 1 dipankar dipankar 374 Feb 4 19:41 Q8.sh
-rwxr--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
→ ~