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Program:

```c
#include <stdio.h>

int BSearch( int arr[], int x, int n){
        int beg=0, end=n-1, mid=end/2;
        while(beg<=end){
                if(x==arr[mid])
                        return mid;
                else if(x<arr[mid]){
                        end=mid-1;
                        mid=(beg+end)/2;
                }
                else{
                        beg=mid+1;
                        mid=(beg+end)/2;
                }
        }

        return -1;
}

void sort(int arr[], int n){
        int i,j;
        for(i=0; i<n-1;i++){
                for(j=0;j<n-1-i;j++){
                        if (arr[j]>arr[j+1]){
                                int temp=arr[j];
                                arr[j]=arr[j+1];
                                arr[j+1]=temp;
                        }
                }
        }
```

```c
}

int main(){
        int x,n,arr[50];
        printf("Enter no. of elements in array:");
        scanf("%d", &n);
        printf("Enter elements of array:");
        for(int i=0; i<n; i++)
                scanf("%d", &arr[i]);
        sort(arr,n);
        printf("Sorted array is:");
        for(int i=0; i<n; i++)
                printf("%d ", arr[i]);
        printf("\nEnter element to be searched:");
        scanf("%d", &x);
        int pos=BSearch(arr,x,n);
        if (pos==-1)
                printf("Element is not in array");
        else
                printf("Position of element in array: %d\n", pos+1);
        return 0;
}
```

Output:

Open   ⊡   Search.C
                                   ~/Megh   Save   ≡

```
                    dl0419@itadmin: ~/Megh
10
11
12  dl0419@itadmin:~/Megh$ gcc Search.C
13  dl0419@itadmin:~/Megh$ ./a.out
14  Enter no. of elements in array:6
15  Enter elements of array:1
16  6
    8
17  9
18  4
19 }  5
20  Sorted array is:1 4 5 6 8 9
21 vo Enter element to be searched:4
22  Position of element in array: 2
23  dl0419@itadmin:~/Megh$
24
25
26
27
28
29
30
31
32 }
33
34 int
35
36     printf( Enter no. of elements in array: );
37     scanf("%d", &n);
38     printf("Enter elements of array:");
39     for(int i=0; i<n; i++)
40         scanf("%d", &arr[i]);
41     sort(arr,n);
42     printf("Sorted array is:");
43     for(int i=0; i<n; i++)
44         printf("%d ", arr[i]);
45     printf("\nEnter element to be searched:");
46     scanf("%d", &x);
47     int pos=BSearch(arr,x,n);
48     if (pos==-1)
49         printf("Element is not in array");
50     else
51         printf("Position of element in array: %d\n", pos+1);
52     return 0;
53 }
```

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