

Problem 5: Anagrams¹

Source filename: `anagrams.(cpp|java)`
 Input filename: `anagrams.in`
 Output filename: `anagrams.out`

Definition: Two words or phrases are anagrams of each other if each one can be obtained by rearranging the letters of the other. Every letter should be used (and used only once) to form the other word or phrase. The case of each letter is not significant (upper case may be changed to lower case and vice versa). Punctuation, spaces, digits, and other special characters may be used or eliminated in any way you like.

Example anagrams

Problem A: Anagrams \equiv Abnormal Rampages

Elvis \equiv lives

Dormitory \equiv dirty room

Input File (`anagrams.in`)

The input file contains several test cases. There are two lines of text for each test case. Each line contains a non-empty string (length ≤ 150). The input strings consist of one or more printable ASCII characters ($32 \leq \text{ASCII value} \leq 126$).

The two lines after the last test case contain the same identical string: “<end>”. These two lines mark the end of the file and no output should correspond to these last two lines.

Output File (`anagrams.out`)

For each test case (with its two strings), your program should print to the output file (on a line by itself) the word “YES”, if the strings are anagrams of each other, and “NO”, otherwise. Notice that the words “YES” and “NO” should be printed in all caps and that the output file contains no spaces.

Example Input

(The last anagram listed below is attributed to Steve Krakowski.)

```
Problem A: Anagrams
Abnormal Rampages
Elvis
lives
Dormitory
dirty room
Cher
cheer
Clint Eastwood
Old West Action
Snooze alarms
Alas! No more Z's
"That's one small step for a man, one giant leap for mankind." - Neil A. Armstrong
A thin man ran; makes a large stride; left planet, pins flag on moon! On to Mars!
<end>
<end>
```

Corresponding Output

```
YES
YES
YES
NO
YES
YES
YES
```

¹ This problem appeared at the CCSC:MidSouth Student Programming Contest April 4, 2008.

Bored?

Here are a few more “fun” anagrams². Attributions (if known) are shown in parentheses.

listen \equiv silent
 Schoolmaster \equiv the classroom
 Madam Curie \equiv Radium came
 A telephone girl \equiv Repeating “Hello”
 Western Union \equiv No Wire Unsent
 Astronomers \equiv Moon starers
 A telescope \equiv To see place
 The eyes \equiv They see
 Waitress \equiv A stew, Sir?
 The Morse Code \equiv Here come dots
 Slot machines \equiv cash lost in ‘em
 A domesticated animal \equiv docile, as a man tamed it
 Software \equiv swear oft
 “Raiders of the Lost Ark” \equiv Ford, the real star, is OK!
 “Twenty Thousand Leagues Under the Sea” \equiv Huge water tale stuns. End had you tense. (by E.L. Benfer)
 Alec Guinness \equiv Genuine Class (by Dick Cavett)
 Mr. Mojo risin’ \equiv Jim Morrison (from the Doors’ song, “L.A. Woman”)
 The Great New York Rapid Transit Tunnel \equiv Giant work in street, partly underneath
 Statue of Liberty \equiv Built to stay free
 Eleven plus two \equiv twelve plus one
 New York Times \equiv monkeys write (by Andrew Glines)
 The Towering Inferno \equiv Not worth fire engine (GAMES magazine)
 George Bush \equiv He bugs Gore (by Mike Morton)

And finally, two amazing anagrams attributed to Cory Calhoun:

“Just because some of us can read and write and do a little math, that doesn’t mean we deserve to conquer the universe.”
 \equiv A masquerade can cover a sense of what is real to deceive us; to be unjaded and not lost, we must, then, determine truth.

“To be or not to be: that is the question, whether tis nobler in the mind to suffer the slings and arrows of outrageous fortune”
 \equiv In one of the Bard’s best-thought-of tragedies, our insistent hero, Hamlet, queries on two fronts about how life turns rotten.

² This list of anagrams was selected from the “Internet Anagram Server: Anagram Hall of Fame” found at <http://wordsmith.org/anagram/hof.html>