Problem C. Pair tracking

Time limit	4000 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).
- Dump: Print all pairs (key, value) where the key is between (L) and (R) (inclusive) in lexicographic order.

Input

The input is given in the following format.

$0keyx$: Insert the pair (key, x).
$1key$: Get the value for the key.
$2key$: Delete the pair with the key.
$3LR$: Dump all pairs with keys between (L) and (R) in lexicographic order.

Output

For each get operation, print the corresponding value.
For each dump operation, print the corresponding elements formed by a pair of the key and the value. For the dump operation, print the elements (a pair of key and value separated by a space character) in ascending order of the keys.

Constraints

- $1 \leq x \leq 1,000,000,000$
- $1 \leq$ length of $key \leq 20$
- key consists of lower-case letters
- $L \leq R$ in lexicographic order
- The total number of elements printed by dump operations does not exceed $1,000,000$

Input	Output
9 0 blue 4 0 red 1 0 white 5 1 red 1 blue 2 red 1 black 1 red 3 w z	1 4 0 0 white 5