

Task 1. Fountain 0.1 sec.  256 MB

Your name is Bobi and you forgot to buy yourself water. At your disposal are a brand new smart fountain and a cup with a size of 10^5 litres. You have to find the fastest way to drink your fill of N litres of water.

Task

Write a program **cheshma**, containing a function `solve`, which will be compiled with the program of the jury and will communicate with it, performing actions of the kinds listed below. At the end of its execution Bobi must have drunk N litres of clean water.

Implementation details

This task is pseudo-interactive. The function `void solve(int n)`, which you have to write, will be called only once by the program of the jury and will receive as an argument the integer N . For communication with Bobi's fountain and cup you are provided with the following functions:

```
void open();
void close();
void setCountry(std::string s);
void drinkCup(int m);
void store(int m);
void drink(int m);
void pay();
```

On every call of the function `open` the fountain will be running and you will be able to collect water from it. Similarly, the function `close` closes the fountain. The function `setCountry` downloads a VPN (Virtual Private Network) onto the smart fountain and selects the given country s , which is written in lowercase Latin letters and the name of the country is in English. The function `drinkCup` makes you drink m litres from the cup, and if there is not that much in it, everything in the cup is taken. The function `store` pours m litres from the fountain into the cup. The function `drink` makes you drink m litres directly from the fountain. The function `pay` pays your bills, but does nothing, because of your lack of monetary funds. **Keep in mind that the fountain is faster than even linear in some places!**

Your program `cheshma.cpp` must implement the function `solve`. It may also contain other code and functions necessary for your work, but it must not contain the main function `main`. Also, you must not read from the standard input or print to the standard output. Your program must include the header file `cheshma.h` through a directive to the preprocessor:

```
#include "cheshma.h"
```

Constraints

- $0 \leq N \leq 10^5$

Subtasks

Let the sum of m over the queries be S .

Subtask	Points	Constraints
1	5	$0 \leq N \leq 0$
2	10	$0 \leq N \leq 20$
3	20	$0 \leq S \leq 2N$
4	25	$0 \leq S \leq N$
5	25	$0 \leq S \leq \frac{2}{3}N$
6	15	$0 \leq S \leq \frac{1}{3}N$

The points for a given subtask are awarded only if all the tests provided for it are passed successfully.

Sample communication

Function of the participant	Program of the jury
	<code>solve(6)</code>
<code>open()</code>	Nothing.
<code>store(4)</code>	Nothing.
<code>pay()</code>	Nothing.
<code>setCountry("germany")</code>	Nothing.
<code>drink(2)</code>	Nothing.
<code>drinkCup(4)</code>	Nothing.
The function terminates.	

Explanation: In the example we pour 4l into the cup, we drink 2l from the fountain, we drink 4l from the cup and we have drunk our fill. Here $S = 10$.

Scoring

If you get a result of WA, the water is dirty or you have not completed the task. If you get RE, the water utility has cut off the water, you have unpaid bills, you have tried to pay your bills, or you have an error during the execution of your algorithm. With a result of ML you have flooded the room (you have filled more than 10^5 litres of water into the cup). If you get TL, you have used too many queries or your drinking took so long that you died of thirst.

Local testing

You are provided with the file `Lgrader.cpp`, which you can compile together with your program in order to test it. On startup the program will read from the standard input the value of N . After that the communication which takes place will be printed. You may modify the provided file as you wish.