Maps-STL

Maps are a part of the C++ STL. Maps are associative containers that store elements formed by a combination of a key value and a mapped value, following a specific order. The mainly used member functions of maps are:

• Map Template:

std::map <key< th=""><th>type,</th><th>data</th><th>type></th></key<>	type,	data	type>
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• Declaration:

map<string,int>m; //Creates a map m where key_type is of type string and data_type is of type int.

• Size:

int length=m.size(); //Gives the size of the map.

Insert:

m.insert(make_pair("hello",9)); //Here the pair is inserted into the map where the key is "hello" and the value associated with it is 9.

• Erasing an element:

m.erase(val); //Erases the pair from the map where the key_type is val.

• Finding an element:

map<string,int>::iterator itr=m.find(val); //Gives the iterator to the element val if it is found otherwise returns m.end() . Ex: map<string,int>::iterator itr=m.find("Maps"); //If Maps is not present as the key value then itr==m.end().

• Accessing the value stored in the key:

To get the value stored of the key "MAPS" we can do m["MAPS"] or we can get the iterator using the find function and then by itr->second we can access the value.

To know more about maps click Here.

You are appointed as the assistant to a teacher in a school and she is correcting the answer sheets of the students. Each student can have multiple answer sheets. So the teacher has Q queries:

- 1 X Y: Add the marks Y to the student whose name is X.
- 2 X: Erase the marks of the students whose name is X.
- 3~X: Print the marks of the students whose name is X. (If X didn't get any marks print 0.)

Input Format

The first line of the input contains Q where Q is the number of queries. The next Q lines contain 1 query each. The first integer, type of each query is the type of the query. If query is of type 1, it consists of one string and an integer X and Y where X is the name of the student and Y is the marks of the student. If query is of type 2 or 3, it consists of a single string X where X is the name of the student.

Constraints



$$1 \leq type \leq 3$$

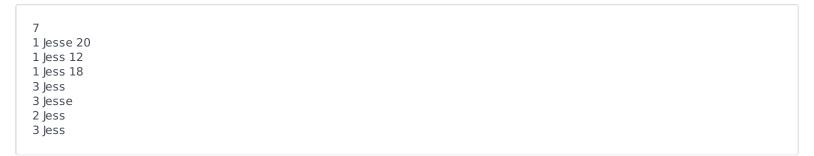
$$1 \le |X| \le 6$$

$$1 \le Y \le 10^3$$

Output Format

For queries of type ${\bf 3}$ print the marks of the given student.

Sample Input



Sample Output

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30
20
0
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