MODEL ENGINEERING COLLEGE, THRIKKAKARA

DEPARTMENT OF COMPUTER ENGINEERING



RECORD OF PRACTICAL WORKS

OOP CST205

CLASS: CS 3 B (2019 Ad.)

Name of Student: ADITHYA A

Roll No: 03

EXP No.: 01

Binary Search

AIM

Write a Java program that implements the binary search algorithm.

PROGRAM

import java.util.\*;

class Main

{

void insert(int arr[])

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter elements:");

for(int i=0;i<arr.length;i++)

arr[i] = sc.nextInt();

}

void bubble(int arr[])

{

int temp;

for(int i=0;i<arr.length-1;i++)

{

for(int j=0;j<arr.length-1-i;j++)

{

if(arr[j]>arr[j+1])

{

temp = arr[j];

arr[j] = arr[j+1];

arr[j+1] = temp;

}

}

}

}

int binarySearch(int arr[], int elem)

{

int mid,l,u,pos;

l = 0;

u = arr.length - 1;

pos = -1;

while(l <= u)

{

mid = l + (u-l)/2;

if(arr[mid] > elem)

u = mid - 1;

else if(arr[mid] < elem)

l = mid + 1;

else

{

pos = mid;

break;

}

}

return pos;

}

void display(int arr[])

{

System.out.print("The array after sorting are: ");

for(int i=0;i<arr.length;i++)

System.out.print(arr[i] + " ");

System.out.println();

}

public static void main(String args[])

{

binary b1 = new binary();

Scanner sc = new Scanner(System.in);

System.out.print("Enter the number of elements: ");

int n = sc.nextInt();

int arr[] = new int[n];

b1.insert(arr);

b1.bubble(arr);

b1.display(arr);

System.out.print("Enter the element to be searched: ");

int x = sc.nextInt();

int res = b1.binarySearch(arr, x);

if(res == -1)

System.out.println("The element was not found ");

else

System.out.println("The element, " + x + " was found in the array at position " + (res+1));

}

}

OUTPUT

