**1. The Old Library**

Ani goes back to her hometown after a very long period abroad. When she arrives home, she sees her grandmother’s old library and remembers her favorite book. Help Ani by writing a program where she enters the title of the book she is looking for. While Ani has not yet found her favorite book and there are still books left in the library, the program should read the name of each next book (text) on a new line. The books are finished when you receive the text "No More Books".

* If she does not find the book, print on two lines:
  + "The book you search is not here!"
  + "You checked {number} books."
* If she finds her book, print one line:
  + "You checked {number} books and found it."

**2. Exam Preparation**

Write a program where Marin is solving exam problems until he receives the command "Enough" from his lecturer. For each problem solved, he receives a grade. The program should stop either when the command "Enough" is given or when Marin has received the allowed number of poor grades.

* A poor grade is any grade **less than or equal to 4**.

**Input**

* First line – number of allowed poor grades (integer in the range [1…5])
* Then repeatedly two lines are read:
  + Problem name – string
  + Grade – integer in the range [2…6]

**Output**

* If Marin reaches the command "Enough", print on 3 lines:
  + "Average score: {average grade}"
  + "Number of problems: {total number of problems}"
  + "Last problem: {last problem name}"
* If Marin receives the allowed number of poor grades:
  + "You need a break, {count of poor grades} poor grades."

The average grade must be formatted to the **second decimal place**.

**3. Vacation**

Jessie decided to save money for a holiday and wants to know if she can manage to collect the needed amount. Every day she either **spends** or **saves** money. If she tries to spend more than she currently has, she spends all of her money and her balance becomes **0**.

**Input**  
From the array read:

* Money needed for the holiday – real number in range [1.00…25000.00]
* Available money – real number in range [0.00…25000.00]  
  Then repeatedly two lines are read:
* Type of action – "spend" or "save"
* Amount to spend/save – real number in range [0.01…25000.00]

**Output**  
The program should end in the following cases:

* If Jessie spends money for 5 consecutive days, print:
  + "You can't save the money."
  + "{total days passed}"
* If Jessie collects enough money for the holiday, print:
  + "You saved the money for {total days} days."

**4. Steps**

Gabi wants to live a healthier lifestyle and has set herself a goal of **10,000 steps every day**. Some days, however, she is tired from work and wants to go home before reaching her goal.

Write a program that reads from an array how many steps she makes each time she goes out during the day.

* If she reaches her goal, print:
  + "Goal reached! Good job!"
  + "{extra steps} steps over the goal!"
* If she goes home before reaching the goal, she enters the command "Going home" and then the number of steps taken while going home. After that, if she hasn’t reached her goal, print:
  + "{steps needed} more steps to reach goal."

**5. Coins**

The vending machine manufacturers want their machines to return **the smallest possible number of coins** as change. Write a program that takes the change amount and calculates with how few coins it can be returned.  
Available coins:

* 2 lev, 1 lev, 50 stotinki, 20 stotinki, 10 stotinki, 5 stotinki, 2 stotinki, 1 stotinka.

**6. Cake**

You are invited to a 30th birthday party where the birthday person has a huge cake. They don’t know how many pieces will be enough for all the guests.

Write a program that calculates how many cake pieces guests take before it runs out.

* You will receive the dimensions of the cake (width and length – integers [1…1000]).
* Then, until the command "STOP" or until the cake is finished, you will receive how many pieces are taken.
* Each cake piece is **1x1 cm**.

**Output**

* If you reach "STOP" and there are still pieces left:
  + "{pieces left} pieces are left."
* If the cake is finished before the command "STOP":
  + "No more cake left! You need {pieces needed} pieces more."

**7. Moving**

On his 18th birthday, Jose decided to move into a rented apartment. He packed his belongings in boxes and started moving them bit by bit. His new home has limited free space, so he needs to know if everything will fit.

Write a program that calculates the free volume left in Jose’s apartment after moving in his boxes.

* Each box has dimensions: **1m x 1m x 1m**.

**Input**

* Width of free space – integer [1…1000]
* Length of free space – integer [1…1000]
* Height of free space – integer [1…1000]
* Then repeatedly read the number of boxes until the command "Done" is received.

**Output**

* If you reach "Done" and there is still space left:
  + "{cubic meters left} Cubic meters left."
* If there is no more space before "Done":
  + "No more free space! You need {cubic meters needed} Cubic meters more."