main.c

```c
/* Program to implement linear search and Binary search */

#include <stdio.h>

#include <stdlib.h>

int main()
{
    int array[100],search_key,i,j,n,low,high,location,choice;

    void linear_search(int search_key,int array[100],int n);

    void binary_search(int search_key,int array[100],int n);
 printf("ENTER THE SIZE OF THE ARRAY:");

    scanf("%d",&n);

    printf("ENTER THE ELEMENTS OF THE ARRAY:\n");

    for(i=1;i<=n;i++)
    {

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

    }
 printf("ENTER THE SEARCH KEY:");

```

input

main.c

```c

    scanf("%d",&search_key);
    printf("\n");

    printf("1.LINEAR SEARCH\n");

    printf("2.BINARY SEARCH\n");

    printf("\n");

    printf("ENTER YOUR CHOICE:");

    scanf("%d",&choice);

    switch(choice)
    {

    case 1:

        linear_search(search_key,array,n);

        break;

    case 2:

        binary_search(search_key,array,n);

```

input

main.c

```
54          break;
55
56      default:
57
58          exit(0);
59
60  }
61
62
63      return 0;
64
65  }
66    void linear_search(int search_key,int array[100],int n)
67      {
68  int i,location;
69
70          for(i=1;i<=n;i++)
71          {
72
73              if(search_key == array[i])
74              {
75
76                  location = i;
77
78      printf("\n");
79
80      printf("The location of Search Key = %d is %d\n",search_key,location);
```

input

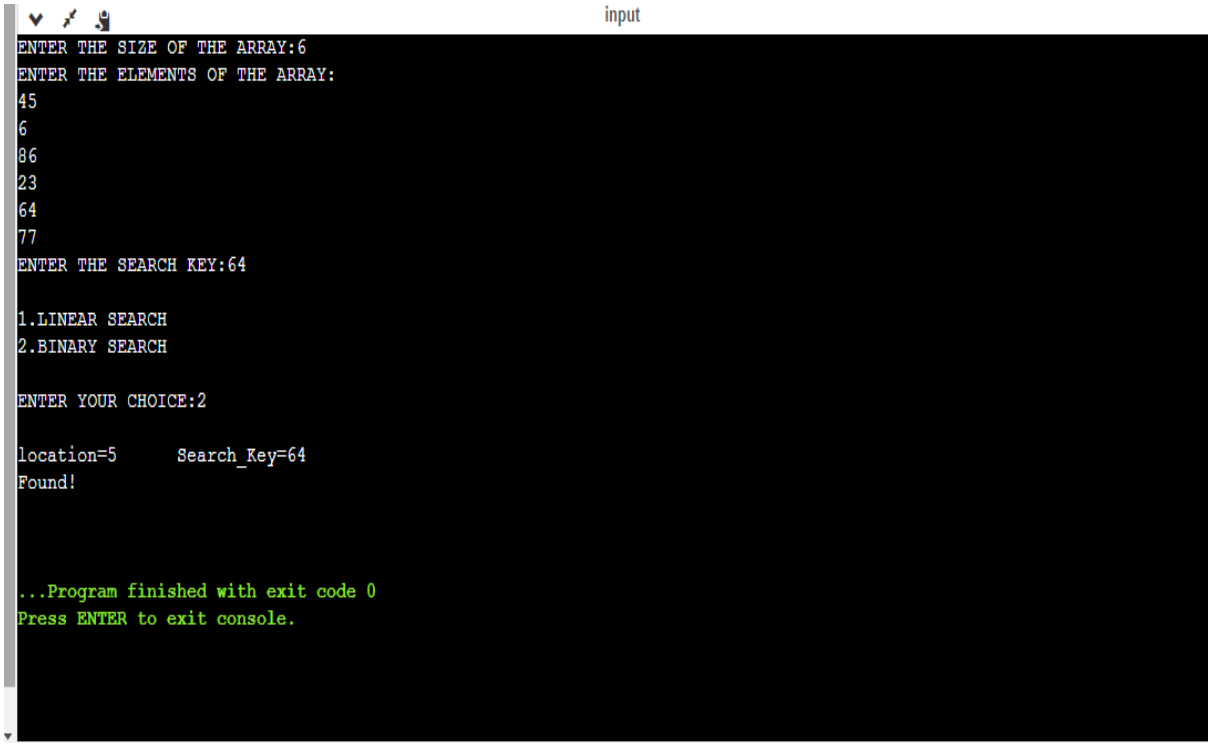
main.c

```
82      printf("\n");
83
84          }
85
86      }
87
88  }
89  void binary_search(int search_key,int array[100],int n)
90  {
91
92      int mid,i,low,high;
93
94      low = 1;
95
96      high = n;
97
98      mid = (low + high)/2;
99
100     i=1;
101
102     while(search_key != array[mid])
103     {
104
105         if(search_key <= array[mid])
106         {
107
108             low = 1;
```

```
            low = 1;

            high = mid+1;

            mid = (low+high)/2;

        }
        else
        {

            low = mid+1;
            high = n;

            mid = (low+high)/2;
}
}
 printf("\n");
     printf("location=%d\t",mid);
     printf("Search_Key=%d \nFound!\n",search_key);
    printf("\n");
}

```

input

```
ENTER THE SIZE OF THE ARRAY:6
ENTER THE ELEMENTS OF THE ARRAY:
45
6
86
23
64
87
ENTER THE SEARCH KEY:86

1.LINEAR SEARCH
2.BINARY SEARCH

ENTER YOUR CHOICE:1

The location of Search Key = 86 is 3



...Program finished with exit code 0
Press ENTER to exit console.
```


input
ENTER THE SIZE OF THE ARRAY:6
ENTER THE ELEMENTS OF THE ARRAY:
45
6
86
23
64
77
ENTER THE SEARCH KEY:64
1.LINEAR SEARCH
2.BINARY SEARCH
ENTER YOUR CHOICE:2
location=5 Search_Key=64
Found!
...Program finished with exit code 0
Press ENTER to exit console.