Experiment:1.3

Student Name: Virat Samdarshi	**UID: 22BCS12648**
Branch: B.E CSE	**Section/Group:IOT-627-B**
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Subject Name:DAAlab	**SubjectCode:22CSH-311**

1. **Aim:** Code to find frequency of elements in a given array in O(n) time complexity.

2. **Objective:** To find frequency of elements in a given array in O(n) time complexity.

3.**Implementation/Code:**

```cpp
#include <iostream>
#include <unordered_map>
using namespace std;
void count_frequencies(int arr[],int n){
    unordered_map<int,int>map;

    for(int i=0;i<n;i++){
        map[arr[i]]++;
    }

    for( auto x:map){
        cout<<"frequency of "<<x.first<<":"<<x.second<<endl;
    }
}

int main(){
    int arr[]={7,6,4,1,2,3,7,7,6,4,1,2};
    int n=sizeof(arr)/sizeof(int);
    count_frequencies(arr,n);
    return 0;
}
```
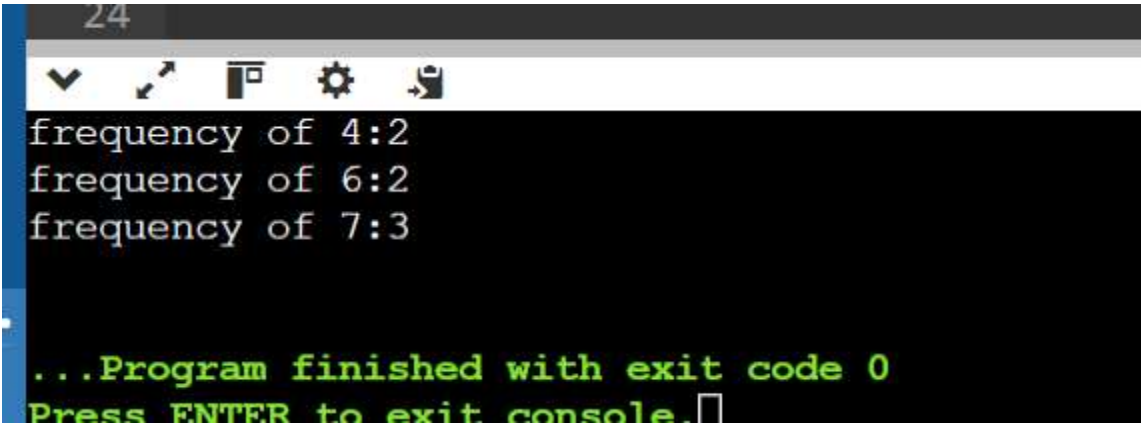
3. Output:


```
24
frequency of 4:2
frequency of 6:2
frequency of 7:3


...Program finished with exit code 0
Press ENTER to exit console.
```

4. Time Complexity

Total time complexity is O(n).