1. The Unix nl command prints the lines of a text file with a line number at the start of each line. (It can be useful when printing out programs for dry runs or white-box testing). Write an implementation of this command. It should take the name of the files as a command-line argument.

```
C:\Users\Dell>cd C:\Users\Dell\Desktop

C:\Users\Dell\Desktop>notepad command.py

C:\Users\Dell\Desktop>python3 command.py eg.txt
1       welcome to the programming field
2       everyone
```

2. The Unix diff command compares two files and reports the differences, if any. Write a simple implementation of this that takes two file names as command-line arguments and reports whether or not the two files are the same. (Define "same" as having the same contents.)

```
C:\Users\Dell>cd C:\Users\Dell\Desktop

C:\Users\Dell\Desktop>notepad comparison.py

C:\Users\Dell\Desktop>python3 comparison.py file1.txt file2.txt
The files are the same.
```

When I change the content of txt file

```
C:\Users\Dell\Desktop>python3 comparison.py file1.txt file2.txt
The files are different.
```

3. The Unix grep command searches a file and outputs the lines in the file that contain a certain pattern. Write an implementation of this. It will take two

command-line arguments: the first is the string to look for, and the second is the file name. The output should be the lines in the file that contain the string.

```
C:\Users\Dell>cd %UserProfile%\Desktop

C:\Users\Dell\Desktop>notepad grep_command.py

C:\Users\Dell\Desktop>python3 grep_command.py "the" file.txt
welcome to the fundamental of computer programming subject.
The text might have the word you're looking for.
```

4. The Unix wc command counts the number of lines, words, and characters in a file. Write an implementation of this that takes a file name as a command-line argument, and then prints the number of lines and characters.
Note: Linux (and Mac) users can use the "wc" command to check the results of their implementation.

```
C:\Users\Dell>cd %UserProfile%\Desktop

C:\Users\Dell\Desktop>notepad wc.py

C:\Users\Dell\Desktop>python3 wc.py file.txt
Lines: 5
Characters: 150
```

5. The Unix spell command is a simple spell-checker. It prints out all the words in a text file that are not found in a dictionary. Write and test an implementation of this, that takes a file name as a command-line argument.

```
C:\Users\Dell>cd %UserProfile%\Desktop

C:\Users\Dell\Desktop>notepad spelling.py

C:\Users\Dell\Desktop>python3 spelling.py checker.txt
taskk
checer
```