//ALGORITHM binaryS(a,n,elem)

//Problem description : implement binary search

//Input: a n elem

//Output: search an elem in an array using binary search

#include<stdio.h>

void binaryS(int[],int,int);

int main()

{

int i,a[30],n,elem;

printf("Enter the size of the sorted array\n");

scanf("%d",&n);

printf("Enter the elements\n");

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

{

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

}

printf("Enter the elem to be searched in the sorted array\n");

scanf("%d",&elem);

binaryS(a,n,elem);

return 0;

}

void binaryS(int a[],int n,int elem)

{

int mid,low,high;

low=0;

high=n-1;

while(low<high)

{

mid=(low+high)/2;

if(a[mid]==elem)

{

printf("Elem found at location %d\n",mid+1);

return;

}

else

{

if(a[mid]>elem)

{

high=mid-1;

}

else

{

low=mid+1;

}

}

}

printf("elem was not found in the array\n");

return;

}

OUTPUT:

Enter the size of the sorted array

5

Enter the elements

1

2

3

4

5

Enter the elem to be searched in the sorted array

4

Elem found at location 4