

CYSE 270: Linux System for Cybersecurity

Lab 8 – Shell Scripting (Total 100 Points)

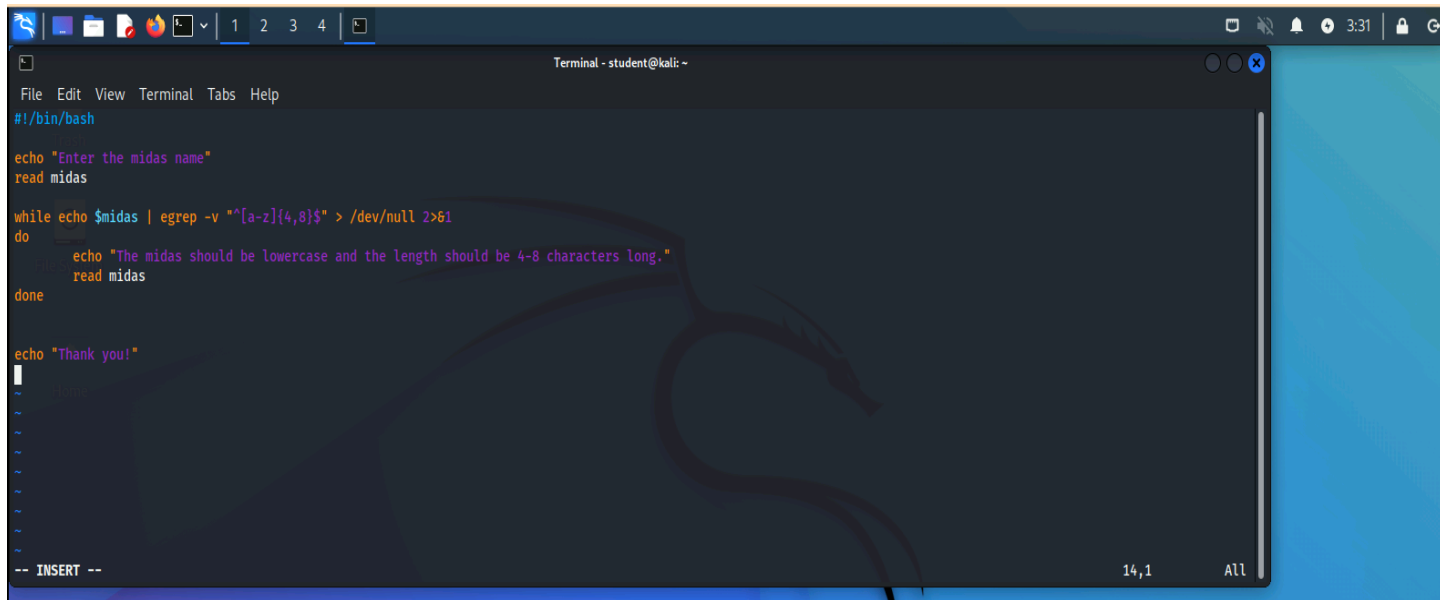
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Please Refer to the slides for week-8-Shell scripting and write shell scripts to complete the following tasks. **Submit the screenshot for the script and its output, both.**

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.

Task A (Correct script (25 points) + result/output after executing the script (25 points))- Take your MIDAS/name

Write a script like below that reads **MIDAS/name** and displays the message (for example, the screenshot here), if the following requirements are satisfied: 1. Only lower-case letter [a-z] are allowed 2. MIDAS/name must be between 4 to 8 digits



```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
#!/bin/bash

echo "Enter the midas name"
read midas

while echo $midas | egrep -v "^[a-z]{4,8}$" > /dev/null 2>&1
do
    echo "The midas should be lowercase and the length should be 4-8 characters long."
    read midas
done

echo "Thank you!"

-- INSERT --
```

Test your script with the following examples:

- Your MIDAS /name **with one upper case**
- A string **less than 4 digits**
- A string **longer than 8 digits**
- Your MIDAS/name in lower case, between 4-8 characters in length

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
(student@kali)-[~]
$ vi lab-8-task-a.sh
(student@kali)-[~]
$ chmod a+x lab-8-task-a.sh
(student@kali)-[~]
$ ./lab-8-task-a.sh
Enter the midas name
Arich036
The midas should be lowercase and the length should be 4-8 characters long.
ari
The midas should be lowercase and the length should be 4-8 characters long.
arich0367
The midas should be lowercase and the length should be 4-8 characters long.
arich036
The midas should be lowercase and the length should be 4-8 characters long.
arich
Thank you!
(student@kali)-[~]
$
```

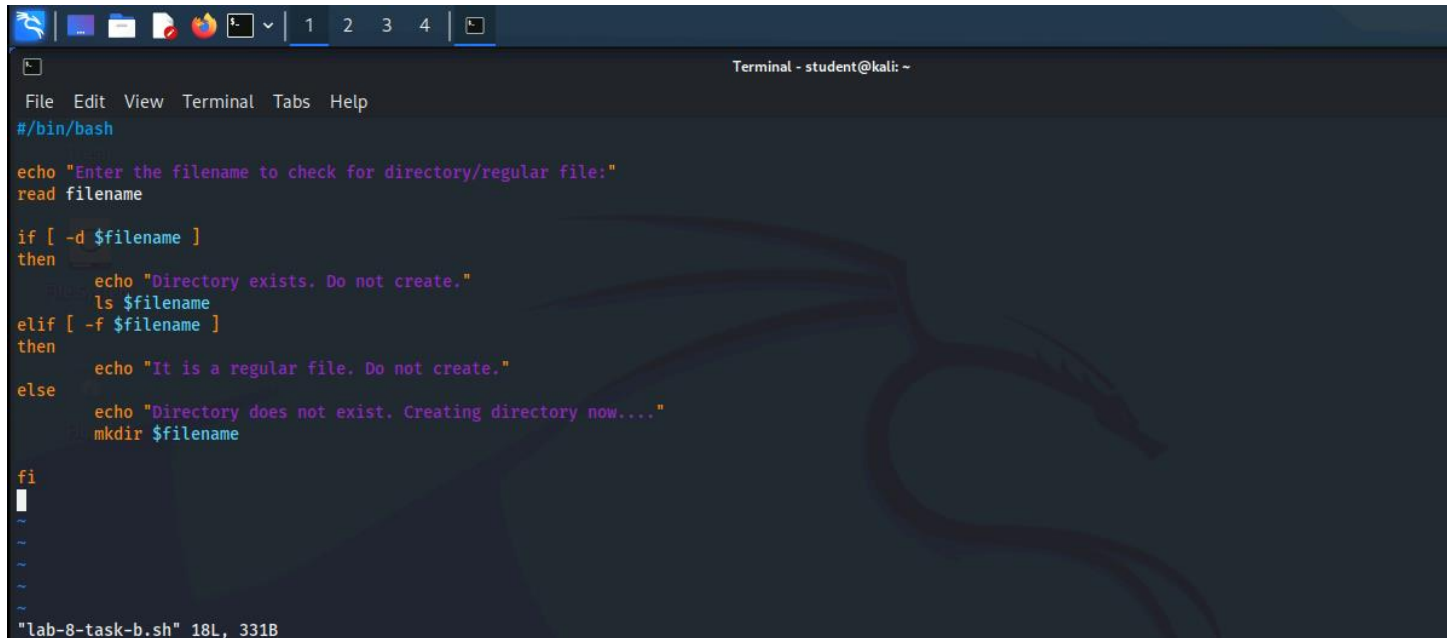
```
Enter your MIDAS ID:
Svats
You must enter a valid MIDAS ID It must be lowercase and between 4-8 characters only !
Try again:
sv
You must enter a valid MIDAS ID It must be lowercase and between 4-8 characters only !
Try again:
shobhavatsa
You must enter a valid MIDAS ID It must be lowercase and between 4-8 characters only !
Try again:
svatsa
Thank you! Your MIDAS ID is: svatsa
```

Task B (Correct script (25 points) + result/output after executing the script (25 points))

- Create a new directory

Write a shell script like below, that performs the following task:

1. **Reads** the name of the directory.
2. Check whether the given input is a directory or regular file.
3. If the input is a directory and exists, then display the message "Directory exists. Do not create".
 - a. **(Extra credit: 10 points)** Display the contents for that directory)
4. If the input is a regular file, then display the message "It is a regular file. Do not create".
5. **If the given input name in step-1 doesn't exist**, then create the new directory with the given name in step-1.

A screenshot of a terminal window titled "Terminal - student@kali: ~". The terminal shows a shell script being executed. The script prompts the user to enter a filename, then checks if it is a directory or a regular file. If it's a directory, it lists its contents. If it's a regular file, it displays a message. If it doesn't exist, it creates the directory. The script is named "lab-8-task-b.sh" and is 18 lines long, 331B in size. The terminal output shows the script's execution flow, including the prompt, the user's input, and the resulting messages and actions.

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
# /bin/bash

echo "Enter the filename to check for directory/regular file:"
read filename

if [ -d $filename ]
then
    echo "Directory exists. Do not create."
    ls $filename
elif [ -f $filename ]
then
    echo "It is a regular file. Do not create."
else
    echo "Directory does not exist. Creating directory now..."
    mkdir $filename
fi

"lab-8-task-b.sh" 18L, 331B
```

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
$ vi lab-8-task-b.sh

(student@kali)-[~]
$ chmod a+x lab-8-task-b.sh

(student@kali)-[~]
$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
/home
Directory exists. Do not create.
student

(student@kali)-[~]
$ /etc/passwd
bash: /etc/passwd: Permission denied

(student@kali)-[~]
$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
/etc/passwd
It is a regular file. Do not create.

(student@kali)-[~]
$
```

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
Enter the filename to check for directory/regular file:
/etc/passwd
It is a regular file. Do not create.

(student@kali)-[~]
$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
arich036
Directory does not exist. Creating directory now...

(student@kali)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos arich036 lab-8-task-a.sh lab-8-task-b.sh thinclient_drives

(student@kali)-[~]
$ ls -l arich036
total 0

(student@kali)-[~]
$ ls -ld arich036
drwxr-xr-x 2 student student 4096 Apr 29 04:07 arich036

(student@kali)-[~]
$
```

(Sample screenshot for executing the script is shown below)

```
svatsa@svatsa-VirtualBox:~/script$ ./create_dir.sh
Enter the directory
/home
Directory exists! Do not create
svatsa@svatsa-VirtualBox:~/script$ ./create_dir.sh
Enter the directory
/etc/passwd
It is a regular file. Do not create.
svatsa@svatsa-VirtualBox:~/script$ ./create_dir.sh
Enter the directory
test_dir
Directory doesn't exist, creating test_dir now...
svatsa@svatsa-VirtualBox:~/script$ ls -l
```

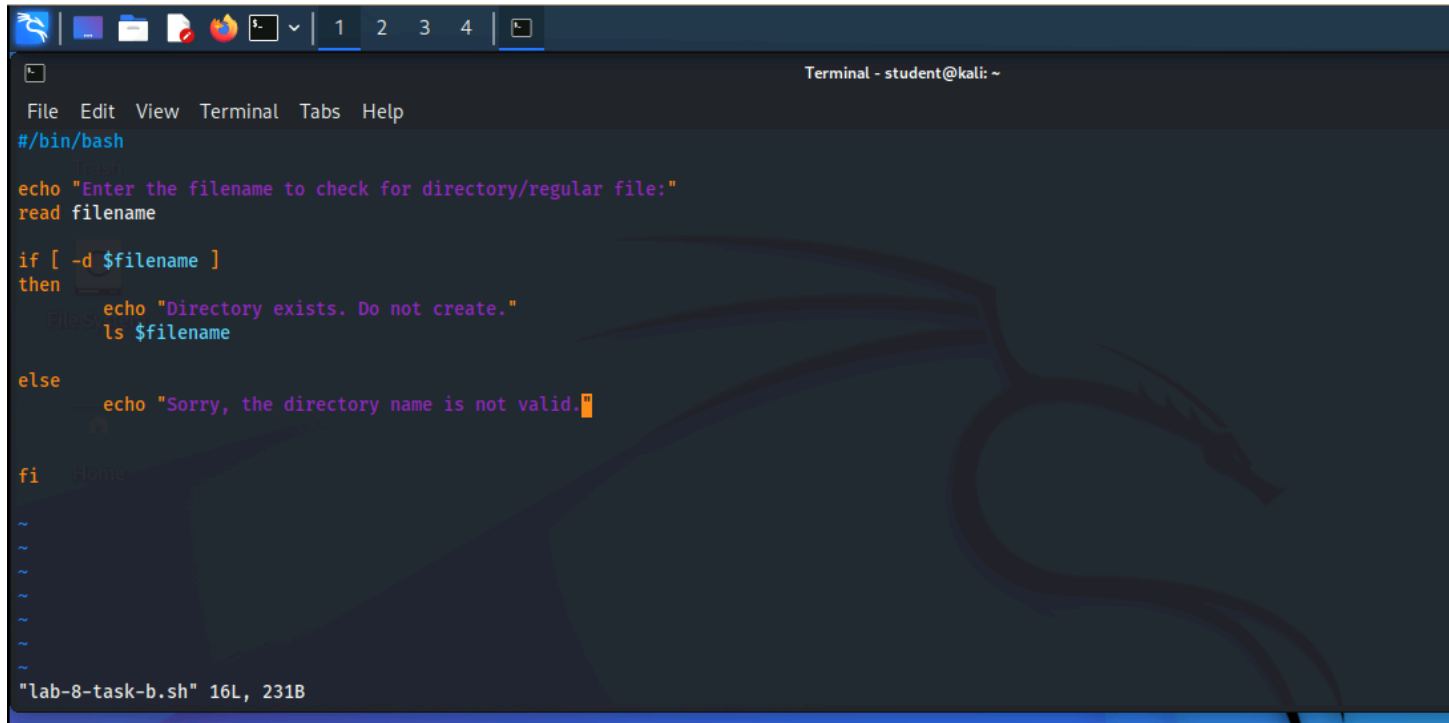
Extra Credit(15 points)- Check files

Write a script like below that

1. Gets 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 or and pop out an error if an invalid directory name is entered.
3. You need to execute your script and test the following directories with your script (sample screenshot for executing the script is shown below in the screenshot):

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

Display the contents for the directories you have entered (See the screenshot below)



The image shows a terminal window titled "Terminal - student@kali: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content is a shell script that prompts the user to enter a filename to check if it is a directory or a regular file. The script uses an if statement to check if the filename is a directory (-d). If it is, it echoes "Directory exists. Do not create." and lists the contents with ls. If it is not a directory, it echoes "Sorry, the directory name is not valid." The script ends with a fi statement. The terminal shows the script being executed, with several empty lines indicating user input. The status bar at the bottom shows the file name "lab-8-task-b.sh" and its size "16L, 231B".

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
# /bin/bash
echo "Enter the filename to check for directory/regular file:"
read filename

if [ -d $filename ]
then
    echo "Directory exists. Do not create."
    ls $filename
else
    echo "Sorry, the directory name is not valid."
fi

~
~
~
~
~
~
"lab-8-task-b.sh" 16L, 231B
```

```
Terminal - student@kali: ~
File Edit View Terminal Tabs Help
└─$ vi lab-8-task-b.sh

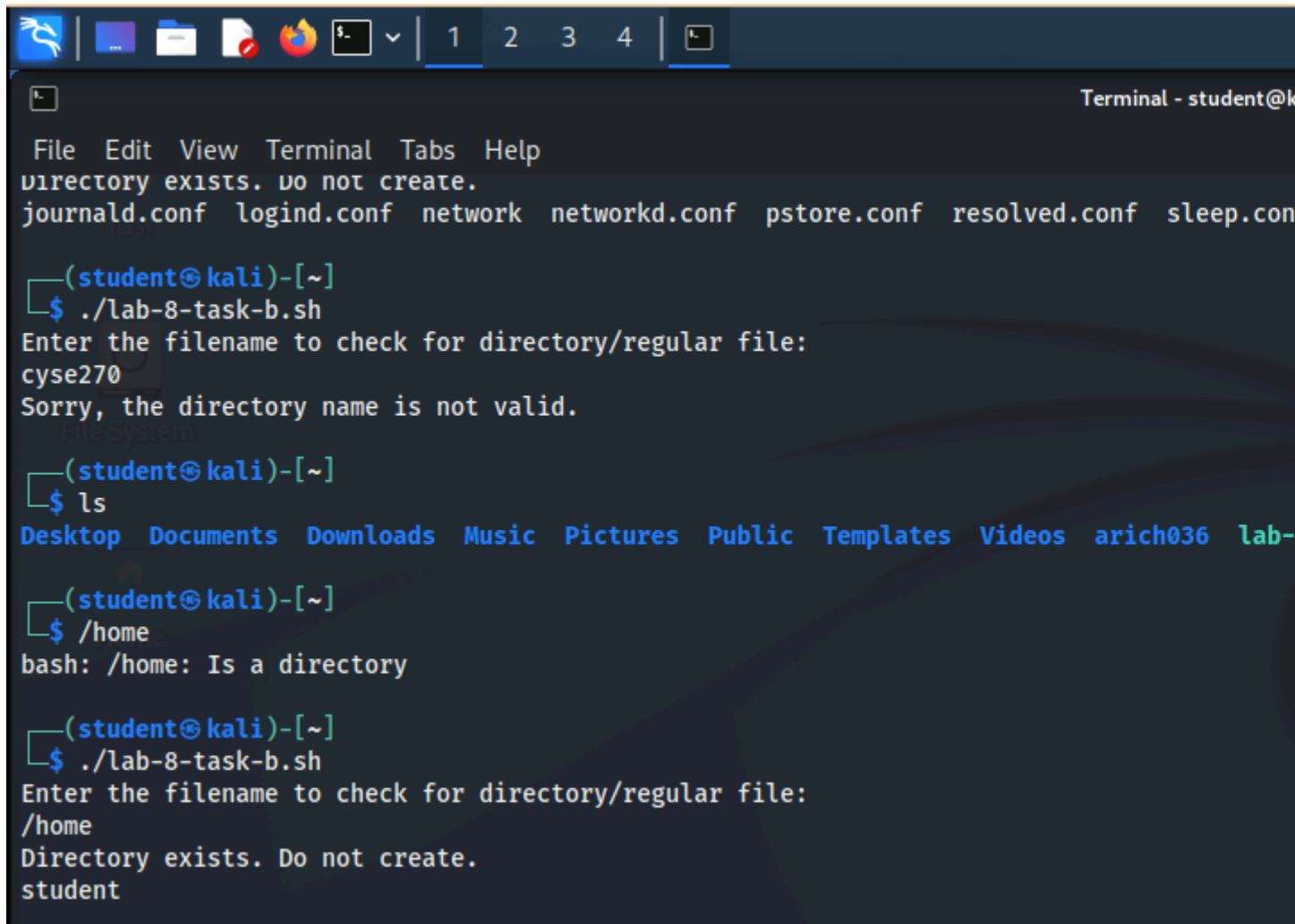
(student@kali)-[~]
└─$ vi lab-8-task-b.sh

(student@kali)-[~]
└─$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
/etc/systemd
Directory exists. Do not create.
journald.conf logind.conf network networkd.conf pstore.conf resolved.conf sleep.conf system system.conf timesyncd.conf user user.conf

(student@kali)-[~]
└─$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
cyse270
Sorry, the directory name is not valid.

(student@kali)-[~]
└─$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos arich036 lab-8-task-a.sh lab-8-task-b.sh thinclient_drives

(student@kali)-[~]
└─$
```



```
File Edit View Terminal Tabs Help
directory exists. do not create.
journal.conf logind.conf network networkd.conf pstore.conf resolved.conf sleep.conf

(student@kali)-[~]
$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
cyse270
Sorry, the directory name is not valid.

(student@kali)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos arich036 lab-

(student@kali)-[~]
$ /home
bash: /home: Is a directory

(student@kali)-[~]
$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
/home
Directory exists. Do not create.
student
```



```
└─$ ./check_files.sh
Type your MIDAS: svatsa
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  network      pstore.conf  sleep.conf  system.conf  user
logind.conf    networkd.conf resolved.conf system      timesyncd.conf user.conf

(svatsa@svatsa)-[~]
└─$ ./check_files.sh
Type your MIDAS: svatsa
Enter the name of the directory you want to check:
/home
Below are the contents /files in the directory with name , /home:
svatsa

(svatsa@svatsa)-[~]
└─$ ./check_files.sh
Type your MIDAS: svatsa
Enter the name of the directory you want to check:
desktop
Sorry svatsa, the entered directory desktop is not a valid directory name.
```

Please note:

Each student needs to screenshot your source code and the output after executing the script.