Problem 10

Freddy's Fast Fingers

6 Points

Program Name: typing.cpp Input File: typing.dat

Introduction

Freddy likes to type. And he types fast. Sometimes he'd like to know how long it is going to take to type something before he starts. He observes his typing habits:
Given the standard QWERTY keyboard layout (Freddy has yet to discover the advantages of the Dvorak layout):

```
    Column
    0 1 2 3 4 5 6 7 8 9
R 0|q w e r t y u i o p
o 1|a s d f g h j k l ;
w 2|z x c v b n m , . /
  3|-----Space bar-----
```

Freddy uses his fingers accordingly (in typical typing fashion):

Finger	Types	Starts on
Left little finger	qaz	a
Left ring finger	wsx	s
Left middle finger	edc	d
Left index finger	rtgfvb	f
Right index finger	yuhjnm	j
Right middle finger	ik,	k
Right ring finger	ol.	l
Right little finger	p;/	;

(Not shown in the table is Freddy's right thumb which starts on the space bar and types the space character)

Freddy's fingers start on the keys according to the table. However, the instant he starts typing, each of his fingers moves to the next character that finger has to type. This movement occurs simultaneously. When one of his fingers is on the next character to be typed, it pushes that key and that finger immediately proceeds to the next character that finger needs to type, simultaneously with any other fingers that may be moving to their next character to type, or pushing keys. This continues until Freddy has finished typing all the characters.

The time it takes for a finger to move from one key to another can be calculated (in ms) as follows:
((| destination column - starting column |) * 50) + ((| destination row - starting row |) * 50)
using the rows and columns from the keyboard layout designated above.

The time it takes to press a key is 10ms.

Input

Input to this problem will consist of a (non-empty) series of up to 100 data sets. Each data set will be formatted according to the following description, and there will be **no blank lines** separating data sets.

A single data set has 1 component:
Typing Copy - A single line of 1-200 characters from the QWERTY keyboard layout designated in the introduction.

Output

For each data set, there will be exactly one line of output. The output will be the integer "A", where "A" is the amount of time in ms it will take for Freddy to type the characters inputted.

Example: Input File

```
asdf jkl;
the quick brown fox jumps over the lazy dog.
```

Output to screen

```
90
1280
```