

## PROGRAMMING LAB 1

(DUE: Oct 13<sup>th</sup> 2020)

You are to write a (C++, Python, Java) program that does the following. It keeps reading user's inputs, line by line. Each input line the user types is supposed to be in one of the following three forms:

```
>numcols filename  
>numrows filename  
>exit
```

where filename is the name of a text file. The file contains a set of lines; each line is a list of words separated by spaces or tabs. Each word is a series of (ASCII) characters with no tab nor space in between them. For example, the content of the file test.txt might look like this

```
this is a file  
that has seven columns and four rows.  
Note that rows might have  
different numbers of columns.
```

In this file, the first row has 4 words, second has 7, third has 5, and fourth has 4.

**numcols** stands for "number of columns" of filename, which is the maximum number of words that a row has.

**numrows** stands for "number of rows", which is the number of lines in the file.

**exit** tells your program to quit

If the user types exit, then your program quits.

The other two commands numrows and numcols reports the number of columns and the number of rows the file has.

For example, if the file test.txt has the content as shown above, then the output of the program looks as follows.

```
> numrows test.txt  
4  
> numcols test.txt  
7  
> numcols anothertest.txt  
6  
> exit
```

Here, anothertest.txt is some other file that has 6 columns. Your program has to keep running until the user types exit.