

**Group ID – 6**  
**Question No. - 6**

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# Operating Systems

Lab I



# Problem Statement

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*Remove all files of a specified type (like: ‘txt’) from a specified directory and all of its subdirectories. Print the number of files deleted and the full pathnames of all files deleted. The program must prompt the user to confirm before deleting every file.*



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01

## Problem Overview

- » Here, we are required to create a bash program to remove some files of specified extension from a specified directory.
- » These files(of given extension) also need to be deleted from all the subdirectories of the given directory.
- » User will be asked to enter a directory or path and file extension to be deleted.
- » Our bash program will have to search for all of those sub-directories of a given directory where the files of a given extension exists.



01

## Problem Overview

- » When the program will encounter the file with a given extension, bash program will ask the user to confirm the deletion of the file.
  - If a user presses “Y” or “y” a particular file is deleted, the absolute path of the file is printed, and the number of deleted files is increased by 1.
  - If the user presses “N” or “n” file is not deleted.
- » This process is to be repeated for every file of the specified extension.
- » At the end, the program should print the total number of files deleted of the given extension.

## Code & Explanation



The absolute path of the directory will be stored in variable name **dir**. It is taken as input from user by using **read**

Command to go to the directory **\$dir**

Variable to store no. of deleted files

File type to be deleted will be stored in variable named **extension**. **read** is used to take input from user.

```
#!/bin/bash  
  
dir=" "  
echo -n Enter the absolute path of the directory :  
read dir  
  
cd $dir  
  
filesDeleted=0  
  
extension=" "  
echo -n Enter the extension you want to delete :  
read extension
```



## Code & Explanation (contd..)

- Here **IFS** stands for *Internal Field Separator*, is an environment variable. Its default values are tabs, spaces, and newlines, etc.
- **IFS=\$'\n'** is will handle newlines, if loop encounters any tab or space in any file or folder name it will not split its name. Ex- File or folder name like 'hello world in css' will be treated as a single file name.

```
IFS=$'\n'  
for ITEM in `find ./| grep "\\\.$extension$"`
```

- '**find .**' command lists files and folders in a directory and its sub-directories in current directory that was given by user
- **grep** searches for a *PATTERN* in files and folders, by default it prints the matching line.
- '**grep \$extension\$**' is a *REGULAR EXPRESSION* for a string that has the given extension at the end of the line.
- '**grep "\\\.\$extension\$"**' will search only for files and will also select the folders whose names ends with that extension.
- **|** is called *PIPE*, used to combine two commands, here it combines **`find .`** with **`grep "\\\.\$extension\$"`** and in result we get a list of files that end with required extension and also the folders whose names ends with that extension.
- Then using a Loop we iterate through each element of list one by one



## Code & Explanation (contd..)

- **realpath** gives the exact path of **ITEM**.
- **basename** gives filename from absolute path

If **abspath** of **ITEM** is detected as a directory then further code is skipped and next **ITEM** is processed.

If **ITEM** is detected as file, then user is prompted to confirm the deletion of file by entering Y or N.

```
do
    abspath=`realpath $ITEM`
    itemname=`basename $abspath`
    if [ -d $abspath ];
    then
        continue
    fi

    input=' '
    echo -n Do you want to delete $itemname?[Y/N]
    read input
```



## Code & Explanation (contd..)

Checks if value entered by user is **Y** or **y**

- **rm** command removes/deletes the file
- **itemname** and its **absolute path** are printed on screen with a [ Deletion Successful ] message

After the deletion, number of files deleted is incremented by 1

```
if [[ $input == 'y' || $input == 'Y' ]];  
then  
    rm $abspath  
    echo Name of the file delete : $itemname  
    echo Absolute path of the file : $abspath  
    echo [ Deletion Successful ]  
    filesDeleted="${filesDeleted+1}"  
    echo
```



## Code & Explanation (contd..)

When check for **Y** or **y** fails, program checks for **N** or **n**, and if this check passes, [ FILE NOT DELETED ] message is printed

- When user enters anything other than **Y** or **N** or **y** or **n**, [ INVALID INPUT ] message is printed.
- **fi** is compulsory statement to end if-else statements

**done** is necessary statement to denote end of for-Loop

```
elif [[ $input == 'n' || $input == 'N' ]];  
then  
    echo [ FILE NOT DELETED ]  
    echo  
else  
    echo [ INVALID INPUT - FILE NOT DELETED ]  
    echo  
fi  
done
```



## Code & Explanation (contd..)

*Resets IFS environment variable to its default values.*

`unset IFS`

*Prints the number of files deleted in complete process.*

`echo -n "Number of files deleted : " $filesDeleted`  
`echo`

*Basic command to exit from bash program.*

`exit 0`

# 04

# Output

*Next few slides will contain screenshots of output, and last slide will contain a small video showing the complete output.*

```
aditya@aditya-Masten-15-3500:~/Desktop/OS_project
```

```
aditya@aditya-Masten-15-3500:~/Desktop$ cd OS_project/
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ ls
Final_code_pc.bash
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ cp Final_code_pc.bash
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ ls
Final_code_pc.bash
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ chmod +x Final_code_pc.bash
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ ls -l
Final_code_pc.bash
aditya@aditya-Masten-15-3500:~/Desktop/OS_project$ ./Final_code_pc.bash
Enter the absolute path of the directory :/home/aditya/Desktop/test_folder
Enter the connection you want to delete :css
Do you want to delete main.css?(Y/N)y
Name of the file delete : main.css
Absolute path of the file :/home/aditya/Desktop/test_folder/static/css/main.css
[ Deletion Successful ]
```

```
Do you want to delete font-awesome.min.css?(Y/N)n
FILE NOT DELETED
```

```
Do you want to delete font-awesome.min.css?(Y/N)N
FILE NOT DELETED
```

```
Do you want to delete login.css?(Y/N)n
[ INVALID INPUT, FILE NOT DELETED ]
```

```
Do you want to delete signap.css?(Y/N)P
[ INVALID INPUT, FILE NOT DELETED ]
```

```
Do you want to delete book.css?(Y/N)d
[ INVALID INPUT, FILE NOT DELETED ]
```

```
Do you want to Delete test.css comments:
```

aditya@aditya-Desktop:~/Desktop/OS\_project:

Do you want to delete head.css?(y/n)n  
[INVALID INPUT, FILE NOT FOUND]

Do you want to delete bootstrap.css?(y/n)y  
Name of the file delete : bootstrap.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/static/css/bootstrap.css  
[ Deletion Successful ]

Do you want to delete font-awesome.min.css?(y/n)y  
Name of the file delete : font-awesome.min.css  
Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/static/css/font-awesome.min.css  
[ Deletion Successful ]

Do you want to delete main-style.css?(y/n)y  
Name of the file delete : main-style.css  
Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/static/css/main-style.css  
[ Deletion Successful ]

Do you want to delete demo.css?(y/n)y  
Name of the file delete : demo.css  
Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/static/css/demo.css  
[ Deletion Successful ]

Do you want to delete style.css?(y/n)n  
[ FILE NOT DELETED ]

Do you want to delete main-style.css?(y/n)n  
[ FILE NOT DELETED ]

Do you want to delete demo.css?(y/n)b  
[ INVALID INPUT, FILE NOT FOUND ]

Do you want to delete login.css?(y/n)y  
Name of the file delete : login.css  
Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/market/templates/mart/static/css/login.css  
[ Deletion Successful ]

Do you want to delete stgroup.css?(y/n)y

aditya@aditya-Desktop:~/Desktop/OS\_project

[INVALID INPUT, FILE NOT DELETED]

Do you want to delete login.css?(Y/N)y

Name of the file delete : login.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/css/login.css

[ Deletion Successful ]

Do you want to delete signup.css?(Y/N)y

[INVALID INPUT, FILE NOT DELETED]

Do you want to delete bootstrap.css?(Y/N)f

[INVALID INPUT, FILE NOT DELETED]

Do you want to delete font-awesome.min.css?(Y/N)y

Name of the file delete : font-awesome.min.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/css/font-awesome.min.css

[ Deletion Successful ]

Do you want to delete main-style.css?(Y/N)y

Name of the file delete : main-style.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/css/main-style.css

[ Deletion Successful ]

Do you want to delete demo.css?(Y/N)y

Name of the file delete : demo.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/css/demo.css

[ Deletion Successful ]

Do you want to delete style.css?(Y/N)y

Name of the file delete : style.css

Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/css/style.css

[ Deletion Successful ]

Do you want to delete main-style.css?(Y/N)y

Name of the file delete : main-style.css

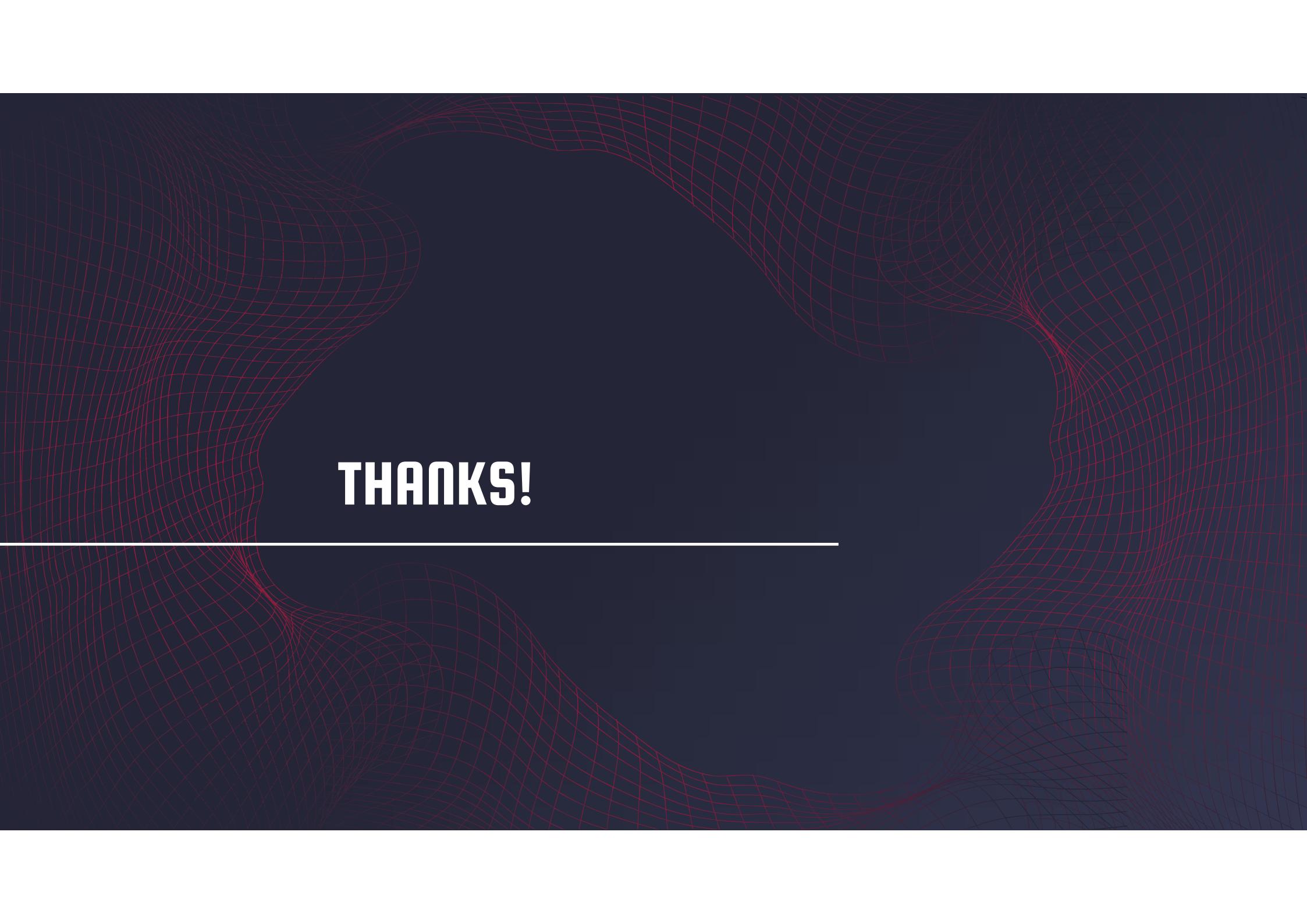
Absolute path of the file : /home/aditya/Desktop/test\_folder/mart/merchant/templates/mart/static/tenantcss/main-style.css

[ Deletion Successful ]

Do you want to delete demo.css?(Y/N)y

editbyjatin@Latitude-E5450: ~/magento/04\_project

```
Name of the file delete : demo.css  
Absolute path of the file : /home/editbyjatin/Desktop/test_folder/mart/merchant/templates/mart/static/css/demo.css  
[ Deletion Successful ]  
  
Do you want to delete style.css? [Y/N]y  
Name of the file delete : style.css  
Absolute path of the file : /home/editbyjatin/Desktop/test_folder/mart/merchant/templates/mart/static/css/style.css  
[ Deletion Successful ]  
  
Do you want to delete main-style.css? [Y/N]y  
Name of the file delete : main-style.css  
Absolute path of the file : /home/editbyjatin/Desktop/test_folder/mart/merchant/templates/mart/static/css/main-style.css  
[ Deletion Successful ]  
  
Do you want to delete demo.css? [Y/N]y  
Name of the file delete : demo.css  
Absolute path of the file : /home/editbyjatin/Desktop/test_folder/mart/merchant/templates/mart/static/itemSlider/css/demo.css  
[ Deletion successful ]  
  
Do you want to delete bootstrap.css? [Y/N]y  
Name of the file delete : bootstrap.css  
Absolute path of the file : /home/editbyjatin/Desktop/test_folder/mart/merchant/assets/css/bootstrap.css  
[ Deletion Successful ]  
  
Do you want to delete font-awesome.min.css? [Y/N]y  
[ Invalid Input, FILE NOT FOUND ]  
  
Do you want to delete main-style.css? [Y/N]y  
[ Invalid Input, FILE NOT FOUND ]  
  
Do you want to delete demo.css? [Y/N]n  
[ File NOT FOUND ]  
  
Do you want to delete style.css? [Y/N]y  
[ FILE NOT DELETED ]  
  
Number of Files deleted : 14  
editbyjatin@Latitude-E5450: ~/magento/04_project
```

The background features a dark navy blue surface with four large, translucent red wireframe mesh waves. These waves are oriented diagonally and overlap each other, creating a sense of depth and motion.

**THANKS!**

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