Assignment: Bash Shell Basics

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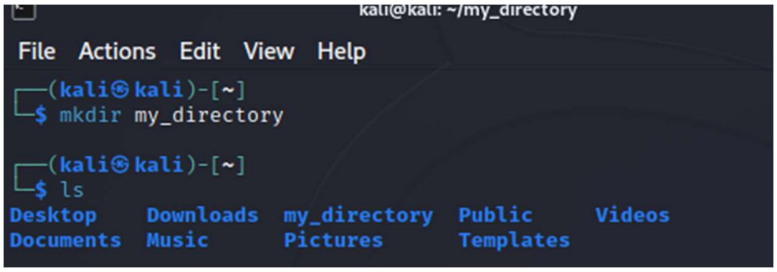
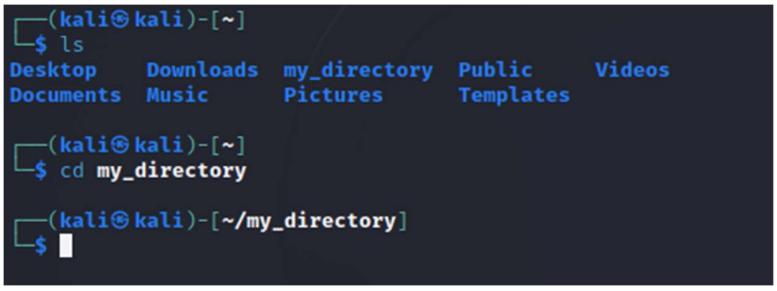
Task 1: File and Directory Manipulation:

1. Create a directory called "my_directory".



2. Navigate into the "my_directory".



3. Create an empty file called "my_file.txt".

4. List all the files and directories in the current directory.

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ls
my_file.txt

┌──(kali㉿kali)-[~/my_directory]
└─$ ls
my_file.txt

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

5. Rename "my_file.txt" to "new_file.txt".

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ls
my_file.txt

┌──(kali㉿kali)-[~/my_directory]
└─$ mv my_file.txt new_file.txt

┌──(kali㉿kali)-[~/my_directory]
└─$ ls
new_file.txt

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

6. Display the content of "new_file.txt" using a pager tool of your choice.

```
┌──(kali㉿kali)-[~/my_directory]
└─$ vim new_file.txt

┌──(kali㉿kali)-[~/my_directory]
└─$ cat new_file.txt
hi
this is karthik
```

7. Append the text "Hello, World!" to "new_file.txt".

```
┌──(kali㉿kali)-[~/my_directory]
└─$ vim new_file.txt

┌──(kali㉿kali)-[~/my_directory]
└─$ cat new_file.txt
Hello, World!
```

8. Create a new directory called "backup" within "my_directory".

```
┌──(kali㉿kali)-[~/my_directory]
└─$ mkdir backup

┌──(kali㉿kali)-[~/my_directory]
└─$ ls
backup  new_file.txt

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

9. Move "new_file.txt" to the "backup" directory.

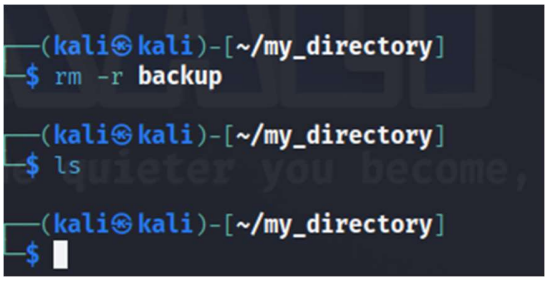
```
┌──(kali㉿kali)-[~/my_directory]
└─$ mv new_file.txt backup

┌──(kali㉿kali)-[~/my_directory]
└─$ ls
backup

┌──(kali㉿kali)-[~/my_directory]
└─$ cd backup

┌──(kali㉿kali)-[~/my_directory/backup]
└─$ ls
new_file.txt

┌──(kali㉿kali)-[~/my_directory/backup]
└─$
```

10. Verify that "new_file.txt" is now located in the "backup" directory.

```
┌──(kali㉿kali)-[~/my_directory]
└─$ cd backup

┌──(kali㉿kali)-[~/my_directory/backup]
└─$ ls
new_file.txt

┌──(kali㉿kali)-[~/my_directory/backup]
└─$
```

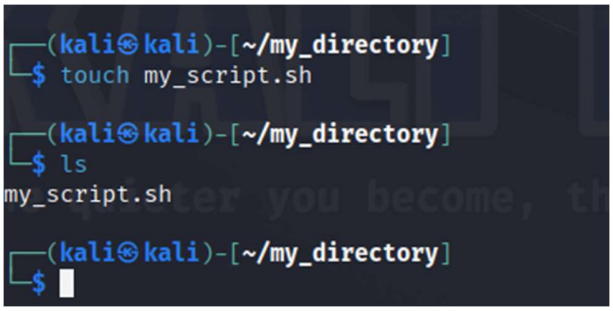
```
┌──(kali㉿kali)-[~/my_directory]
└─$ ls
backup

┌──(kali㉿kali)-[~/my_directory]
└─$ ls -la
total 12
drwxr-xr-x  3 kali kali    80 May 28 15:49 .
drwx------ 17 kali kali   600 May 28 15:48 ..
drwxr-xr-x  2 kali kali    60 May 28 15:49 backup
-rw-------  1 kali kali 12288 May 28 15:44 .new_file.swp
```

11. Delete the "backup" directory and all its contents.



Task 2: Permissions and Scripting

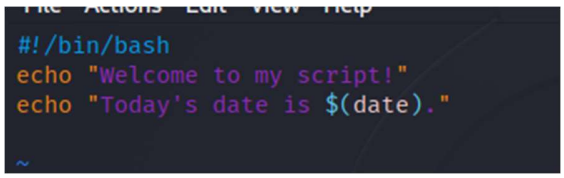
- Create a new file called "my_script.sh".



- Edit "my_script.sh" using a text editor of your choice and add the following lines:

bash

#!/bin/bash
echo "Welcome to my script!"
echo "Today's date is $(date)."
Save and exit the file.



```
┌──(kali㉿kali)-[~/my_directory]
└─$ vim my_script.sh

┌──(kali㉿kali)-[~/my_directory]
└─$ cat my_script.sh
#!/bin/bash
echo "Welcome to my script!"
echo "Today's date is $(date)."
```

- Make "my_script.sh" executable.

```
┌──(kali㉿kali)-[~/my_directory]
└─$ chmod +x my_script.sh

┌──(kali㉿kali)-[~/my_directory]
└─$ ls -la
total 16
drwxr-xr-x  2 kali kali    80 May 28 15:53 .
drwx------ 17 kali kali   600 May 28 15:53 ..
-rwxr-xr-x  1 kali kali    74 May 28 15:53 my_script.sh
-rw-------  1 kali kali 12288 May 28 15:44 .new_file.swp

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

- Run "my_script.sh" and verify that the output matches the expected result.

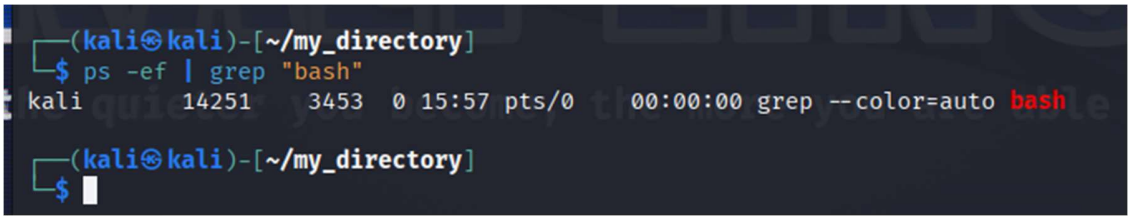
```
┌──(kali㉿kali)-[~/my_directory]
└─$ ./my_script.sh
Welcome to my script!
Today's date is Sun May 28 03:54:41 PM UTC 2023.

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

Task 3: Command Execution and Pipelines

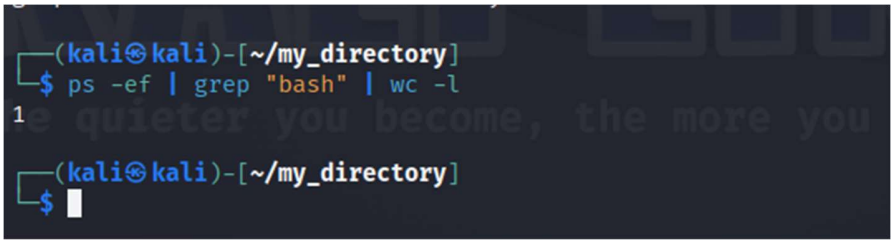
- List all the processes running on your system using the "ps" command.

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ps
    PID TTY          TIME CMD
   3453 pts/0    00:00:07 zsh
   7419 pts/0    00:00:00 vi
  13738 pts/0    00:00:00 ps

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

- Use the "grep" command to filter the processes list and display only the processes with "bash" in their name.



- Use the "wc" command to count the number of lines in the filtered output.



Submission:

Provide a document or text file containing the commands used to complete the tasks above, along with any relevant output or screenshots. Include your explanations or observations where necessary.