

## EXP 09

## BINARY SEARCH

### Program

```
#include <stdio.h>

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

int main() {
    int arr[100], n, i, target, result;
    printf("Enter the number of elements: ");
    scanf("%d", &n);
    printf("Enter %d sorted elements:\n", n);
    for (i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    printf("Enter the number to search: ");
    scanf("%d", &target);
    result = binarySearch(arr, n, target);
    if (result != -1)
        printf("Element found at position %d.\n", result);
}
```

else

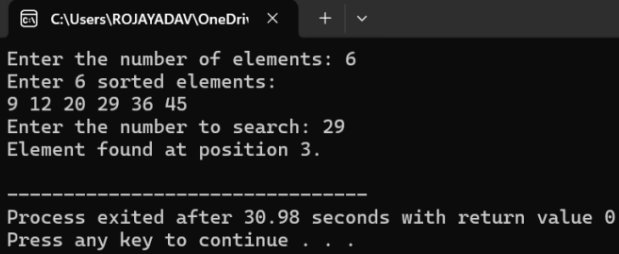
```
printf("Element not found in the array.\n");
```

```
return 0;
```

```
}
```

## Output

```
int main() {  
    int arr[100], n, i, target, result;  
  
    printf("Enter the number of elements: ");  
    scanf("%d", &n);  
  
    printf("Enter %d sorted elements:\n", n);  
    for (i = 0; i < n; i++) {  
        scanf("%d", &arr[i]);  
    }  
  
    printf("Enter the number to search: ");  
    scanf("%d", &target);  
  
    result = binarySearch(arr, n, target);  
  
    if (result != -1)  
        printf("Element found at position %d.\n", result);  
    else  
        printf("Element not found in the array.\n");  
  
    return 0;  
}
```



```
C:\Users\ROJAYADAV\OneDrive  
Enter the number of elements: 6  
Enter 6 sorted elements:  
9 12 20 29 36 45  
Enter the number to search: 29  
Element found at position 3.  
  
-----  
Process exited after 30.98 seconds with return value 0  
Press any key to continue . . .
```