**Santa’s Secret Helper**

After the successful second Christmas, Santa needs to gather information about the behavior of children to plan the presents for next Christmas. He has a secret helper, who is sending him **encrypted** information. Your task is to **decrypt it** and create a list of the children who have been good.

You will receive an **integer**, which represents **a key** and afterwards some **messages**, which you **must decode** by **subtracting the key** from the **value** of **each** **character**. After the decryption, to be considered a valid match, a message should:

* Have a name, which **starts after** **'@'** and contains **only letters from the Latin alphabet**
* Have a behaviour type - **"G"(good) or "N"(naughty)** and must be **surrounded by "!"** (exclamation mark).

The order in the message should be: **child’s name -> child’s behavior.** They can be separated from the others by **any character except: '@', '-', '!', ':' and '>'.**

You will be receiving message until you are given the “**end**” command. Afterwards, print the names of the children, who will receive a present, each on a new line.

## Input / Constraints

* The **first line** **holds n** – the number which you have to subtract from the characters – **integer in range [1…100];**
* On the next lines, you will be receiving encrypted messages.

## Output

Print the **names of the children**, each on a new line

## Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 3  CNdwhamigyenumje$J$  CEreelh-nmguuejn$J$  CVwdq&gnmjkvng$Q$  end | Kate  Bobbie | We receive three messages and to decrypt them we use the key:  First message has decryption key 3. So we substract from each characters code 3 and we receive:  @Kate^jfdvbkrjgb!G!  @Bobbie\*kjdrrbgk!G!  @Stan#dkjghskd!N!  **They are all valid** and they contain a child’s name and behavior – G for good and N for naughty. |
| **Input** | **Output** | **Comments** |
| 3  N}eideidmk$'(mnyenmCNlpamnin$J$  ddddkkkkmvkvmCFrqqru-nvevek$J$nmgievnge  ppqmkkkmnolmnnCEhq/vkievk$Q$  yyegiivoguCYdohqwlqh/kguimhk$J$  end | Kim  Connor  Valentine | We receive four messages.  They are with key 3:  Kzbfabfajh!$%jkvbkj@Kim^jkfk!G!  aaaahhhhjshsj@Connor\*ksbsbh!G!kjdfbskdb  mmnjhhhjklijkk@Ben,shfbsh!N!  vvbdffsldr@Valentine,hdrfjeh!G! |