

Binary Search:

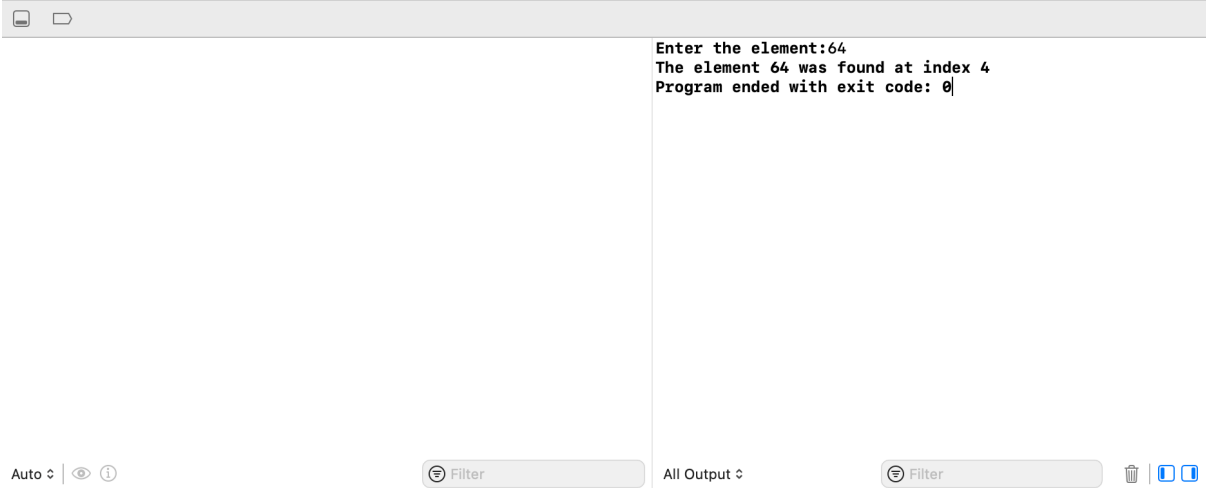
```
#include<stdio.h>

int binarySearch(int arr[], int size, int element){
    int low, mid, high;
    low = 0;
    high = size-1;
    // Keep searching until low <= high
    while(low<=high){
        mid = (low + high)/2;
        if(arr[mid] == element){
            return mid;
        }
        if(arr[mid]<element){
            low = mid+1;
        }
        else{
            high = mid -1;
        }
    }
    return -1;
}

int main(){






    int arr[] = {1,3,5,56,64,73,123,225,444};
    int size = sizeof(arr)/sizeof(int);
    int element;
    printf("Enter the element:");
    scanf("%d",&element);
    int searchIndex = binarySearch(arr, size, element);
    printf("The element %d was found at index %d \n", element,
searchIndex);
    return 0;
}
```

Output:



A terminal window with a light gray title bar containing two window control icons. The main area is white and displays the following text: "Enter the element:64", "The element 64 was found at index 4", and "Program ended with exit code: 0". At the bottom, there is a dark gray status bar with several controls: on the left, "Auto" with a dropdown arrow, an eye icon, and an information icon; in the center, a "Filter" button with a dropdown arrow; to the right of the center, "All Output" with a dropdown arrow; and on the far right, another "Filter" button with a dropdown arrow, followed by a trash icon and two document icons.

```
Enter the element:64
The element 64 was found at index 4
Program ended with exit code: 0
```

Auto ▾ |   Filter ▾ All Output ▾ Filter ▾   

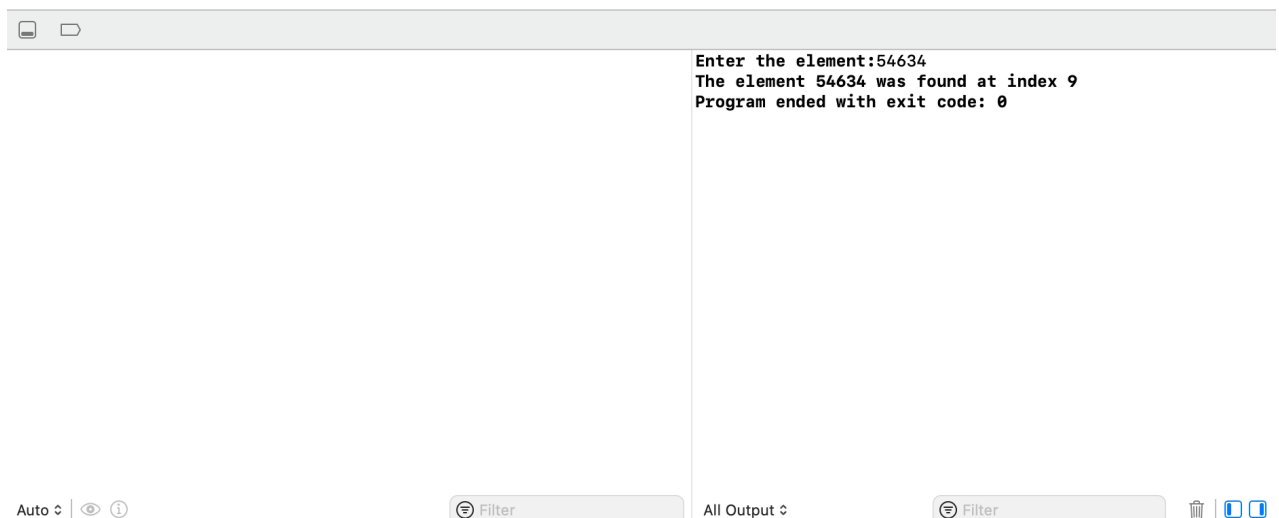
Linear Search:

```
#include<stdio.h>

int linearSearch(int arr[], int size, int element){
    for (int i = 0; i < size; i++)
    {
        if(arr[i]==element){
            return i;
        }
    }
    return -1;
}

int main(){
    int arr[] = {1,3,5,56,4,3,23,5,4,54634,56,34};
    int size = sizeof(arr)/sizeof(int);
    int element;
    printf("Enter the element:");
    scanf("%d",&element);
    int searchIndex = linearSearch(arr, size, element);
    printf("The element %d was found at index %d \n",
element, searchIndex);
    return 0;
}
```

Output:



```
Enter the element:54634
The element 54634 was found at index 9
Program ended with exit code: 0
```