CS351
Operating System I

Lab Final Exam

Q1) Write a program to do the following:

- Read from user two source paths. (Source1, Source2)
- Create a directory in the user's desktop "Recycle" and then create two folders inside it "S1" and "S2"
- Then read a list of names.
    - The list consists of the name and its type (f→ file, and d→ directory) Ex:

File1.txt	f	OS1	d	File2.sh	f	File3.sh	f	File4.txt	f	OS2	d

- Check in both Source1 and Source 2 if the files (/folders) are exist or not, if they are exist check if they are same or not.
    - It will be same if the two files have the same permissions (read, write, and execute).
- If they are not same, copy the file or the folder from source1 to S1 folder and from source2 to S2.

Q2) Write a program to do the following:

- Check in the user documents directory if OS1_Backup directory exist or not.
- If it is exist, check if there were 10 files text1.txt, text2.txt, … , text10.txt are exists or not, then make all the files readable only (not executable and not writeable).
- Then check if there were 5 directories OS1, OS2, …, OS5 are exists or not, then make all the files writable only (not executable and not readable).
- If the 10 files and the 5 directories are exist create a file on the user's desktop named by "LogfileDone.txt"

Q3) Let the previous program executes tomorrow.

Answers:

Q1:

```
 read source1
read source2
cd $HOME/Desktop
mkdir Recycle
mkdir Recycle/s1
mkdir Recycle/s2
read -a list
len=${#list[*]}
i=0
j=1
while [ $i -lt $len ]
do
	flagr1=0
	flagr2=0
	flagw1=0
	flagw2=0
	flagx1=0
	flagx2=0
	if [ ${list[$j]} = "f" ]
	then
		if [ -f $source1/${list[$i]} ]
		then
			if [ -f $source2/${list[$i]} ]
			then
				if [ -r $source1/${list[$i]} ]
				then
					flagr1=1
				fi
				if [ -r $source2/${list[$i]} ]
				then
					flagr2=1
				fi

				if [ -w $source1/${list[$i]} ]
				then
					flagw1=1
				fi
				if [ -w $source2/${list[$i]} ]
				then
					flagw2=1
				fi

				if [ -x $source1/${list[$i]} ]
				then
					flagx1=1
```

```
                        fi
                        if [ -x $source2/${list[$i]} ]
                        then
                                flagx2=1
                        fi
                        flags=0
                        if [ $flagr1 -eq $flagr2 -a $flagw1 -eq $flagw2 -a $flagx1 -eq $flagx2 ]
                        then
                                flags=1
                        fi
                        if [ $flags -eq 0 ]
                        then
                                cp $source1/${list[$i]} $HOME/Desktop/Recycle/s1
                                cp $source2/${list[$i]} $HOME/Desktop/Recycle/s2
                        fi
                fi
        fi
fi
if [ ${list[$j]} = "d" ]
then
        if [ -d $source1/${list[$i]} ]
        then
                if [ -d $source2/${list[$i]} ]
                then
                        if [ -r $source1/${list[$i]} ]
                        then
                                flagr1=1
                        fi
                        if [ -r $source2/${list[$i]} ]
                        then
                                flagr2=1
                        fi

                        if [ -w $source1/${list[$i]} ]
                        then
                                flagw1=1
                        fi
                        if [ -w $source2/${list[$i]} ]
                        then
                                flagw2=1
                        fi

                        if [ -x $source1/${list[$i]} ]
                        then
                                flagx1=1
                        fi
                        if [ -x $source2/${list[$i]} ]
                        then
```

```
                        flagx2=1
                    fi
                    flags=0
                    if [ $flagr1 -eq $flagr2 -a $flagw1 -eq $flagw2 -a $flagx1 -eq $flagx2 ]
                    then
                        flags=1
                    fi
                    if [ $flags -eq 0 ]
                    then
                        cp -r $source1/${list[$i]} $HOME/Desktop/Recycle/s1
                        cp -r $source2/${list[$i]} $HOME/Desktop/Recycle/s2
                    fi
                fi
            fi
        fi
        i=`expr $i + 2`
        j=`expr $j + 2`
done
```

Q2:

```
cd $HOME/Documents
if [ -d OS1_Backup ]
then
        counter=0
        for (( i=1;i<11;i++ ))
        do
                if [ -f text$i.txt ]
                then
                        let counter++
                fi
        done
        if [ $counter -eq 10 ]
        then
                for (( i=1;i<11;i++ ))
                do
                        chmod +r text$i.txt
                        chmod -wx text$i.txt
                done
        fi
        counterd=0
        for (( i=1;i<6;i++ ))
        do
                if [ -d OS$i ]
                then
                        let counterd++
                fi
        done
```

```
        if [ $counterd -eq 5 ]
        then
                for (( i=1;i<6;i++ ))
                do
                        chmod +w OS$i
                        chmod -rx OS$i
                done
        fi
        if [ $counter -eq 10 -a $counterd -eq 5 ]
        then
                touch $HOME/Desktop/LogfileDone.txt
        fi
fi
```

Q3:

at tomorrow
./q2.sh