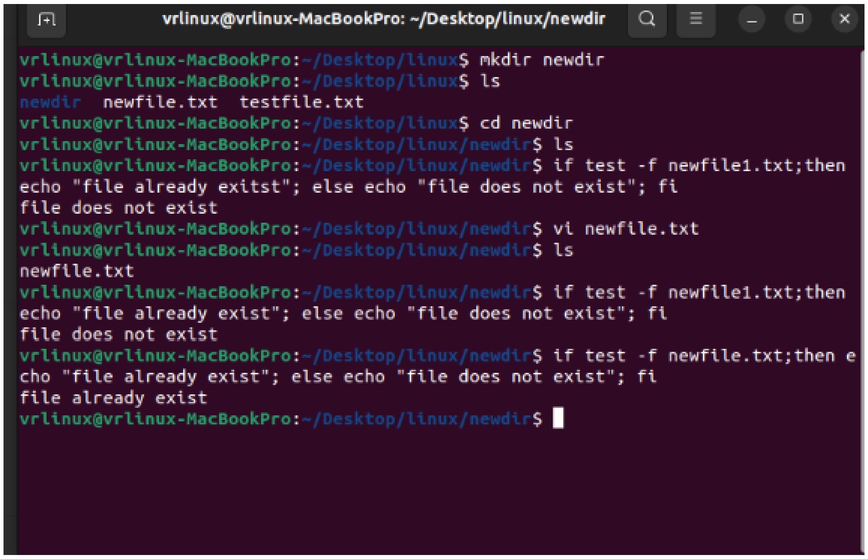
Exercise:

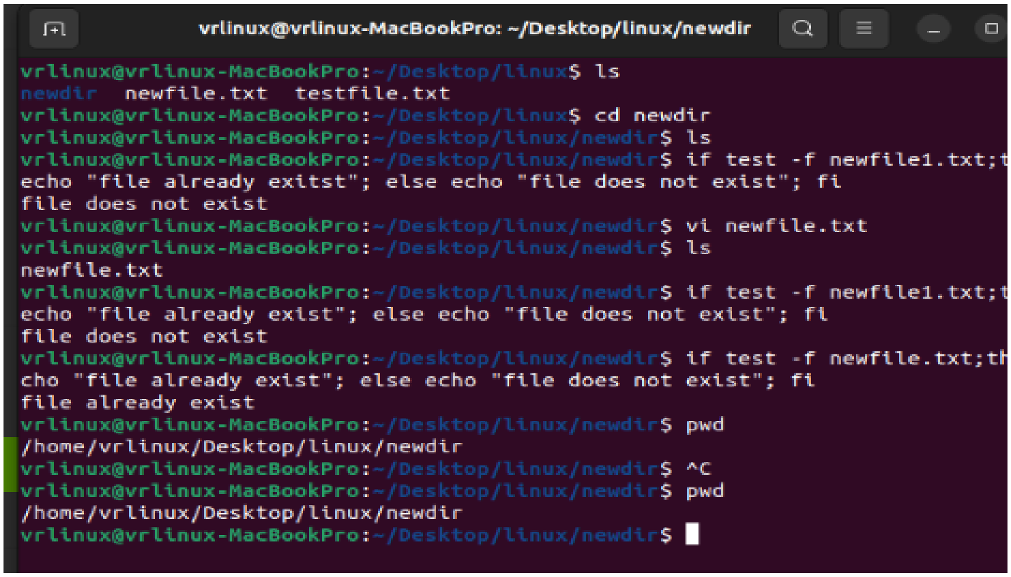
Question 1:
1)Create a file in a new directory using vi editor and ensure the filename doesn't exist already using shell commands.
Answer:

- Create the new directory using the mkdir command.
- Check if the file already exists in the directory using the test command. For example, to check if a file named "newfile.txt" already exists in the "newdir" directory.



```
vrlinux@vrlinux-MacBookPro:~/Desktop/linux$ mkdir newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux$ ls
newdir  newfile.txt  testfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux$ cd newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile1.txt;then
echo "file already exitst"; else echo "file does not exist"; fi
file does not exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ vi newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile1.txt;then
echo "file already exist"; else echo "file does not exist"; fi
file does not exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile.txt;then e
cho "file already exist"; else echo "file does not exist"; fi
file already exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ 
```

2)Get the Absolute path and relative path of the file you created in Question 1.
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ pwd
/home/vrlinux/Desktop/linux/newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$

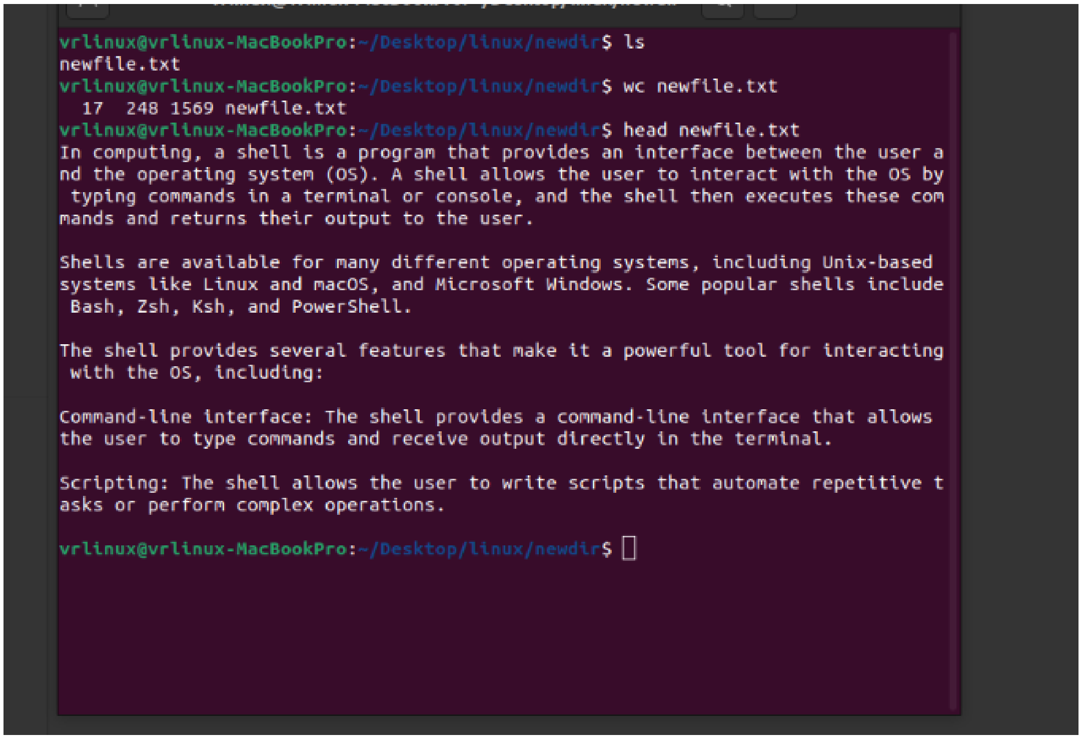


```
vrlinux@vrlinux-MacBookPro:~/Desktop/linux$ ls
newdir  newfile.txt  testfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux$ cd newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile1.txt;t
echo "file already exitst"; else echo "file does not exist"; fi
file does not exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ vi newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile1.txt;t
echo "file already exist"; else echo "file does not exist"; fi
file does not exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ if test -f newfile.txt;th
cho "file already exist"; else echo "file does not exist"; fi
file already exist
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ pwd
/home/vrlinux/Desktop/linux/newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ^C
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ pwd
/home/vrlinux/Desktop/linux/newdir
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ 
```

3)Select a random file and do the following:

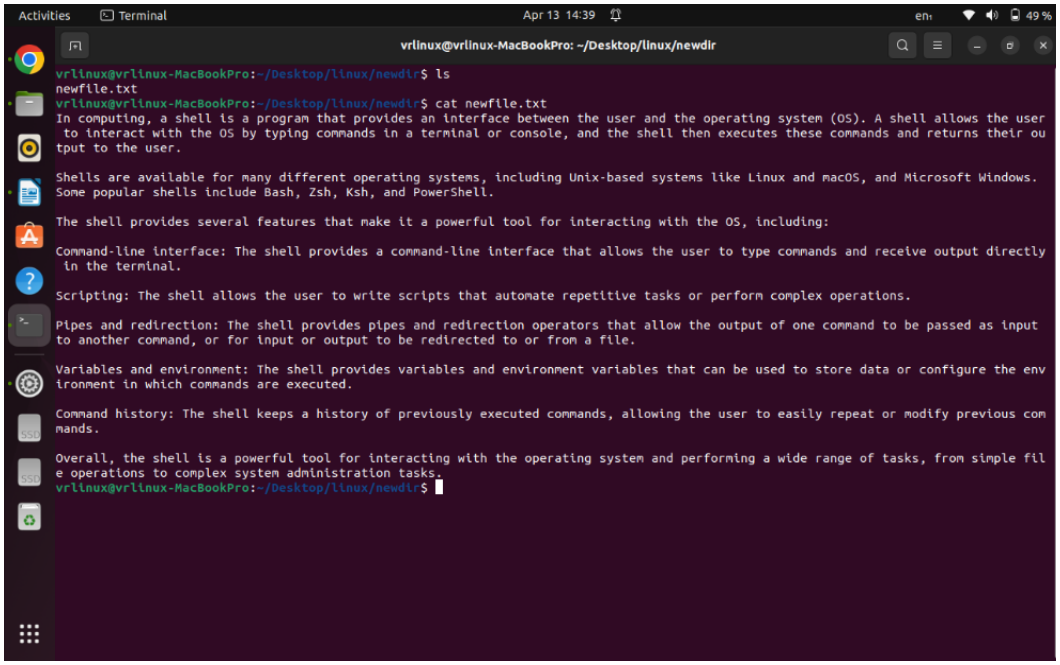
a. Count the no. of lines, words in the file

b. Display the list 10 lines of a file



```
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ wc newfile.txt
  17  248 1569 newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ head newfile.txt
In computing, a shell is a program that provides an interface between the user a
nd the operating system (OS). A shell allows the user to interact with the OS by
 typing commands in a terminal or console, and the shell then executes these com
mands and returns their output to the user.

Shells are available for many different operating systems, including Unix-based
systems like Linux and macOS, and Microsoft Windows. Some popular shells include
 Bash, Zsh, Ksh, and PowerShell.

The shell provides several features that make it a powerful tool for interacting
 with the OS, including:

Command-line interface: The shell provides a command-line interface that allows
the user to type commands and receive output directly in the terminal.

Scripting: The shell allows the user to write scripts that automate repetitive t
asks or perform complex operations.

vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ 
```

c. Display the entire file



```
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ ls
newfile.txt
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ cat newfile.txt
In computing, a shell is a program that provides an interface between the user and the operating system (OS). A shell allows the user
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 in the terminal.

Scripting: The shell allows the user to write scripts that automate repetitive tasks or perform complex operations.

Pipes and redirection: The shell provides pipes and redirection operators that allow the output of one command to be passed as input
to another command, or for input or output to be redirected to or from a file.

Variables and environment: The shell provides variables and environment variables that can be used to store data or configure the env
ironment in which commands are executed.

Command history: The shell keeps a history of previously executed commands, allowing the user to easily repeat or modify previous com
mands.

Overall, the shell is a powerful tool for interacting with the operating system and performing a wide range of tasks, from simple fil
e operations to complex system administration tasks.
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$
```
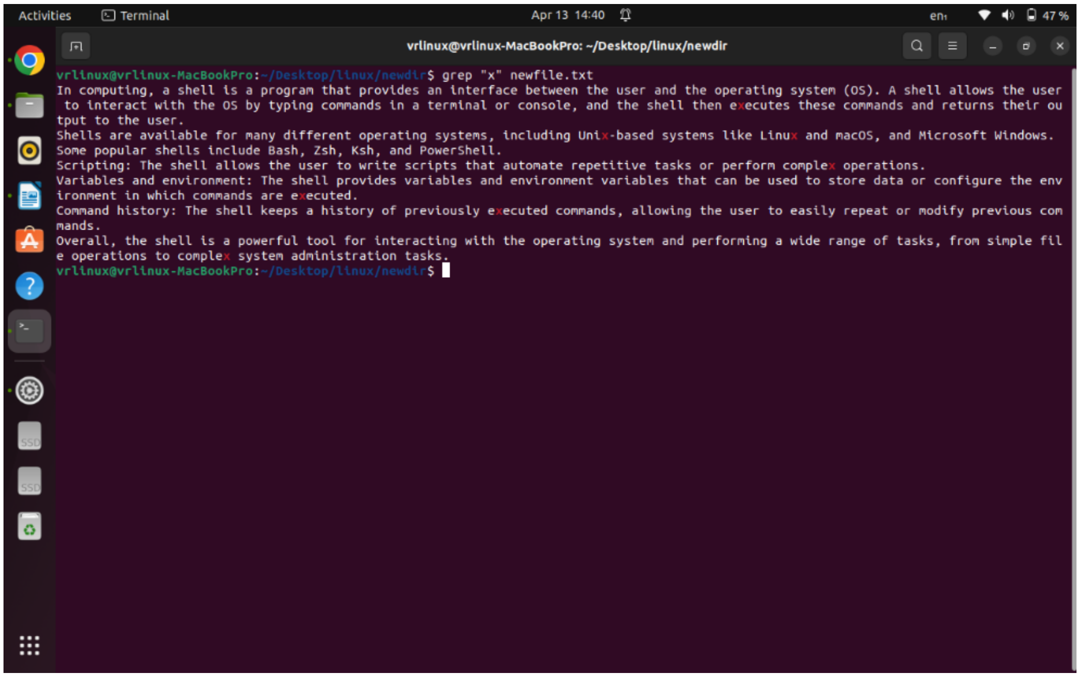

d. Search a word 'X' in the entire file and display the lines with it.



```
vrlinux@vrlinux-MacBookPro:~/Desktop/linux/newdir$ grep "x" newfile.txt
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```