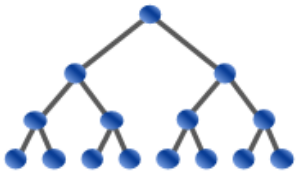
USA Computing Olympiad



USACO 2017 February Contest, Bronze
Problem 2. Why Did the Cow Cross the Road II

Return to Problem List

Contest has ended.

Submitted; Results below show the outcome for each judge test case

1	2	3	4	5	6	7	8	9	10
*	*	*	*	*	*	*	*	*	*
32.2mb 172ms	32.1mb 204ms	32.1mb 183ms	32.1mb 189ms	32.1mb 202ms	32.1mb 191ms	32.1mb 195ms	32.3mb 187ms	32.1mb 175ms	32.1mb 199ms

English (en)

The layout of Farmer John's farm is quite peculiar, with a large circular road running around the perimeter of the main field on which his cows graze during the day. Every morning, the cows cross this road on their way towards the field, and every evening they all cross again as they leave the field and return to the barn.

As we know, cows are creatures of habit, and they each cross the road the same way every day. Each cow crosses into the field at a different point from where she crosses out of the field, and all of these crossing points are distinct from each-other. Farmer John owns exactly 26 cows, which he has lazily named A through Z (he is not sure what he will do if he ever acquires a 27th cow...), so there are precisely 52 crossing points around the road. Farmer John records these crossing points concisely by scanning around the circle clockwise, writing down the name of the cow for each crossing point, ultimately forming a string with 52 characters in which each letter of the alphabet appears exactly twice. He does not record which crossing points are entry points and which are exit points.

Looking at his map of crossing points, Farmer John is curious how many times various pairs of cows might cross paths during the day. He calls a pair of cows (a, b) a "crossing" pair if cow a's path from entry to exit must cross cow b's path from entry to exit. Please help Farmer John count the total number of crossing pairs.

INPUT FORMAT (file circlecross.in):

The input consists of a single line containing a string of 52 upper-case characters. Each letter of the alphabet appears exactly twice.

OUTPUT FORMAT (file circlecross.out):

Please print the total number of crossing pairs.

SAMPLE INPUT:

```
ABCCABDDEEFFGGHHIIJJKKLLMMNNOOPPQQRRSSTTUUVVWWXXYYZZ
```

SAMPLE OUTPUT:

```
1
```

In this example, only cows A and B are a crossing pair.

Problem credits: Brian Dean

Language: C

Source File: Choose File No file chosen

Submit Solution

Note: Many issues (e.g., uninitialized variables, out-of-bounds memory access) can cause a program to produce different output when run multiple times; if your program behaves in a manner inconsistent with the official contest results, you should probably look for one of these issues. Timing can also differ slightly from run to run, so it is possible for a program timing out in the official results to occasionally run just under the time limit in analysis mode, and vice versa. Note also that we have recently changed grading servers, and since our new servers run at different speeds from the servers used during older contests, timing results for older contest problems may be slightly off until we manage to re-calibrate everything properly.