

```
1 #include <iostream>
2 #include <unordered_map>
3 #include <string>
4
5 using namespace std;
6
7 class Dictionary
8 {
9     private:
10         unordered_map<string, string> hashTable; // Stores key-value pairs
11
12     public:
13         void insert (const string &key ,const string &value )
14         {
15             if (hashTable.find(key) != hashTable.end())
16             {
17                 cout << "Key '" << key << "' already exists. Updating its
18                 value.\n";
19             }
20             hashTable[key] = value ;
21             cout << "Inserted/Updated: (" << key << ", " << value <<
22             ")\n";
23         }
24
25         void find (const string &key)
26         {
27             if (hashTable.find(key) != hashTable.end( ))
28             {
29                 cout <<"Found:( "<<key<<","<<hashTable[key]<<")\n";
30             }
31             else
32             {
33                 cout << "'Key"<<key<<"'not found .\n";
34             }
35         }
36
37         void remove (const string &key)
38         {
39             if (hashTable.erase(key))
40             {
41                 cout << "Key'"<<key<<"'deletead successfully.\n";
42             }
43             else
44             {
45                 cout << "Key '"<<key<<"'not found .\n";
46             }
47         }
48 }
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48         void display()
49     {
50         if (hashTable.empty())
51     {
52             cout << "The dictionary is empty.\n";
53         }
54     else
55     {
56         cout << "Current dictionary contents:\n";
57
58         for (const auto &pair : hashTable)
59     {
60             cout<<"(" <<pair.first<< ", " <<pair.second<<")\n";
61         }
62     }
63 }
64 };
65
66 int main ()
67 {
68     Dictionary dict ;
69     int choice ;
70     string key , value ;
71
72     do {
73         cout << "\n Dictionary Operations : \n";
74         cout << "1. Insert\n";
75         cout << "2. Find\n";
76         cout << "3. Delete\n";
77         cout << "4. Display\n";
78         cout << "5. Exit\n";
79
80         cout << "Enter your chioce :";
81         cin >> choice ;
82
83         switch (choice)
84     {
85             case 1:
86                 cout << "Enter Key : ";
87                 cin >> key ;
88                 cout << "Enter value : ";
89                 cin >> value ;
90                 dict.insert (key,value);
91                 break;
92
93             case 2 :
94                 cout << "Enter key to find : ";
95                 cin >> key ;
96                 dict.find (key);
97                 break;
98 }
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case 3 :
    cout << "Enter key to delete : ";
    cin >> key ;
    dict.remove (key);
    break;

case 4:
    dict.display();
    break;

case 5:
    cout << "Exiting program.\n";
    break;

default:
    cout << "Invalid choice . Please try again .\n";
}

while (choice != 5 );
return 0 ;
```

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}
```

Output:

Select D:\SE Computer\LAB CODES\DSA\DSA2.exe

Dictionary Operations :

- 1. Insert
- 2. Find
- 3. Delete
- 4. Display
- 5. Exit

Enter your choice: 1

Enter Key: Name

Enter Value: Shiv

Inserted/Updated: (Name, Shiv)

Dictionary Operations :

- 1. Insert
- 2. Find
- 3. Delete
- 4. Display
- 5. Exit

Enter your choice: 1

Enter Key: Age

Enter Value: 20

Inserted/Updated: (Age, 20)

Dictionary Operations :

- 1. Insert
- 2. Find
- 3. Delete
- 4. Display
- 5. Exit

Enter your choice: 1

Enter Key: Class

Enter Value: SE

Inserted/Updated: (Class, SE)

Dictionary Operations :

- 1. Insert
- 2. Find
- 3. Delete
- 4. Display
- 5. Exit

Enter your choice: 1

Enter Key: Div

Enter Value: C

Inserted/Updated: (Div, C)

Dictionary Operations :

- 1. Insert
- 2. Find
- 3. Delete

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[D:\SE Computer\LAB CODES\DSA\DSA2.exe] - X ^ v  
3. Delete  
4. Display  
5. Exit  
Enter your choice: 3  
Enter key to delete: class  
Key 'class' not found.  
  
Dictionary Operations :  
1. Insert  
2. Find  
3. Delete  
4. Display  
5. Exit  
Enter your choice: 3  
Enter key to delete: Class  
Key 'Class' deleted successfully.  
  
Dictionary Operations :  
1. Insert  
2. Find  
3. Delete  
4. Display  
5. Exit  
Enter your choice: 2  
Enter key to find: Name  
Found:(Name,Shiv)  
  
Dictionary Operations :  
1. Insert  
2. Find  
3. Delete  
4. Display  
5. Exit  
Enter your choice: 4  
Current dictionary contents:  
(Age, 20)  
(Div, C)  
(Name, Shiv)  
  
Dictionary Operations :  
1. Insert  
2. Find  
3. Delete  
4. Display  
5. Exit  
Enter your choice: 5  
Exiting program.  
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```