ALGORTHIM

Step 1:The array in which searching is to be performed is:

Let x=4 be the element to be searched.

Step 2:Set two pointers low and high at the lowest and highest positions respectively.

Step 3:Find the element ‘mid’ of the array i.e.arr[low+high/2].

Step 4:if x==mid,then return mid else compare the element to be searched with m.

Step 5:if x>mid,compare x with the middle element of the elements on the right side of the mid.this sis done by setting low to low=mid+1.

Step 6:Else compare x with the middle element of the elements on the right side of the mid.This is done by setting high to high=mid-1.

Step 7:Repeat the steps 3 to 6 until low meets high.

Step 8:x=4 is found.

PROGRAM

#include<stdio.h>

int binary\_search(int arr[],int x,int low,int high)

{

if(high>=low)

{

int mid=(low+high)/2;

if(arr[mid]==x)

return mid;

else if(arr[mid]>x)

return binary\_search(arr,x,low,mid-1);

else

return binary\_search(arr,x,mid+1,high);

}

return -1;

}

int main()

{

int i,n,x;

printf("enter the number of elemnts in array\n");

scanf("%d",&n);

int arr[n];

printf("enter the array elements in asending order\n");

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

{

scanf("%d",&arr[i]);

}

printf("enter the elements to search\n");

scanf("%d",&x);

int result=binary\_search(arr,x,0,n-1);

if(result==-1)

printf("not found\n");

else

printf("element found at %d",result+1);

}

OUTPUT

