

Problem F. Delete

Time limit 2000 ms

Mem limit 262144 kB

OS Linux

You have a dictionary (M) that stores pairs of a string key and an integer value. Each key in (M) must be unique. You need to perform a series of operations on this dictionary..

- Insert: Add a pair (key, value) to (M).
- Get: Print the value for a given key. Print 0 if the key does not exist.
- Delete: Remove the pair with the given key from (M).

Input

The input is given in the following format.

An integer (q) ($1 \leq (q) \leq 200,000$), the number of queries. Each query is one of the following:

$0keyx$: Insert the pair (key, x).

$1key$: Get the value for the key.

$2key$: Delete the pair with the key.

where the first digits 0, 1 and 2 represent insert, get and delete operations respectively.

Output

For each get operation, print an integer in a line.

Constraints

- $1 \leq x \leq 1,000,000,000$
- $1 \leq \text{length of } key \leq 20$
- key consists of lower case letters

Input	Output
8 0 blue 4 0 red 1 0 white 5 1 red 1 blue 2 red 1 black 1 red	1 4 0 0