**Assignment-2**

**Name:** Kunal Hume

**Reg.No :** 2021BIT503

1. **Binary Search**

#include<iostream>

using namespace std;

int Binarysearch(int arr[],int element,int size){

int low=0;

int high=size-1;

int mid;

int i=1;

while(low<=high){

cout<<"Test : "<<i<<endl;

mid=((low+high)/2);// it automatically take greatest integer

if(arr[mid]==element){

return mid;

}

else if(arr[mid]<element){

low=mid+1;

}

else{

high=mid-1;

}

i++;

}

return 0;

}

int main(){

int arr[20]={2,32,45,55,66,77}; // array must be sorted in the binary search

int element=77;

int check=Binarysearch(arr,element,6);

if(check){ // any non-zero condition is true

cout<<element<<" present in the array"<<" at index "<<check<<endl;

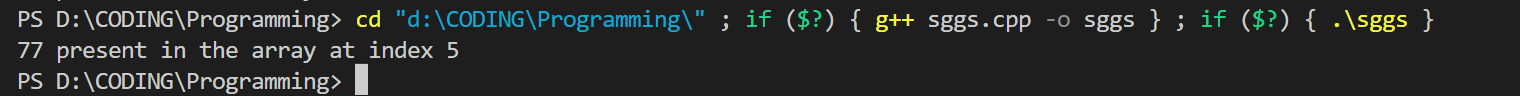
}

else{

cout<<element<<" not present in the array"<<endl;

}

}

****

1. **Linear Search**

#include<iostream>

using namespace std;

int linearSearch(int arr[],int element,int size,int index){

if(index>=size){

return -1;

}

else if(arr[index]==element){

return index;

}

else{

return linearSearch(arr,element,size,index+1);

}

}

int main(){

int arr[5]={1,3,2,6,4};

int index=linearSearch(arr,6,5,0);

if(index==-1){

cout<<"element is not present in the array"<<endl;

}

else{

cout<<"element is present at the index "<<index<<endl;

}

}

