

/*C Program to implement Binary Search

Input : 1. Size of the array

2. Array elements in ascending order

3. Element you want to search in the array

Output : 1.Index of the key element on successful search

2. -1 on unsuccessful search

***/**

```
#include<stdio.h>
```

```
int main() {
```

```
    int n, a[30], item, i, j, mid, top, bottom;
```

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

```
    scanf("%d", &n);
```

```
    printf("Enter the array elements in ascending order\n");
```

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

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

```
    }
```

```
    printf("\nEnter the key element to search\n");
```

```
    scanf("%d", &item);
```

```
    bottom = 1;
```

```
    top = n;
```

```
    do {
```

```
        mid = (bottom + top) / 2;
```

```
        if (item < a[mid])
```

```
            top = mid - 1;
```

```
        else if (item > a[mid])
```

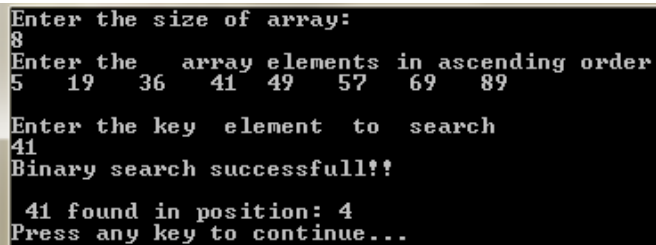
```
            bottom = mid + 1;
```

```
    } while (item != a[mid] && bottom <= top);
```

```
if (item == a[mid]) {  
    printf("Binary search successfull!!\n");  
    printf("\n %d found in position: %d\n", item, mid + 1);  
} else {  
    printf("\n Search failed\n %d not found\n", item);  
}  
return 0;  
}
```

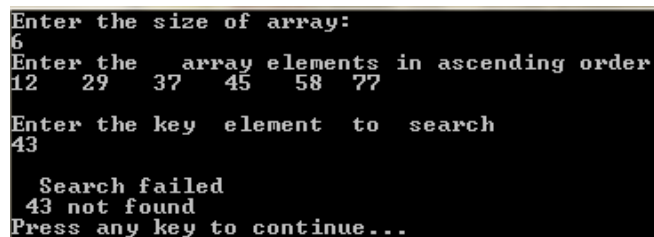
Sample Input and Output:

1.



```
Enter the size of array:  
8  
Enter the array elements in ascending order  
5 19 36 41 49 57 69 89  
Enter the key element to search  
41  
Binary search successfull!!  
41 found in position: 4  
Press any key to continue...
```

2.



```
Enter the size of array:  
6  
Enter the array elements in ascending order  
12 29 37 45 58 77  
Enter the key element to search  
43  
Search failed  
43 not found  
Press any key to continue...
```