

12th South African Regional ACM Collegiate Programming Contest

Sponsored by IBM

16 October 2010

Problem A - Yellow Balloon How many?

Problem Description

For many years an elderly gentleman, Count Alfred Lots, has been employed to count the dominant words in pieces of text that Prof H.O.W. Menee digs out of the archives. Count Lots has decided to go on leave to the South of France for a few months and Prof Menee has been unable to find a replacement word counter. It seems the work is too mundane for the youth of today. Prof Menee hears via a colleague about the South African Regionals of the ACM ICPC and decides to put the enthusiasm of as many programmers to the task as possible.

The task put to these eager young programmers is to write a program that given a number of texts, found by Prof Menee and transcribed into a single text file by Ms Tipello, they count the words that occur the most for each of the pieces of text and display the relevant words with the frequency.

Input

Ms Tipello begins each new file to be tested with the words <---Begin---> and ends it with <---End--->. Each new piece of text after the first and before the last is delimited with <---Next--->. She has also decided to, within context, change any sentences that may include words such as **he's** to **he is** or **he has**. What she regards as normal punctuation she has left in.

No word will be more than 40 characters in length.

Output

Prof Menee would like the following sentence to be written for each piece of independent text in the text file:

Words with a frequency of N in the text are: *Comma delimited list of words*

Where N is the frequency of the word(s) that occur the most and *Comma delimited list of words* the corresponding word or list of words. The words in the word list should be in lexicographical order.

Sample Input

<---Begin--->

Fourscore and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation or any nation so conceived and so dedicated can long endure.

<---Next--->

Five score years ago, a great American, in whose symbolic shadow we stand today, signed the Emancipation Proclamation. This momentous decree came as a great beacon light of hope to millions of Negro slaves who had been seared in the flames of withering injustice. It came as a joyous daybreak to end the long night of their captivity.

<---Next--->

Soldiers of my Old Guard: I bid you farewell. For twenty years I have constantly accompanied you on the road to honor and glory. In these latter times, as in the days of our prosperity, you have invariably been models of courage and fidelity. With men such as you our cause could not be lost; but the war would have been interminable; it would have been civil war, and that would have entailed deeper misfortunes on France.

I have sacrificed all of my interests to those of the country.

I go, but you, my friends, will continue to serve France. Her happiness was my only thought. It will still be the object of my wishes. Do not regret my fate; if I have consented to survive, it is to serve your glory. I intend to write the history of the great achievements we have performed together. Adieu, my friends. Would I could press you all to my heart.

<---End--->

Sample Output

Words with a frequency of 3 in the text are: and, nation

Words with a frequency of 4 in the text are: of

Words with a frequency of 8 in the text are: have, my

Time Limit

5 seconds