

BASIC TO ADVANCED CODING QUESTION

by

Love Kumar

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Chapter 1

Data Structures and Algorithms

1.1 Counting frequencies of array elements

$O(n^2)$

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    int n=10, count=0;
    int a[10] = {4, 4, 6, 5, 6, 2, 1, 7, 6, 5 }, b[10];
    for(int i = 0; i < n ;i++)
    {
```

```

    if(a[i] != -1)
    {
        count = 1;
        for(int j=i+1 ; j<n ; j++)
        {
            if(a[i]==a[j])
            {
                count ++;
                a[j]=-1;
            }
        }

    }
    else if(a[i] == -1)
    count = 0;
    b[i]=count;
}
for(int i = 0; i < n ;i++)
{
    if(a[i]!=-1)
        cout<<a[i] << " freq " <<b[i]<<endl;
}
return 0;
}

```

output

```
4 freq 2
6 freq 3
5 freq 2
2 freq 1
1 freq 1
7 freq 1
```

1.2 concatenate string

```
// C Program to demonstrate use of bitwise operators
#include<bits/stdc++.h>
using namespace std;

string FindIt (int N, vector<char> ch) {
    // Write your code here
    string s;
    for(int i = 0; i < N; i++)
    {
        s+=ch[i];
    }
    return s;
}

int main() {
```

```

ios::sync_with_stdio(0);
cin.tie(0);
int N;
cin >> N;
vector<char> ch(N);
for(int i_ch = 0; i_ch < N; i_ch++)
{
    cin >> ch[i_ch];
}

string out_;
out_ = FindIt(N, ch);
cout << out_;
}

```

```

input
4
o m a r
output
omar

```

1.3 Chef and Meetings time conversion

```

#include <iostream>
#include<bits/stdc++.h>

```

```

using namespace std;

bool comp(string a, string b)
{int i,j;
i=stoi(a.substr(0,2))*60*(a.substr(0,2) != "12") +
    stoi(a.substr(3,2)) + 720*(a.substr(5,1)=="P");
j=stoi(b.substr(0,2))*60*(b.substr(0,2) != "12") +
    stoi(b.substr(3,2)) + 720*(b.substr(5,1)=="P");

    return (i<=j);
}

int main()
{int t;
cin>>t;
while(t--){
    string s1, s2;
    cin>>s1>>s2;

    s1+=s2;

    int n;
    cin>>n;
    while(n--){
        {
            string f1, f2 ,f3 ,f4;
            cin>>f1>>f2>>f3>>f4;

            f1+=f2;

```

```

        f3+=f4;

        if(comp(f1, s1) && comp(s1, f3))
            cout<<"1";
        else
            cout<<"0";
    }
    cout<<endl;

}

return 0;

}

```

Example Input

2

12:01 AM

4

12:00 AM 11:42 PM

12:01 AM 11:59 AM

12:30 AM 12:00 PM

11:59 AM 11:59 PM

04:12 PM

5

12:00 AM 11:59 PM

01:00 PM 04:12 PM

04:12 PM 04:12 PM

04:12 AM 04:12 AM

12:00 PM 11:59 PM

Example Output

1100

11101