

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.

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

Solution below

I used nano to complete the tasks for the assignment.

```
christopher@christopher-VirtualBox:~$ nano lab-8-task-a.sh

GNU nano 6.2 lab-8-task-a.sh
#!/bin/bash

echo "Enter your MIDAS ID:"
read chris

while echo $chris | egrep -v "^[a-z]{4,8}$" > /dev/null 2>&1
do
echo "You must enter a valid MIDAS ID. Your MIDAS ID should be lowercase and between 4-8 characters only."
read chris
done

echo "Thank you!"
```

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

Solution below

```
christopher@christopher-VirtualBox:~$ nano lab-8-task-a.sh
christopher@christopher-VirtualBox:~$ chmod a+x lab-8-task-a.sh
christopher@christopher-VirtualBox:~$ ./lab-8-task-a.sh
Enter your MIDAS ID:
Chris
You must enter a valid MIDAS ID. Your MIDAS ID should be lowercase and between 4-8 characters only.
ch
You must enter a valid MIDAS ID. Your MIDAS ID should be lowercase and between 4-8 characters only.
christopher
You must enter a valid MIDAS ID. Your MIDAS ID should be lowercase and between 4-8 characters only.
chris
Thank you!
christopher@christopher-VirtualBox:~$
```

```
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.

Solution below

```
GNU nano 6.2 lab-8-task-b.sh
#!/bin/bash

echo "Enter an input to check if subject is a directory or a 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

christopher@christopher-VirtualBox:~$ chmod a+x lab-8-task-b.sh
christopher@christopher-VirtualBox:~$ ./lab-8-task-b.sh
Enter an input to check if subject is a directory or a regular file:
/home
Directory exists. Do not create
alice          cyse_project  Emma   sophia   TestFile2  TestFile5  testuser2  testuser5  user2  user5
christopher    cyse_project  olivia sophia   TestFile3  TestFile6  testuser3  testuser6  user3  user6
christopher1   emma         Olivia TestFile1 TestFile4  testuser1  testuser4  user1    user4
christopher@christopher-VirtualBox:~$ ./lab-8-task-b.sh
Enter an input to check if subject is a directory or a regular file:
/etc/passwd
It is a regular file. Do not create.
christopher@christopher-VirtualBox:~$ ./lab-8-task-b.sh
Enter an input to check if subject is a directory or a regular file:
book
Directory does not exist. Creating directory now...
christopher@christopher-VirtualBox:~$ ls -l
total 136736
drwxrwxr-x 2 christopher christopher 4096 Apr  1 22:02 book
```

(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)

Solution below

```
christopher@christopher-VirtualBox:~$ nano lab-8-task-b.sh
christopher@christopher-VirtualBox:~$ ./lab-8-task-b.sh
Enter an input to check if subject is a directory or a regular file:
/home
Directory exists. Here are the contents in the directory.
book      Desktop  Downloads  head.sh      lab-8-task-b.sh  ne      newFile.txt  rockyou.txt  tesfile
choss003  dirl1    hash1.hash  Hob0Rules    lab-9.task-a.sh  newFile1  Pictures    snap        testfile
copyright Documents hashfile1.hash lab-8-task-a.sh  Music      newFile2  Public      Templates   Videos
christopher@christopher-VirtualBox:~$ ./lab-8-task-b.sh
Enter an input to check if subject is a directory or a regular file:
apple
Sorry christopher, the directory name entered is not a valid directory name.
christopher@christopher-VirtualBox:~$
```

```
GNU nano 6.2                                lab-8-task-b.sh
#!/bin/bash

echo "Enter an input to check if subject is a directory or a regular file:"
read filename

if [ -d $filename ]
then
echo "Directory exists. Here are the contents in the directory."
ls $filename
else
echo "Sorry christopher, the directory name entered is not a valid directory name."
fi
```

```
└─$ ./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:
journalld.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.