

## CYSE 270: Linux System for Cybersecurity

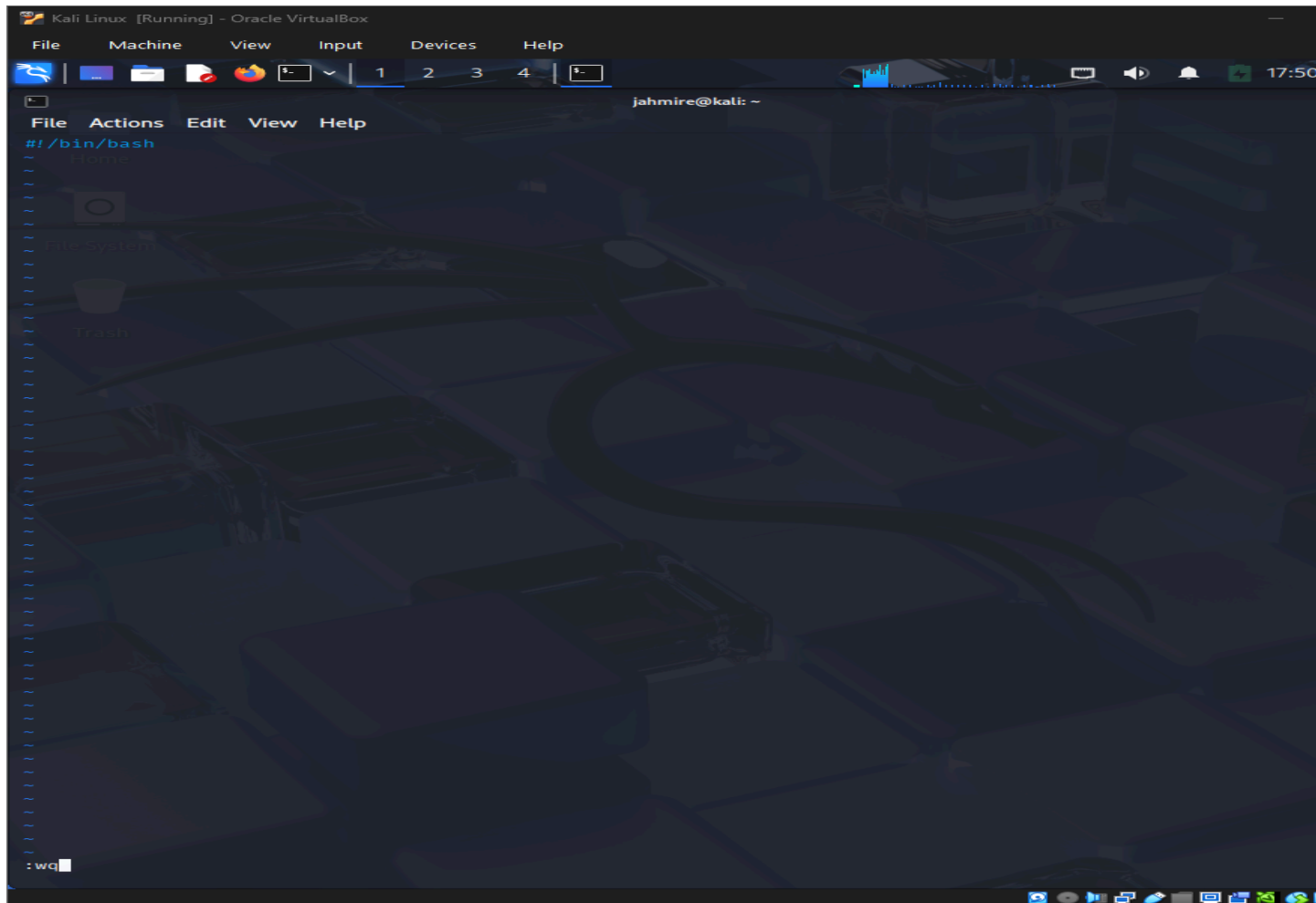
### Lab 8 – Shell Scripting

(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, **vi 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**)



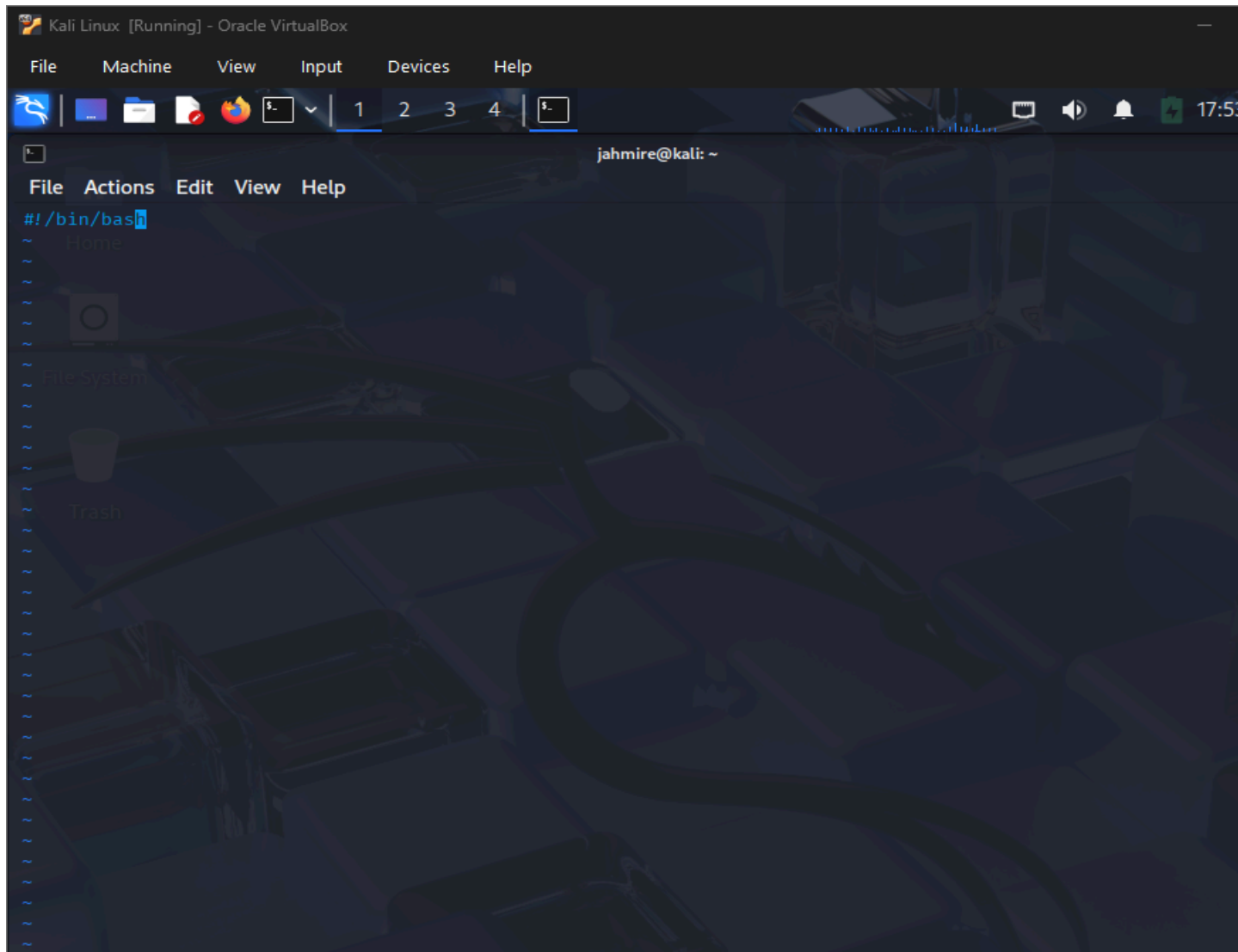
**Step-3:** Run your script using **./YourScriptName.sh**

```
(jahmire@kali)-[~]  
└─$ ./Jahmire.sh
```

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

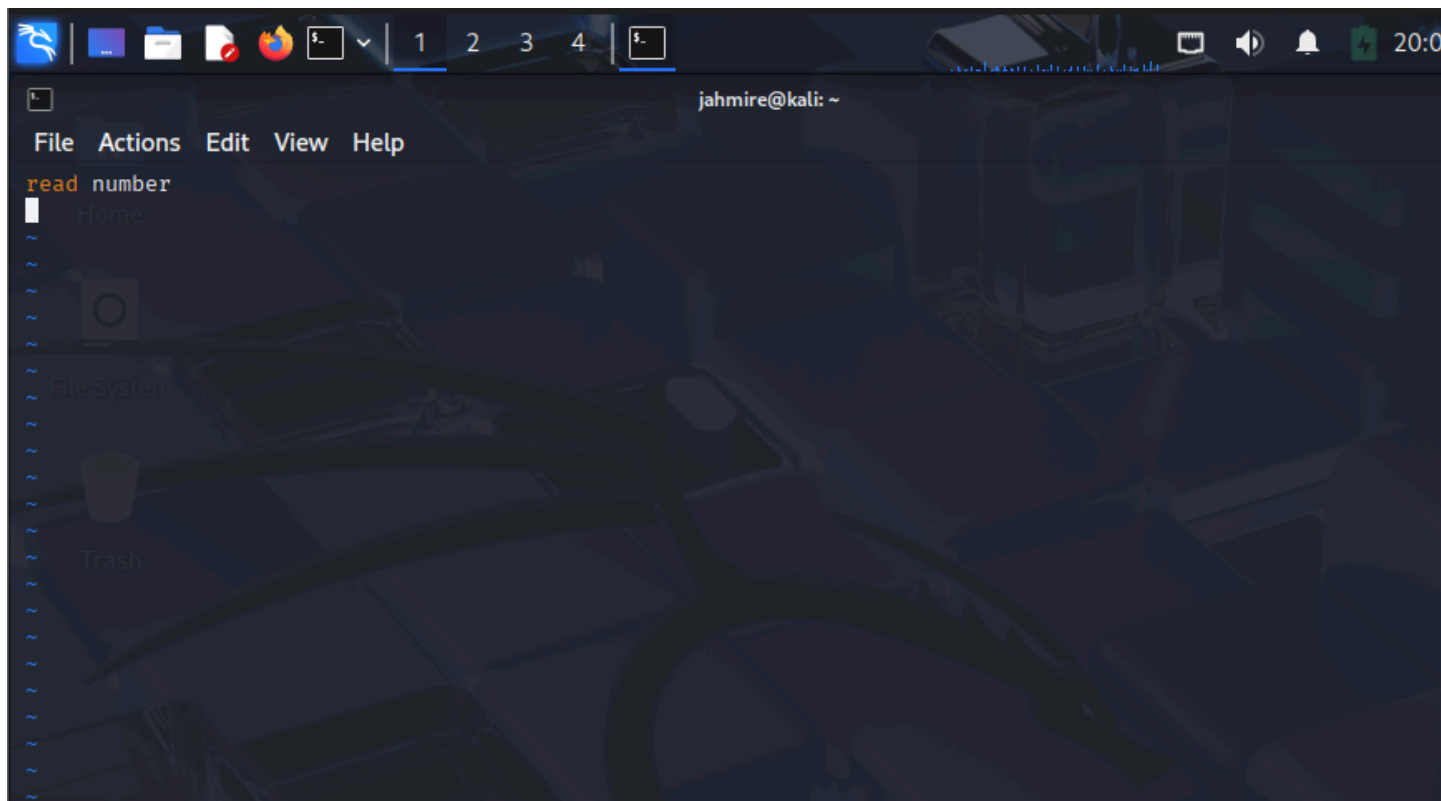
Write a shell script using nano or vi editor (eg, vi scriptname.sh) like below, that performs the following task:

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



```
Kali Linux [Running] - Oracle VirtualBox  
File Machine View Input Devices Help  
jahmire@kali: ~  
File Actions Edit View Help  
#!/bin/bas
```

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**”.

```
(jahmire@kali)-[~]
└─$ ./Jahmire.sh
Enter the number to check
20
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**”.

```
(jahmire@kali)-[~]
└─$ ./Jahmire.sh
Enter the number to check
9
Input bnumber is not greater than 10
```

(Your script should result into the output similar to this sample screenshot after executing as shown below)

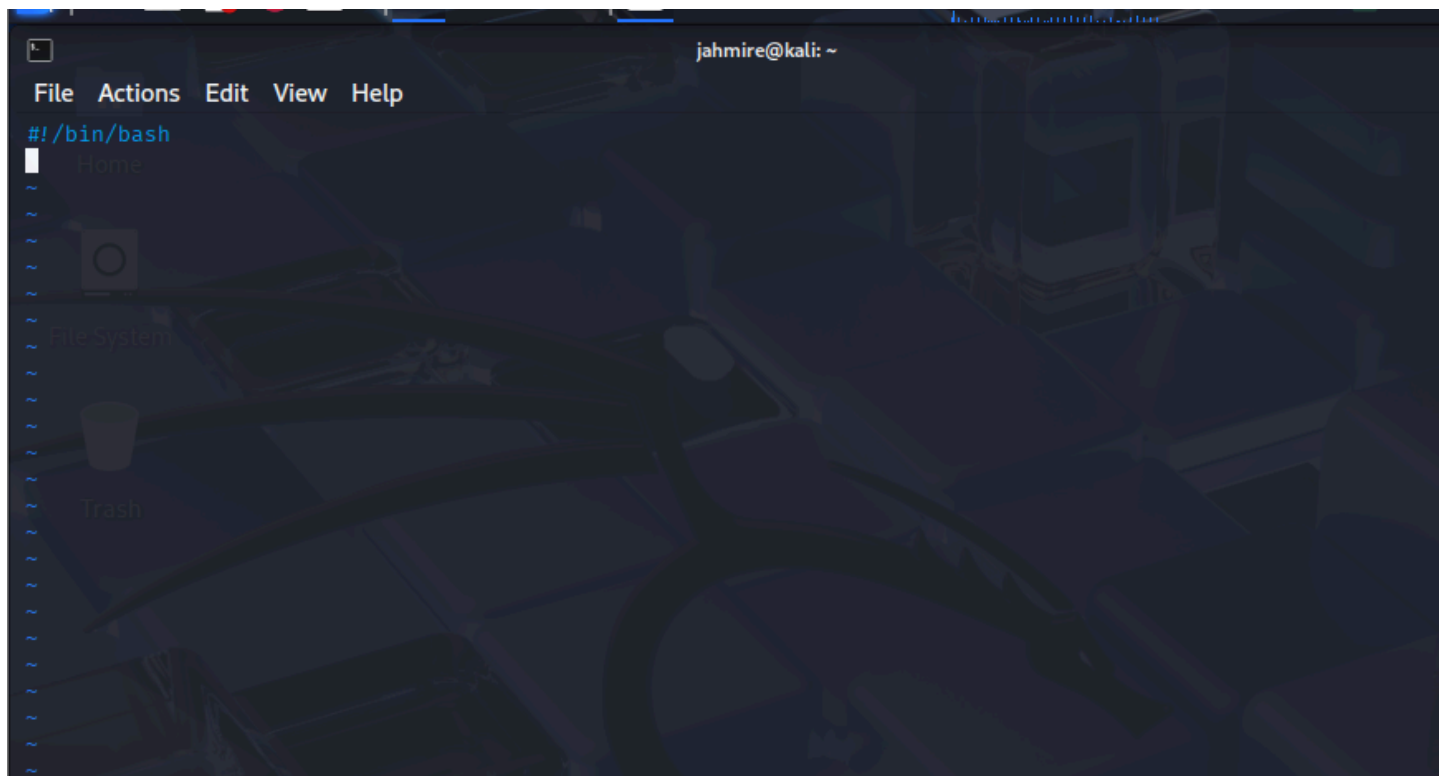
```
(cyse270@CYSE270)-[~]
└─$ ./TaskA.sh
Enter the number to check:
9
Input number is not greater than 10.

(cyse270@CYSE270)-[~]
└─$ ./TaskA.sh
Enter the number to check:
11
Input number is greater 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.

```
#!/bin/bash
dir_name=$1

echo "Checking: $dir_name"
```

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

```
#!/bin/bash
dir_name=$1

if [ -f "$dir_name" ]; then
    echo " '$dir_name' It is a regular file, and the file exists"
    cat $dir_name
elif [ -d "$dir_name" ]; then
    echo " '$dir_name' Directory exists."
```

4. If the input is a directory and exists, then display the message "**Directory exists**".

```
#!/bin/bash
dir_name=$1

if [ -f "$dir_name" ]; then
    echo " '$dir_name' It is a regular file, and the file exists"
    cat $dir_name
elif [ -d "$dir_name" ]; then
    echo " '$dir_name' Directory exists."
else
```

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.

```
#!/bin/bash
dir_name=$1

if [ -f "$dir_name" ]; then
    echo " '$dir_name' It is a regular file, and the file exists"
    cat $dir_name
elif [ -d "$dir_name" ]; then
    echo " '$dir_name' Directory exists."
else
    echo " '$dir_name' Does not exist"
fi
```

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

```
#!/bin/bash
dir_name=$1

if [ -f "$dir_name" ]; then
    echo " '$dir_name' It is a regular file, and the file exists"
    cat $dir_name
elif [ -d "$dir_name" ]; then
    echo " '$dir_name' Directory exists."
else
    echo " '$dir_name' Does not exist"
    touch $dir_name
fi
```

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

```
(jahmire@kali)-[~]
└─$ ./lab8.sh Testfile.txt
'Testfile.txt' Does not exist

(jahmire@kali)-[~]
└─$ ls
backup          Desktop      error_log.txt  Jwhit212.hash  Pictures      rockyou.txt   Testfile.txt
copyright_cyse270 Documents    files_list.txt  lab8.sh         projects     shadow         Videos
data           Downloads   Jahmire.sh     Music           Public       Templates

(jahmire@kali)-[~]
└─$ cat Testfile.txt
Jahmire Whitehurst
```

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

```
(jahmire@kali)-[~]
└─$ chmod +x lab8.sh
```

```
#!/bin/bash
dir_name=$1

if [ -f "$dir_name" ]; then
    echo " '$dir_name' It is a regular file, and the file exists"
    cat $dir_name
elif [ -d "$dir_name" ]; then
    echo " '$dir_name' Directory exists."
else
    echo " '$dir_name' Does not exist"
    touch $dir_name
    echo "Jahmire Whitehurst" > $dir_name
fi
```

(Your script should result into the output similar to this sample screenshot after executing as shown below)

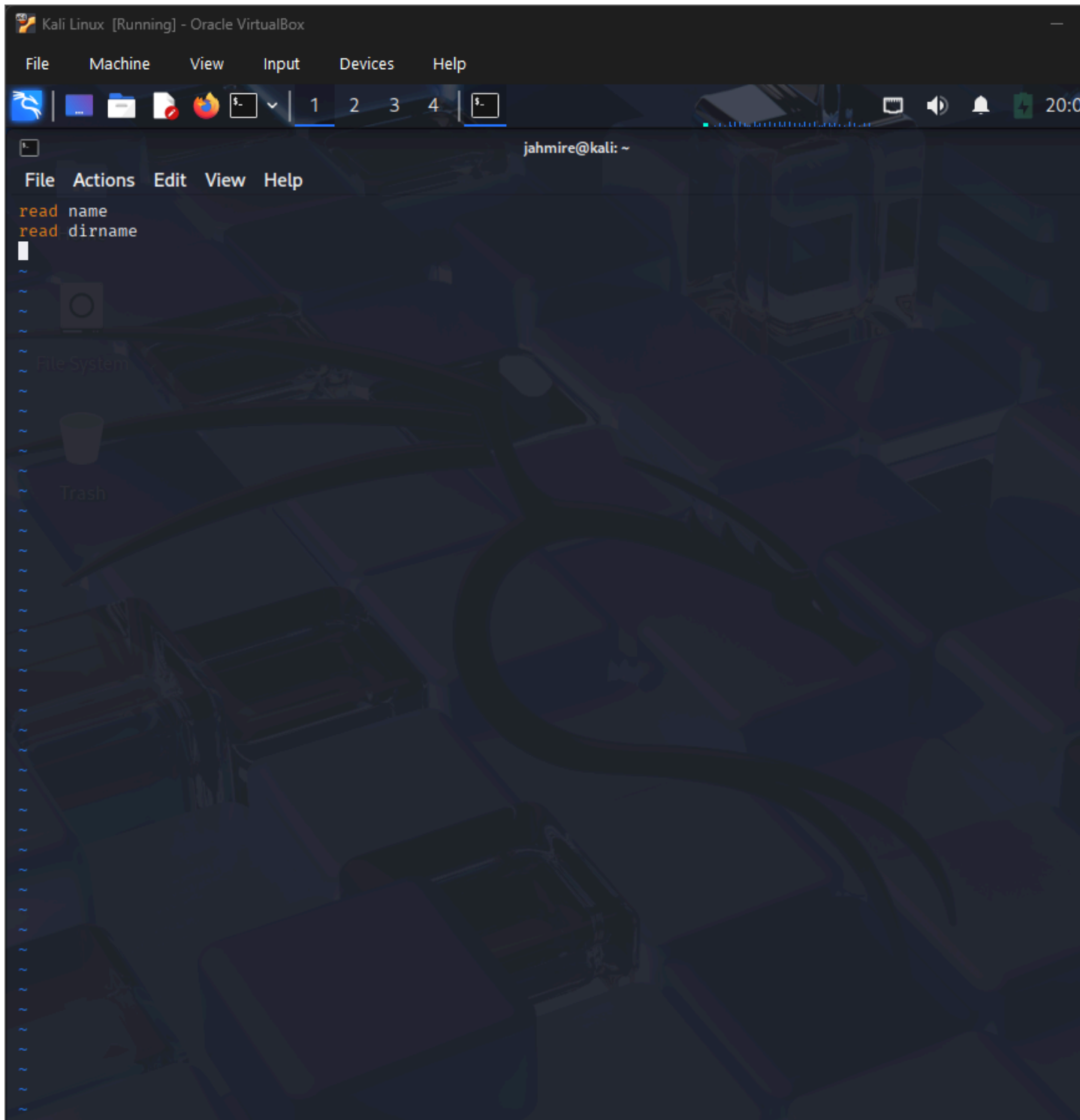
```
(cyse270@CYSE270)-[~/Desktop]
└─$ ./TaskB_withExtra.sh
Enter the filename to check:
test.txt
It is a regular file, and the file exists
```

```
(cyse270@CYSE270)-[~/Desktop]
└─$ ./TaskB_withExtra.sh
Enter the filename to check:
lab8_example.txt
It is a regular file, and the file exists
The contents of the file are:
Mohammed Al kinoon!
```

**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

```

echo "What is the name of the directory"
read directory

if [ -d "$directory" ]; then
    ls $directory
else
    echo "Sorry, the entered directory name is not a valid directory name."
fi

```

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

```

echo "What is the name of the directory"
read directory

if [ -d "$directory" ]; then
    ls $directory
else
    echo "Sorry, the entered directory name is not a valid directory name."
fi

```

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)

```

(cyse270@CYSE270)~[~/Desktop]
└─$ ./lab8_extra_credit.sh
Enter your name:
Mohammed
Enter the directory name to check:
/etc/systemd
Hello, Mohammed. The contents of the directory '/etc/systemd' are:
journald.conf logind.conf network networkd.conf pstore.conf sleep.conf system system.conf timesyncd.conf user user.conf

```

```
(cyse270@CYSE270)-[~/Desktop]
└─$ ./lab8_extra_credit.sh
Enter your name:
Mohammed
Enter the directory name to check:
/home
Hello, Mohammed. The contents of the directory '/home' are:
bob cyse270 data julia susan
```

```
(cyse270@CYSE270)-[~/Desktop]
└─$ ./lab8_extra_credit.sh
Enter your name:
Mohammed
Enter the directory name to check:
/fake_directory
Sorry, the entered directory name is not a valid directory name.
```