

Q1.

```
#include<iostream>

#define max 100

using namespace std;

int main()

{

    int a[100];

    int t,i,key,n,flag,c;

    cout<<"enter number of test cases";

    cin>>t;

    for(int p=0;p<t;p++)

    {

        flag=0;

        c=1;

        cout<<"enter the number of elements:";

        cin>>n;

        cout<<"enter the sorted array";

        for(i=0;i<n;i++)

        cin>>a[i];

        cout<<"enter the element to be searched";

        cin>>key;

        int l=0,u=n-1,mid,temp;

        while(l<=u)

        {

            mid=(l+u)/2;

            if(key==a[mid])
```

```
{  
temp=mid;  
flag=1;  
while(a[mid-1]==key)  
{  
    mid--;  
    c++;}  
while(a[temp+1]==key)  
{  
    temp++;  
    c++;}  
}  
break;  
}  
else if(key<mid)  
u=mid-1;  
else  
l=mid+1;  
  
}  
if(flag==0)  
cout<<"not Present";  
else  
cout<<key<<" - "<<c<<endl;  
}  
return 0;    }
```

OUTPUT-

enter number of test cases2

enter the number of elements:10

enter the sorted array235 235 278 278 763 764 790 853 981 981

enter the element to be searched981

981 - 2

enter the number of elements:15

enter the sorted array1 2 2 3 3 5 5 5 25 75 75 75 97 97 97

enter the element to be searched75

75 - 3

Q2.

```
#include<iostream>

#define max 100

using namespace std;

int main()

{

    int a[100];

    int t,i,key,n,j,k;

    cout<<"enter number of test cases";

    cin>>t;

    for(int p=0;p<t;p++)

    {

        cout<<"enter the number of elements:";

        cin>>n;

        cout<<"enter the sorted array";

        for(i=0;i<n;i++)

        cin>>a[i];

        int f=0;

        for(i=0;i<n;i++)

        {

            for(j=i+1;j<n;j++)

            {

                for(k=j+1;k<n;k++)

                {
```

```
if(a[i]+a[j]==a[k])  
{  
    cout<<i+1<<","<<j+1<<","<<k+1<<endl;  
    f=1;  
    break;  
}  
}  
  
}  
  
if(f==0)  
cout<<"No sequence found"<<endl;  
}  
return 0;  
}
```

OUTPUT-

enter number of test cases3

enter the number of elements:5

enter the sorted array1 5 84 209 341

No sequence found

enter the number of elements:10

enter the sorted array24 28 48 71 86 89 92 120 194 201

2,7,8

enter the number of elements:15

enter the sorted array64 69 82 95 99 107 113 141 171 350 369 400 511 590 666

1,6,9

Q3.

```
#include<iostream>
#include<cstdlib>
using namespace std;
int main()
{
    int a[100];
    int t,i,key,n,c,j;
    cout<<"enter number of test cases";
    cin>>t;
    for(int p=0;p<t;p++)
    {
        c=0;
        cout<<"enter the number of elements:";
        cin>>n;
        cout<<"enter the elements";
        for(i=0;i<n;i++)
            cin>>a[i];
        cout<<"enter the element to be searched";
        cin>>key;
        for(i=0;i<n;i++)
        {
            for(j=i+1;j<n;j++)
            {
```

```
    if(abs(a[i]-a[j])==key)
        c++;
    }
}

cout<<c<<endl;
}

return 0;
}
```

OUTPUT-

enter number of test cases2

enter the number of elements:5

enter the elements1 51 84 21 31

enter the element to be searched20

2

enter the number of elements:10

enter the elements24 71 16 92 12 28 48 14 20 22

enter the element to be searched4

4
