Write a program that takes in a TEXT FILE as input in via a command line argument. The program should print to the screen the number of characters in that file, the number of words in that file (a word is any sequence of non-white-space characters), and the number of lines in that file.

I will be grading you on the efficiency of your approach and the design of your program. Design includes encapsulating functionality and logical organization of functionality.

EXTRA CREDIT (5 points): Output a bag of words of the words in the text file. Output this to bagofwords.txt. Look here for an understanding: https://en.wikipedia.org/wiki/Bag-of-words\_model (Links to an external site.)

Standard Input/Output Example

./a.out sometextfile.txt  
Number of Characters: 65  
Number of Words: 18  
Number of Lines: 3

A bag of words can become very complicated depending on how it is created, but that is obviously not what I am looking for from you guys. Let me clarify that here:

I am looking for an orderless document listing the frequencies of words in the document. So for instance, if I had the block of text in my document:

Aenean ac lectus vulputate, imperdiet sapien non, auctor sapien. In viverra feugiat nunc in vulputate. Etiam posuere vitae lacus in consequat. Suspendisse potenti. Curabitur ex urna, bibendum et nibh sit amet, laoreet convallis nulla. Etiam aliquet risus ac urna sagittis tincidunt. Aliquam magna metus, malesuada in dui et, eleifend sollicitudin purus. Vivamus id turpis vel nunc vehicula facilisis. Curabitur ipsum libero, tempor ac lacinia in, faucibus scelerisque lorem. Maecenas interdum, urna quis laoreet vulputate, sapien nulla blandit nulla, eget scelerisque ipsum augue eu mi. Aliquam ac magna convallis, sodales turpis a, ultricies nibh. Mauris efficitur elit a scelerisque iaculis. Cras eu enim nunc.

This is something of what I am looking for in return (it doesn't have to be in a particular order, but you can sort it like that if you'd like. Also I would prefer it in the order

WORD: COUNT

if possible.):

5 in  
4 ac  
3 vulputate  
3 urna  
3 scelerisque  
3 sapien  
3 nunc  
3 nulla  
2 turpis  
2 nibh  
2 magna  
2 laoreet  
2 ipsum  
2 eu  
2 etiam  
2 et  
2 curabitur  
2 convallis  
2 aliquam  
2 a  
1 viverra  
1 vivamus  
1 vitae  
1 vel  
1 vehicula  
1 ultricies  
1 tincidunt  
1 tempor  
1 suspendisse  
1 sollicitudin  
1 sodales  
1 sit  
1 sagittis  
1 risus  
1 quis  
1 purus  
1 potenti  
1 posuere  
1 non  
1 mi  
1 metus  
1 mauris  
1 malesuada  
1 maecenas  
1 lorem  
1 libero  
1 lectus  
1 lacus  
1 lacinia  
1 interdum  
1 imperdiet  
1 id  
1 iaculis  
1 feugiat  
1 faucibus  
1 facilisis  
1 ex  
1 enim  
1 elit  
1 eleifend  
1 eget  
1 efficitur  
1 dui  
1 cras  
1 consequat  
1 blandit  
1 bibendum  
1 augue  
1 auctor  
1 amet  
1 aliquet  
1 aenean