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A Practice

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Maps-STL **■**



Problem

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Discussions

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_type, data_type>

• 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.

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- ${f 2}$ ${f X}$: Erase the marks of the students whose name is ${f X}$.
- ${f 3}$ ${m X}$: Print the marks of the students whose name is ${m X}$. (If ${m X}$ didn't get any marks print ${f 0}$.)

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 $\mathbf{2}$ or $\mathbf{3}$, it consists of a single string \mathbf{X} where \mathbf{X} is the name of the student.

Constraints

- $1 \le Q \le 10^5$
- $1 \le type \le 3$
- $1 \le |X| \le 6$
- $1 \le Y \le 10^3$

Output Format

For queries of type **3** print the marks of the given student.

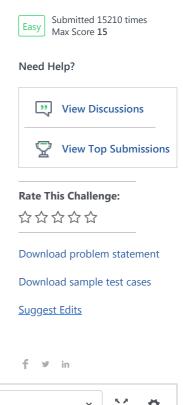
Sample Input

- 1 Jesse 20
- 1 Jess 12
- 1 Jess 18
- 3 Jess
- 3 Jesse 2 Jess
- 3 Jess

Sample Output

30

20



C++14

1 ▼ #include <iostream>

Current Buffer (saved locally, editable) & 49

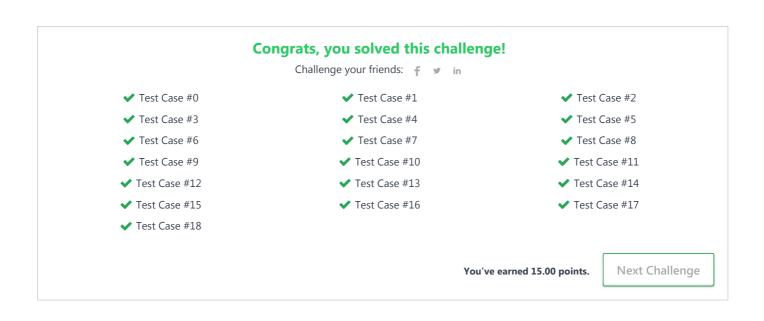
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```
2 #include <map>
   #include <cassert>
   typedef long long int int64;
 6 int main()
7 ▼ {
        std::map<std::string, int> Map;
 8
 9
        int Q; std::cin>>Q;
10
        while(Q--)
11
12 🔻
            std::string name;
13
14
            int mark;
15
            int query;
16
17
            std::cin >> query >> name ;
            assert((query>=1) && (query<=3));</pre>
18
19
20
            switch(query)
21 🔻
                 case 1: std::cin >> mark;
22
23 ▼
                         Map[name] += mark;
24
                         break;
25
                 case 2: Map.erase(name);
26
27
                         break;
28
29 🔻
                 case 3: std::cout << Map[name]<<std::endl;</pre>
30
31
            }
33
        return 0;
34
    }
35
                                                                                                                 Line: 35 Col: 1
```

<u>**1**</u> <u>Upload Code as File</u> ☐ Test against custom input

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