

**7. Implement a C program to perform a binary search on a sorted array with a user defined function.**

```
#include <stdio.h>

#include <stdlib.h>

void search(int *a,int key,int n)
{
    int low,high,mid,i;

    low=0;

    high=n-1;

    mid=(low+high)/2;


    while(high!=low)
    {
        if(key==a[mid])
        {
            printf("The key %d is found in the position %d",key,mid+1);

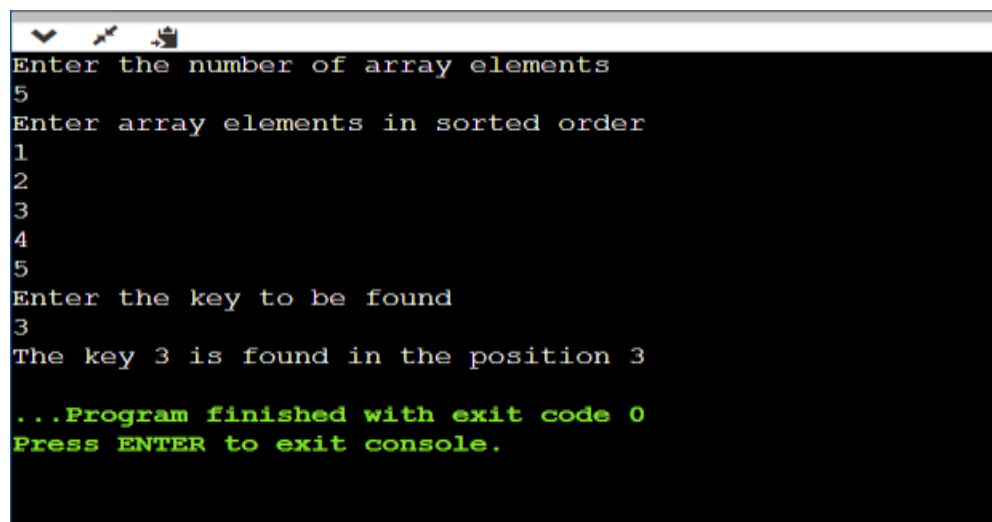
            exit(0);
        }
        else if(key<a[mid])
        {
            high=mid-1;
        }
        else if(key>a[mid])
        {
            low=mid+1;
        }
    }
}
```

```

    }
    printf("The key %d not found",key);
}
void main()
{
    int i,a[10];
    int n,key;
    printf("Enter the number of array elements\n");
    scanf("%d",&n);
    printf("Enter array elements in sorted order\n");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Enter the key to be found\n");
    scanf("%d",&key);
    search(a,key,n);
}

```

## OUTPUT:



```

Enter the number of array elements
5
Enter array elements in sorted order
1
2
3
4
5
Enter the key to be found
3
The key 3 is found in the position 3
...Program finished with exit code 0
Press ENTER to exit console.

```