**Practical No: 03**

**Write the program for the following:**

1. **Write a program to search the element using sequential search.**

**CODE**:

#include<iostream>

using namespace std;

int main(){

int arr[5],s,i,n,flag=0;

cout<<"Enter size of array: ";

cin>>s;

s=sizeof(arr)/sizeof(arr[2]);

cout<<"Enter number: ";

for(i=0;i<s;i++){

cin>>arr[i];

}

cout<<"Enter number you want to find: ";

cin>>n;

for(i=0;i<s;i++){

if(arr[i]==n){

flag=1;

}

}

if(flag==1){

cout<<"Element found in array" ;

}

else{

cout<<"Element not found in array" ;

}

}

**OUTPUT:**

**……………………………………………………………………………**

Enter size of array: 5

Enter number: 45 63 93 33 18

Enter number you want to find: 45

Element found in array

**…………………………………………………………………………**

1. **Write a program to search the element using binary search.**

**Code:**

#include<iostream>

using namespace std;

int bs(int a[],int lb,int ub,int num){

int mid;

while(lb<=ub){

mid=(lb+ub)/2;

if(a[mid]==num){

return 1;

}

else if(a[mid]<num){

lb=mid+1;

}

else{

ub=mid-1;

}

}

return -1;

}

int main(){

int a[5]={45,63,93,33,18},lb=0,ub=4,num;

for(int i=0;i<5;i++){

for(int j=i+1;j<5;j++){

if(a[i]>a[j]){

int t=a[i];

a[i]=a[j];

a[j]=t;

}

}

}

cout<<"Array is :";

for(int i=0;i<5;i++){

cout<<a[i]<<" ";

}

cout<<endl;

cout<<"Enter Number for search: ";

cin>>num;

if(bs(a,lb,ub,num)==1){

cout<<num<<" "<<"Number is found";

}

else{

cout<<num<<" "<<"Number not found";

}

return 0;

}

**Output:**

**………………………………………………………………………………**

Array is :18 33 45 63 93

Enter Number for search: 45

45 Number is found

**……………………………………………………………………………..**