CYSE 270: Linux System for Cybersecurity
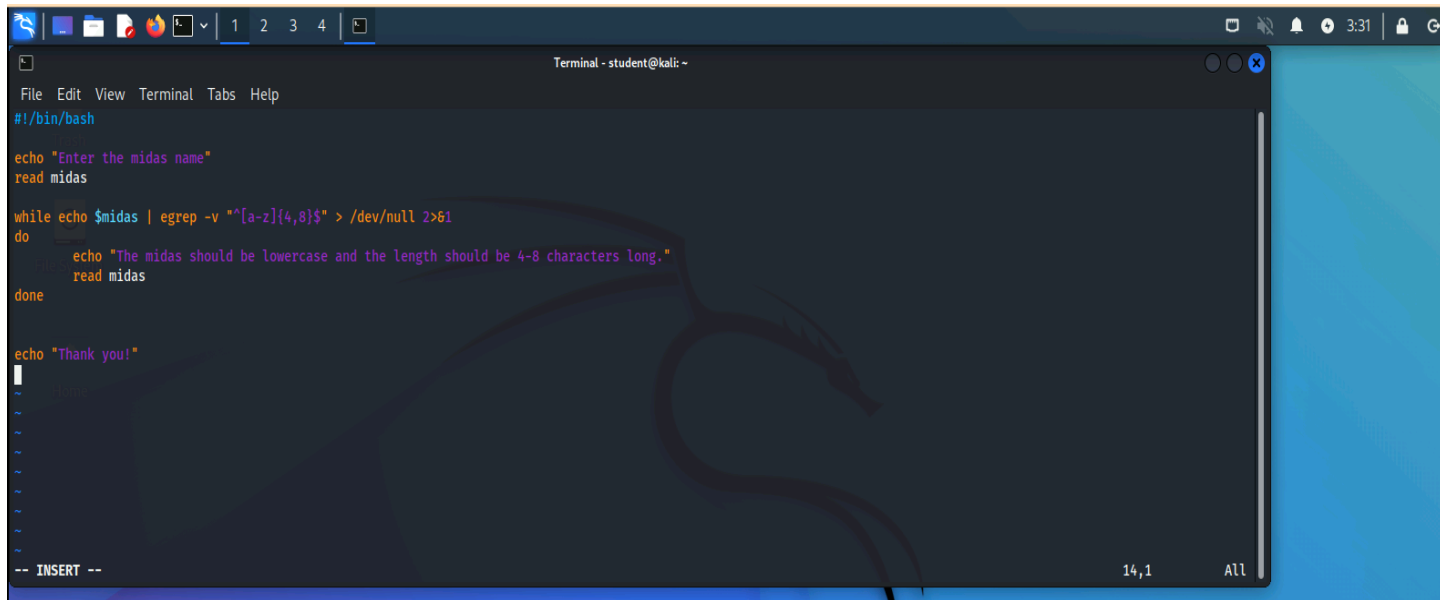
Lab 8 – Shell Scripting (Total 100 Points)

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

• 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
┌──(student㊀kali)-[~]
└─$ vi lab-8-task-a.sh

┌──(student㊀kali)-[~]
└─$ chmod a+x lab-8-task-a.sh

┌──(student㊀kali)-[~]
└─$ ./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!

┌──(student㊀kali)-[~]
└─$
```
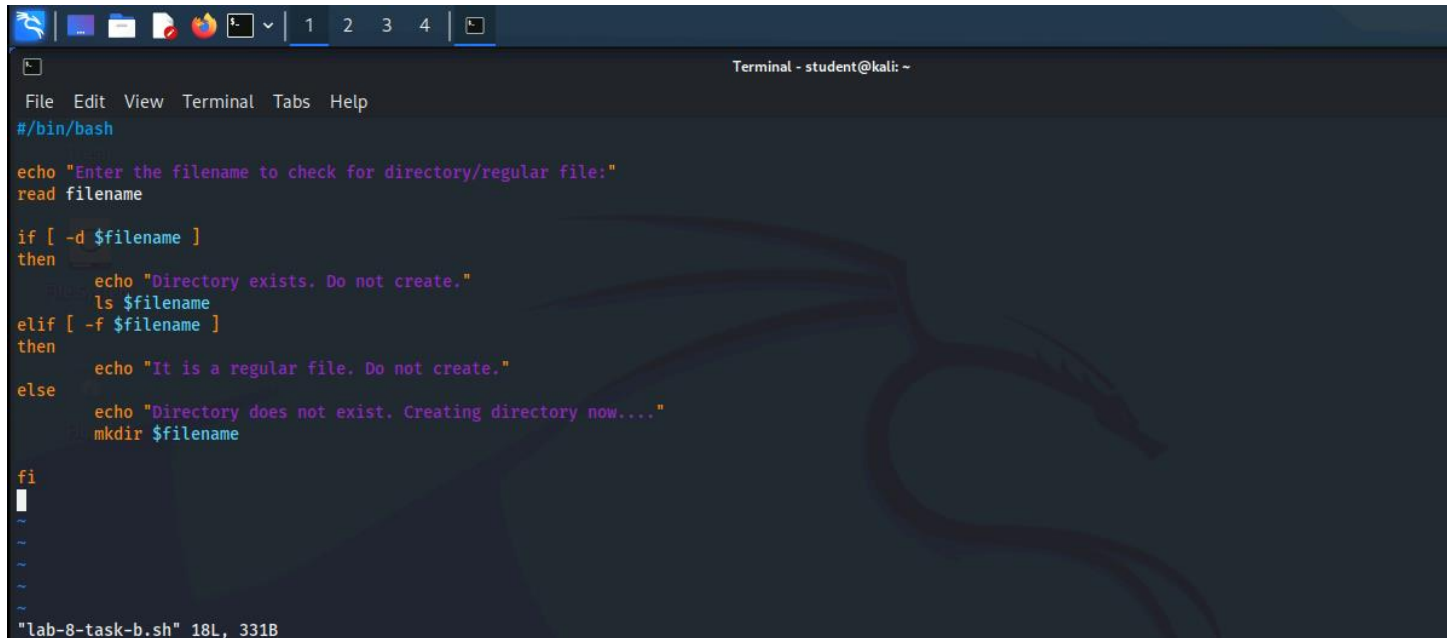
```
Enter your MIDAS ID:
Svats
You must enter a valid MIDAS ID  It must be lowercase and betwen 4-8 characters only !
Try again:
sv
You must enter a valid MIDAS ID  It must be lowercase and betwen 4-8 characters only !
Try again:
shobhavatsa
You must enter a valid MIDAS ID  It must be lowercase and betwen 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.

```
#/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

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

```
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 doesnn't exist, creating test_dir now...
svatsa@svatsa-VirtualBox:~/script$ ls -l
```
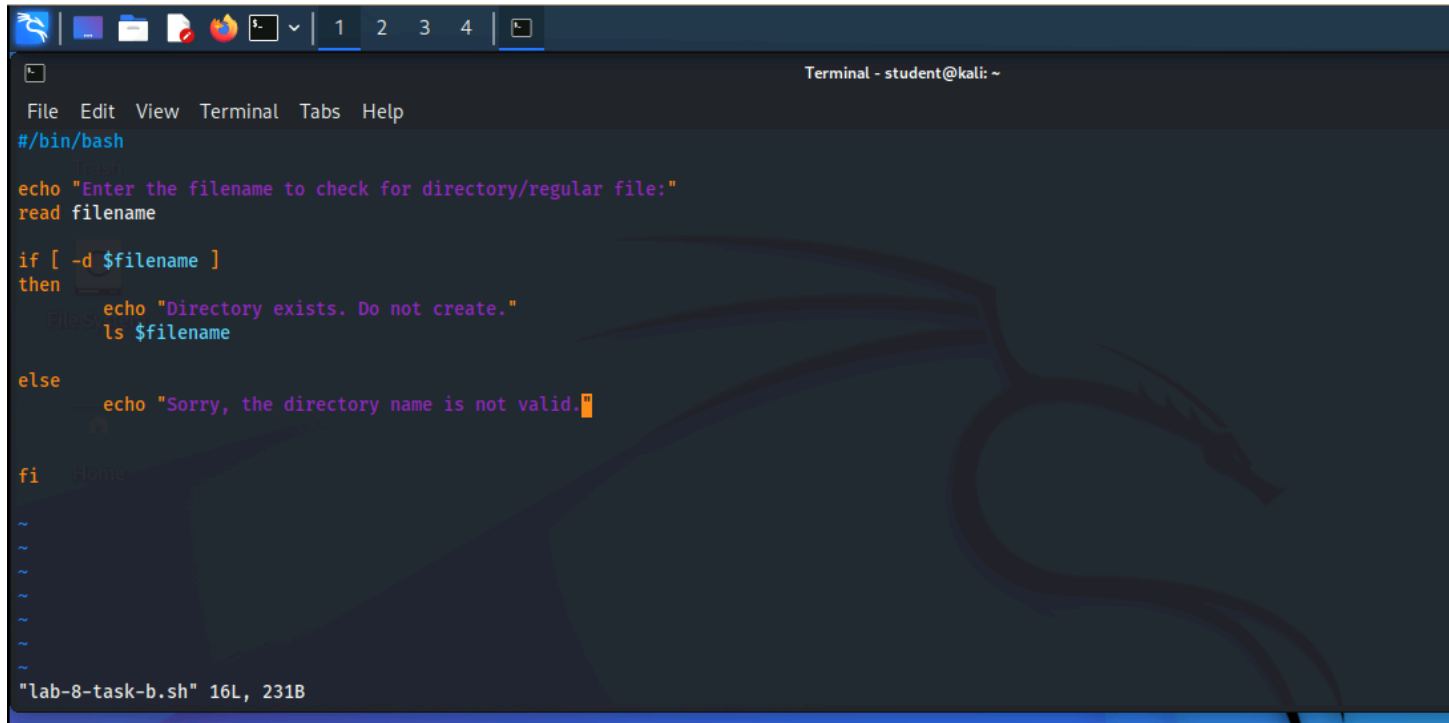
Extra Credit(15 points)- Check files

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)

```bash
#/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
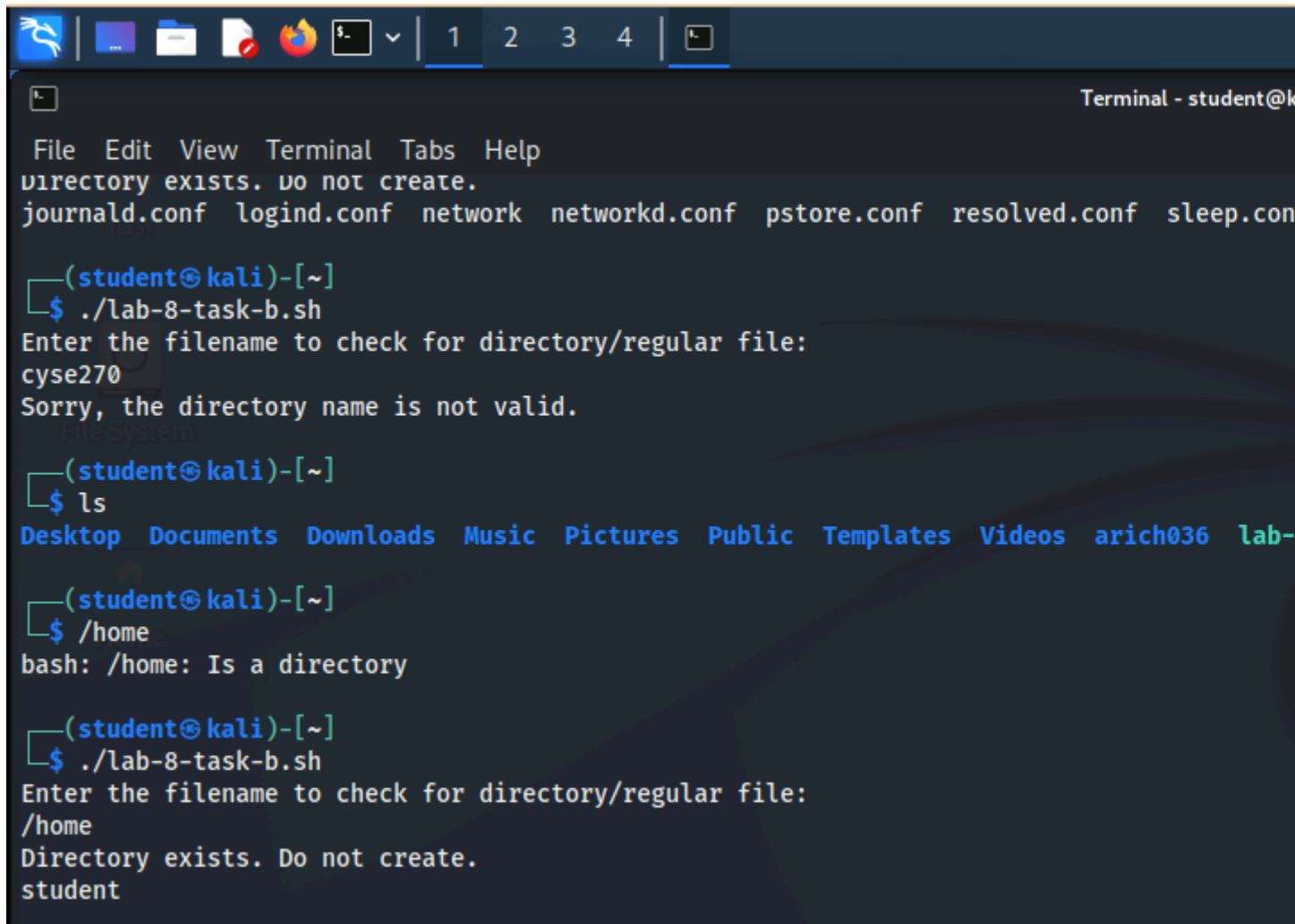
```
└$ vi lab-8-task-b.sh

┌──(student㊀kali)-[~]
└$ vi lab-8-task-b.sh

┌──(student㊀kali)-[~]
└$ ./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

┌──(student㊀kali)-[~]
└$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
cyse270
Sorry, the directory name is not valid.

┌──(student㊀kali)-[~]
└$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos  arich036  lab-8-task-a.sh  lab-8-task-b.sh  thinclient_drives

┌──(student㊀kali)-[~]
└$ 
```

File Edit View Terminal Tabs Help

Directory exists. Do not create.
journald.conf logind.conf network networkd.conf pstore.conf resolved.conf sleep.con

┌──(student㊀kali)-[~]
└─$ ./lab-8-task-b.sh
Enter the filename to check for directory/regular file:
cyse270
Sorry, the directory name is not valid.

┌──(student㊀kali)-[~]
└─$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos arich036 lab-

┌──(student㊀kali)-[~]
└─$ /home
bash: /home: Is a directory

┌──(student㊀kali)-[~]
└─$ ./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.