Experiment – 1.3

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Branch: CSE
Semester: 5th
Subject Name: DAA Lab

UID: 20BCS5082
Section/Group: 20BCS_WM_607-B
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1. **AIM:** Counting frequencies of array elements.

2. **Task to be done/Objective-:** Given an array which may contain duplicates, print all elements and their frequencies.

3. **Algorithm/Flowchart-:**

- Algorithm to find the frequency of each element of an array using hashing
- Input the number of elements of the array.
- Input the array elements.
- Create a hash table and update the element in one column and its frequency in the other column.
- Print the element along with its frequency.

4. **Steps of Experiment/Code-:**

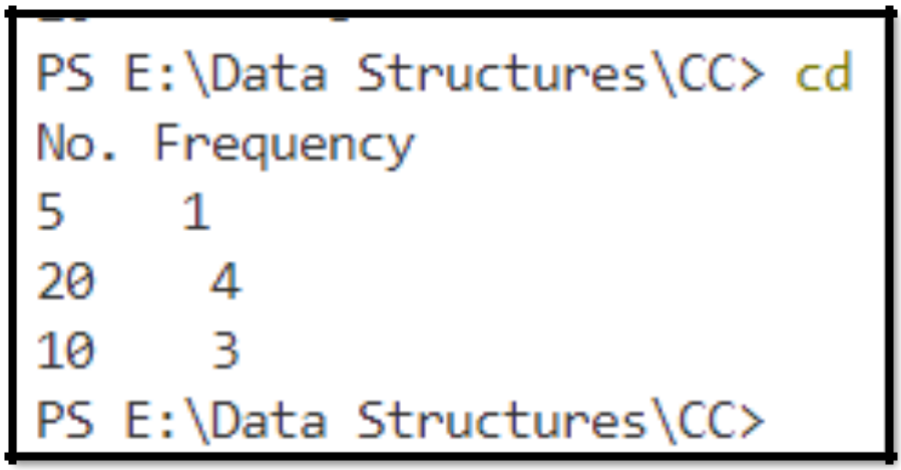
```
#include <bits/stdc++.h>
using namespace std;
void countOccurences(int arr[], int n)
{
    unordered_map<int, int> mp;
    for (int i = 0; i < n; i++)
        mp[arr[i]]++;
    cout<<"No. Frequency\n";
    for (auto x : mp)
        cout << x.first << "    " << x.second << endl;
}
int main()
```

```
{
    int arr[] = {10, 20, 20, 10, 10, 20, 5, 20};
    int n = sizeof(arr) / sizeof(arr[0]);
    countOccurences(arr, n);
    return 0;
}
```

5. Observations/Complextiy Analysis-:

Time Complexity-: O(n)
Space Complexity-: O(n)

6. Result/Output-:



Learning outcomes (What I have learnt):

1. Identify situation so to make optimistic approach
2. Approach the programming tasks using techniques learnt and write pseudo-code.
3. Choose the right data representation formats based on the requirements of the problem.
4. Analysis the complexity of the program.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			