Experiment 3

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Branch: CSE
Section/Group: 702 A
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Subject Name: DAA Lab
Subject Code: 20-CSP-312

1. Aim/Overview of the practical:

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

2. Task to be done/ Which logistics used:

To find the frequency of element in an array.

3. Algorithm/Flowchart (For programming based labs):

4. Steps for experiment/practical/Code:

```
package com.DAA;

import java.util.*;

public class DAA_exp1_3 {
    public static void main(String[] args) {
        int []arr = {1,7,7,9,9,8,3,2,5,10};
        Count(arr, arr.length);
    }
     static void Count(int []arr,int n){
        int[] hash = new int[n];
        Arrays.fill(hash, 0);

        int i = 0;

        while (i < n)
        {
            hash[arr[i] - 1]++;
            i++;
        }

        for( int j = 0; j < n; j++)
        {
            System.out.println((j + 1) + " --> " + hash[j]);
        }
    }
}
```

5. Observations/Discussions/ Complexity Analysis:

Time complexity of calculating frequencies of the elements in an array is O(n).

6. Result/Output/Writing Summary:

```
1 ⟶ 1
2 ⟶ 1
3 ⟶ 1
4 ⟶ 0
5 ⟶ 1
6 ⟶ 0
7 ⟶ 2
8 ⟶ 1
9 ⟶ 2
10 ⟶ 1
```

Learning outcomes (What I have learnt):

1. Learnt how to calculate frequencies of the elements in an array.
2. Learnt about the hash map.
3. Learnt how to use hash.
4.
5.

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.			