CYSE 270: Linux System for Cybersecurity

Lab 8 – Shell Scripting

(Total 100 Points)

Please Refer to the slides for week-8-Shell scripting and write shell scripts to complete the following tasks. Submit the screenshot for the script and its output, both.

NOTE: Please replace the name of the script with the name you used for the script. In the sample screenshot, I have used those names to create my script.

Step-1: Use vi or nano editor to write your script (Ex, nano YourScriptName.sh) for the following tasks.

Step-2: After saving the script, save and exit out of the editor and make the script executable by adding execute permission (chmod +x YourScriptName.sh)

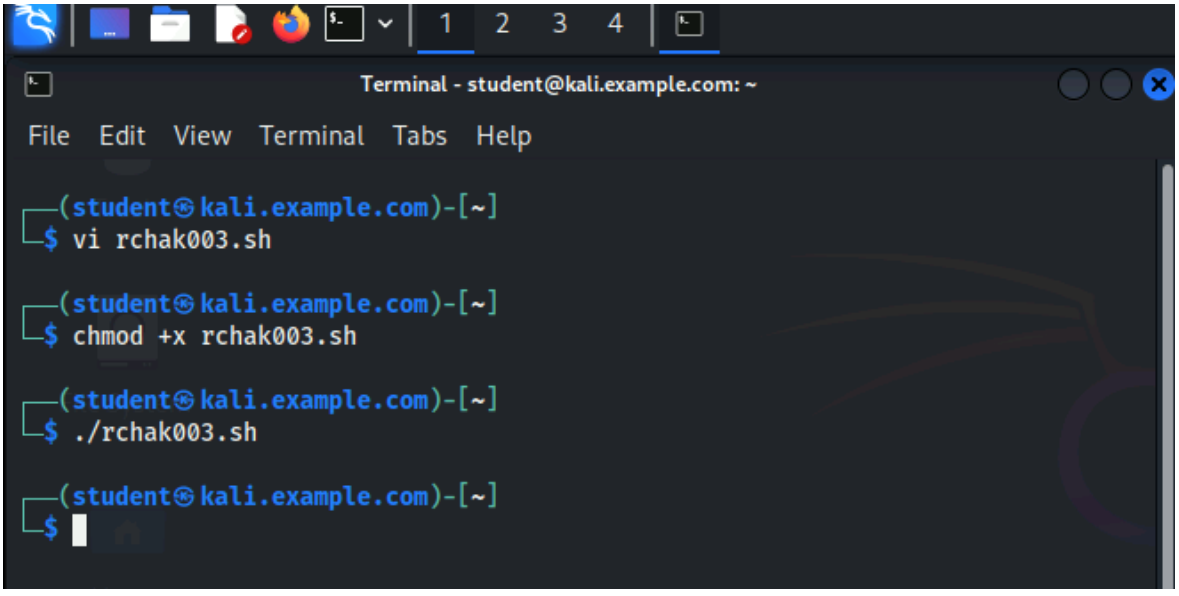
Step-3: Run your script using ./YourScriptName.sh

Commands used:

Step1: vi rchak003.sh

Step2: chmod +x rchak003.sh

Step3: ./rchak003.sh



Task A (Correct script (25 points) + result/output after executing the script (25 points)- Conditional Statement

Write a shell script using nano or vi editor (eg, nano scriptname.sh) like below, that performs the following task:

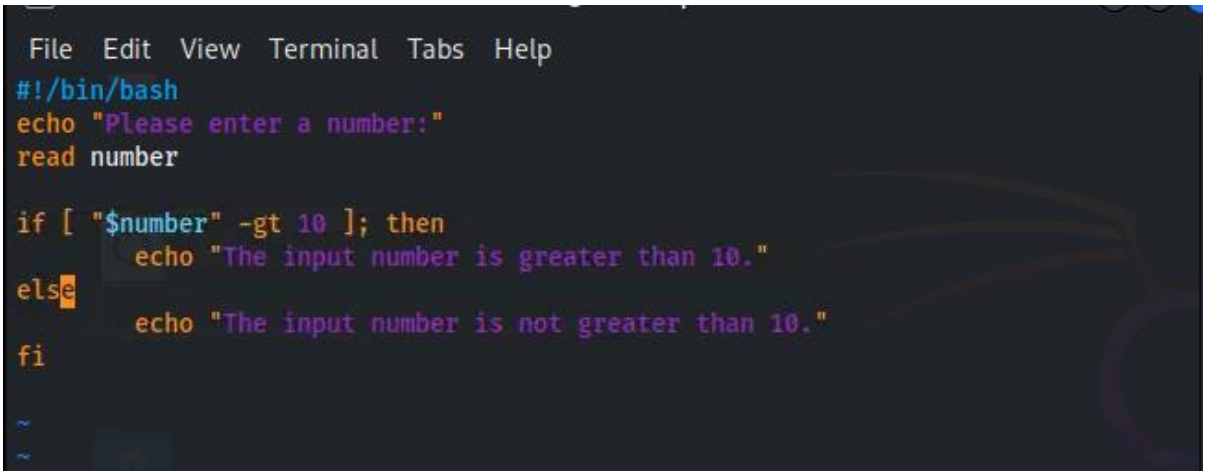
1. Add the Shebang (#!/bin/bash) as the first line in your script.

2. Read a number using read function

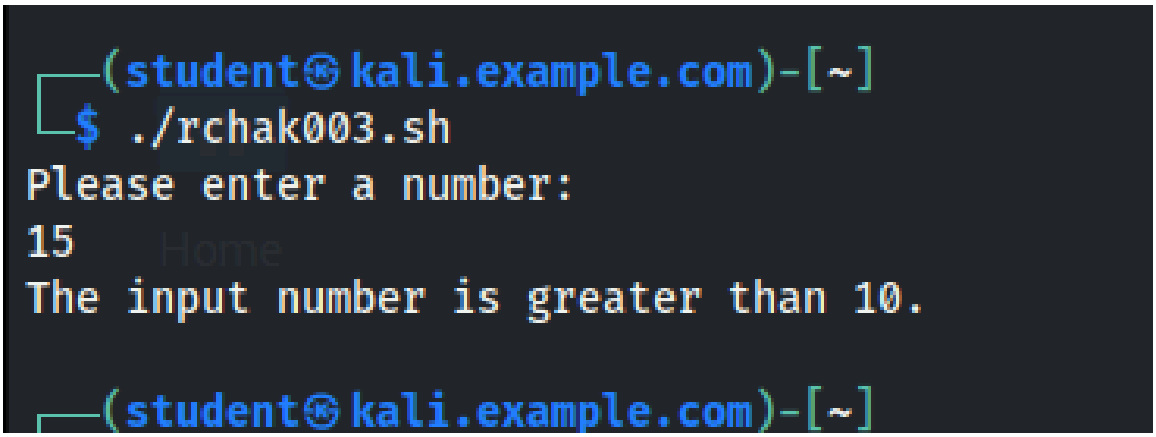
3. Using if statement, check if the input number is greater than 10, then print the message "Input number is greater than 10.

4. If the number is not greater than 10, then print the message, "Input number is not greater than 10.

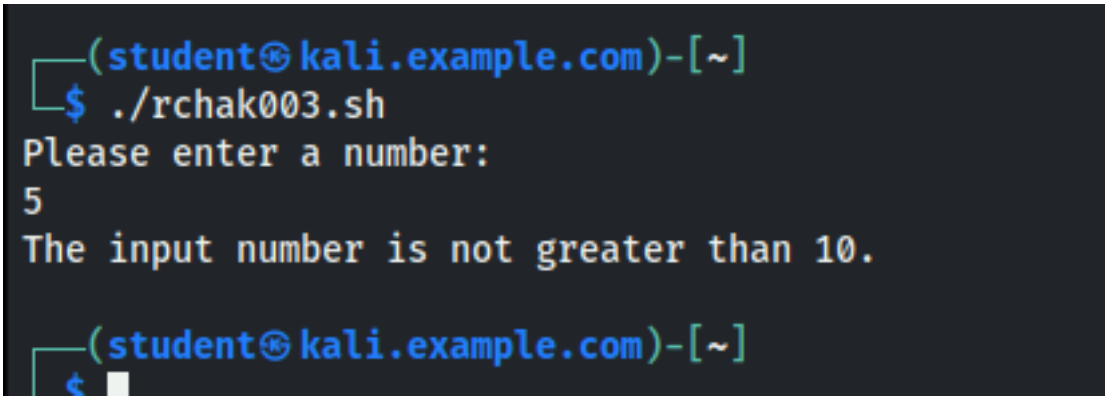
Codes in vi editor of rchak003.sh



Output when input is greater than 10



Output when input is less than 10



Task B (Correct script (25 points) + result/output after executing the script (25 points) - Shell Script to Create a new file

Write a shell script using nano or vi editor (eg, nano scriptname.sh) like below, that performs the following task:

1. Add the Shebang (#!/bin/bash) as the first line in your script.

2. Reads the name of the file to check for a filename that exists.

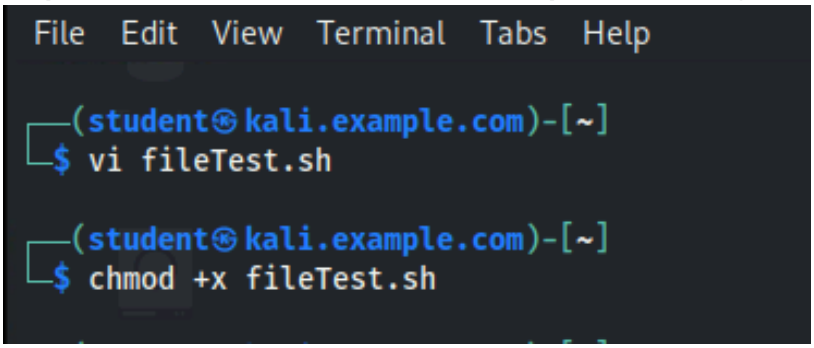
3. Check whether the given input is a directory or regular file.

4. If the input is a directory and exists, then display the message “Directory exists”.

5. If the input is a regular file, then display the message “It is a regular file, and the file exists” and display the contents of the file.

6. If the given input name in step-1 doesn’t exist, then create the new file with the given name in step-1.

Step1: fileTest.sh created and executable permission is given



Step2: Wrote codes in vi editor of fileTest.sh

```
File  Edit  View  Terminal  Tabs  Help
#!/bin/bash
echo "Enter the filename to check: "
read filename

if [ -e "$filename" ]; then
        echo "The file exists."
        if [ -d "$filename" ]; then
                echo "Directory exists."
        elif [ -f "$filename" ]; then
                echo "It is a regular file, and the file exists."
        fi

else
        touch "$filename"
        echo "The file "$filename" does not exist. A new file has been created."
fi
~
~
~
```

Step3: Checked all the three conditions:

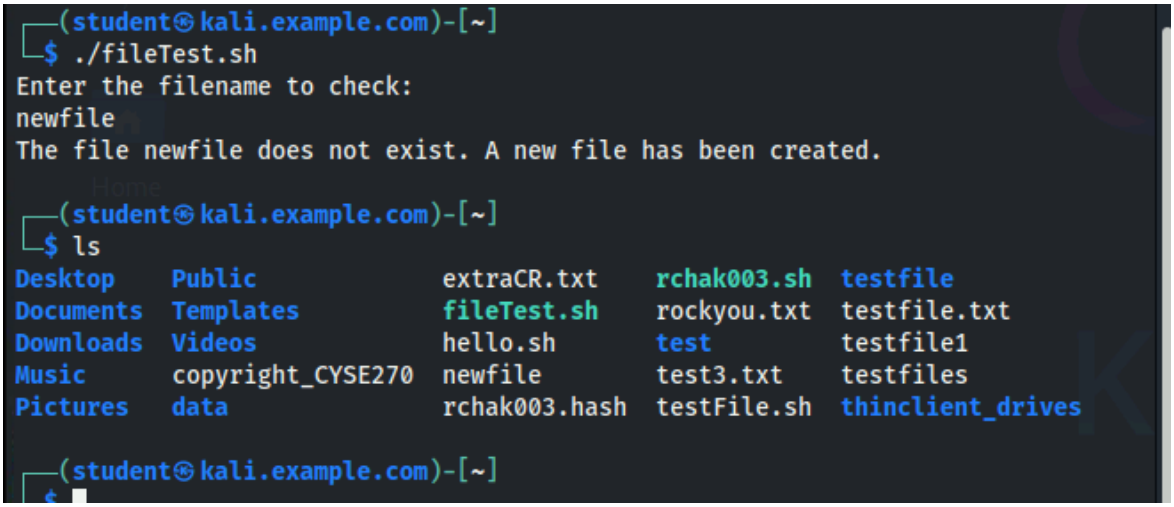
1. First condition checked: File exists, and it is a regular file

```
┌──(student㉿kali.example.com)-[~]
└─$ ./fileTest.sh
Enter the filename to check:
testfile.txt
The file exists.
It is a regular file, and the file exists.

┌──(student㉿kali.example.com)-[~]
```

2. Second condition checked: File exists, and it is a directory.

```
┌──(student㉿kali.example.com)-[~]
└─$ ./fileTest.sh
Enter the filename to check:
testfile
The file exists.
Directory exists.

┌──(student㉿kali.example.com)-[~]
```

3. Third condition checked: File does not exist. Created a new file



(Extra credit: 10 points) Add your name to the file (using redirection operator '>') and display the contents for the newly created file.

7. Save and exit the editor and remember to make the script executable using the command chmod +x scriptname.sh)

- ***Continuation of previous steps with third condition: If the file named "lab-8.txt" does not exist, created a new file named and, added my name in the contents of the file using the following commands:***

  echo "Reema" >> "$filename"

  echo "The contents of the file are:"

  cat "$filename"

```
else
        touch "$filename"
        echo "The file "$filename" does not exist. A new file has been created."
        echo "Reema" >> "$filename"
        echo "The contents of the file are: "
        cat "$filename"
fi
~
~
~
~
"fileTest.sh" 19L, 448B                                    18,16-23      All
```

Output when filename doesn't exist and created a new file and showed the content:

```
┌──(student㉿kali.example.com)-[~]
└─$ ./fileTest.sh
Enter the filename to check:
lab-8.txt
The file lab-8.txt does not exist. A new file has been created.
The contents of the file are:
Reema

┌──(student㉿kali.example.com)-[~]
└─$
```

Extra Credit(15 points)- Check Directory

Write a script like below that

1. Reads Two variables- your name and the name of the directory as input.

2. Your script should check for the validity of the given directory name, if the entered filename is a directory, then display its contents

3. If the directory doesn't exist, then print an error message "Sorry, the entered directory name is not a valid directory name."

4. You need to execute your script and test the following directories to test with your script

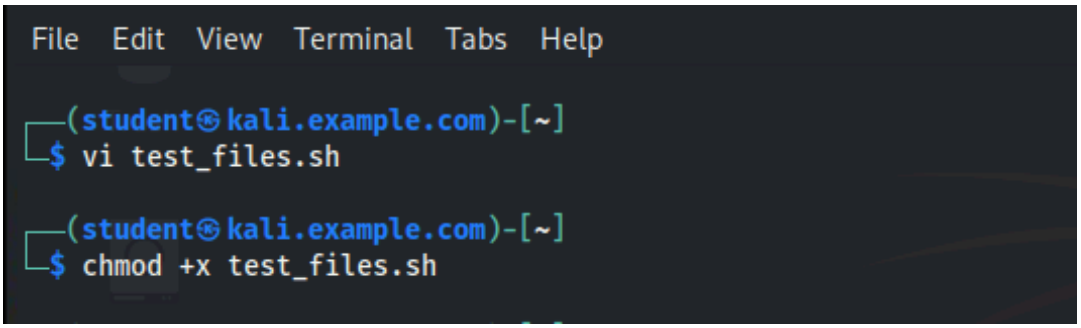
- /etc/systemd
- /home
- A directory that does not exist

Display the contents for the directories you have entered

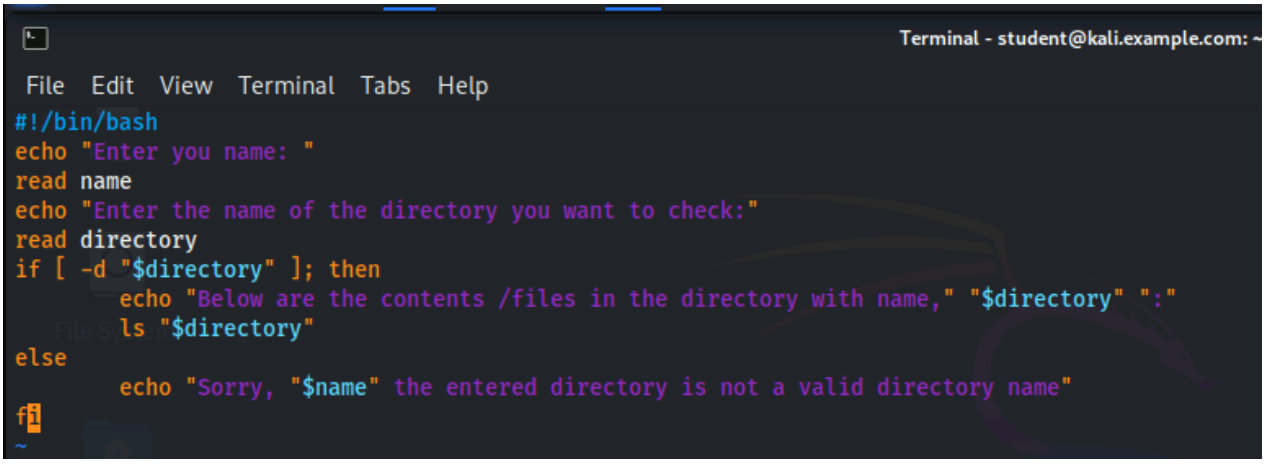
(See the screenshot below where the script has been executed 3 times to check for the Three different directory names as the test input)

Step 1: Created test_files.sh in vi editor

Step 2: Given executable permission using command: chmod +x test_files.sh



Step 3: Wrote codes in test_files using vi editor



Step 3: Executed the test_files using command: ./test_files.sh

Step 4: Entered input as: /etc/system and,

showed the contents of the directory

```
File  Edit  View  Terminal  Tabs  Help
┌──(student㉿kali.example.com)-[~]
└─$ ./test_files.sh
Enter you name:
Reema
Enter the name of the directory you want to check:
/etc/systemd
Below are the contents /files in the directory with name, /etc/systemd :
journald.conf  logind.conf  network  networkd.conf  pstore.conf  sleep.conf
 system  system.conf  timesyncd.conf  user  user.conf
```

Step5: Entered input as: /home and,

showed its contents

```
┌──(student㉿kali.example.com)-[~]
└─$ ./test_files.sh
Enter you name:
Reema
Enter the name of the directory you want to check:
/home
Below are the contents /files in the directory with name, /home :
Emma  Olivia  Sophia  cyse_project  student
```

Step6: Entered input as: desktop (not valid directory) and,

got the following output

```
┌──(student㉿kali.example.com)-[~]
└─$ ./test_files.sh
Enter you name:
Reema
Enter the name of the directory you want to check:
desktop
Sorry, Reema the entered directory is not a valid directory name

┌──(student㉿kali.example.com)-[~]
└─$
```