



4: Sorting hand

Level: Medium

Time limit: 1 second

It is a Thursday and 4:00 pm and you and your friends are thrilled for the **via** drinks! So, you and your friends decide to play your favourite card game. Your favourite game has a special deck of cards. The card deck contains four standard suits of different colours: Silver (S), Vermilion (V) Indigo (I) and Amber (A), the card deck also contains one trump suit coloured Cyan (C). The Cyan cards outrank all other cards. There are N cards in each suit, numbered 1 to N . There are 5 suits in total, which gives a total of $5N$ cards. Before the game starts, the deck is randomly divided between the 5 players, giving each player N cards. Before the game really starts, you decide to sort your cards such that all cards of the same suit are next to each other in increasing order, and the trump cards are at the end (also in increasing order). To achieve this, you perform a series of actions, wherein for each action you take out one card and put it back in your hand at another position. While doing this the question arises: What is the minimum number of actions required in order to organise your hand?

Input

The first line of the input consists of an integer N ($1 \leq N \leq 10^5$). The second line contains N space-separated values describing the sequence of cards in your hand. Each value is composed of one letter of the set {S, V, I, A, C} (The suit of the card), followed by an integer V ($1 \leq V \leq N$) (the card's value)

Output

The output should contain one line, consisting of the number that represents the minimum number of actions required to organise your hand.

Sample input 1

4
V4 I3 C2 V2

Sample input 2

5
S2 V4 I1 A5 C1

Sample output 1

1

Sample output 2

0