1. **Nationalities**

The Pan Am 73 flight from Bombay to New York en route Karachi and Frankfurt was hijacked by a few Palestinian terrorists at the Karachi International Airport. Despite the alarming situation prevailing inside the flight, the senior flight purser Neerja Banhot had to wither her fear and rise to the occasion to take extra care of her passengers on board. The hijackers grouped the passengers belonging to the same countries and targetted to slay them. Neerja did not want this to happen and decided to evacuate those groups of passengers of the same nationality one after the other through the chute, by deceiving the hijackers. For this she wanted the count of passengers belonging to the same countries. Given n the number of passengers, a list of characters representing the nationalities of passengers, can you find the number of passengers from each country and print the list in ascending order w.r.t the characters specifing the nationality.

**Input Format:**

The first line of input consists of an integer n, corresponding to the number of passengers in the aircraft.

The next n lines of input consist of uppercase alphabets that correspond to the nationalities of passengers.

**Output Format:**

The output consists of c lines.

Each of the c lines consists of a character and an integer corresponding to the country and the count of passengers in that country. Print the countries in ascending order.

Print Invalid Input and terminate the process of getting inputs if n is not a non zero positive number or any of the nationalities is not an uppercase alphabet.

Refer sample input and output for further specifications.

Sample Input 1:

7

I

I

P

G

B

B

I

Sample Output 1:

B 2

G 1

I 3

P 1

Sample Input 2:

6

I

I

P

g

Sample Output 2:

Invalid Input

Sample Input 3:

-6

Sample Output 3:

Invalid Input

2)

The Pan Am 73 flight from Bombay to New York en route Karachi and Frankfurt was hijacked by a few Palestinian terrorists at the Karachi International Airport. Despite the alarming situation prevailing inside the flight, the senior flight purser Neerja Banhot had to wither her fear and rise to the occasion to take extra care of her passengers on board.

When the hijackers opened fire and set off explosives, Neerja opened one of the emergency exit doors and helped the passengers to evacuate from the aircraft. She rushed the women to evacute first, then the children and the male senior citizens ( above 60 years of age ).

Given the number of passengers, a list containing the age of passengers and a list containing the categories of passengers can you calculate the total number of passengers who need to be sent out of the aircraft first.

**Input Format:**

The first line of input consists of an integer n, corresponding to the number of passengers in the aircraft.

The next n lines of input consist of n integers that correspond to the age of the passengers.

The next n lines of input consist of n characters that correspond to the category of passengers ( M / F / C).

Every ith character in the category list corresponds to the category of the ith person and the ith character in the age list corresponds to the age of the ith person.

**Output Format :**

The output consists of an integer corresponding to the number of people to be evacuated.

Print Invalid Input and terminate the process of getting inputs if n or any of the ages is not a non zero positive number or any of the genders is not one of the uppercase alphabets M / F / C.

Refer sample input and output for further specifications.

Hint: M – Male , F – Female , C - Children

Sample Input 1:

7

68

4

31

32

55

61

90

M

C

F

F

M

F

M

Sample Output 1:

6

Sample Input 2:

6

68

-45

Sample Output 2:

Invalid Input

Sample Input 3:

-6

Sample Output 3:

Invalid Input

Sample Input 4:

3

3

4

5

L

Sample Output 4:

Invalid Input