

## CSA0317-DATA STRUCTURES

PROGRAM 9- Write a c program to search a number using binary search method

```
#include <stdio.h>

int main() {
    int arr[100], n, key, low, high, mid, found = 0, i;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    printf("Enter %d sorted elements (ascending):\n", n);
    for(i = 0; i < n; i++)
        scanf("%d", &arr[i]);
    printf("Enter element to search: ");
    scanf("%d", &key);
    low = 0;
    high = n - 1;
    while(low <= high) {
        mid = (low + high) / 2;
        if(arr[mid] == key) {
            printf("Element %d found at position %d\n", key, mid+1);
            found = 1;
            break;
        } else if(arr[mid] < key) {
            low = mid + 1;
        } else {
            high = mid - 1;
        }
    }

    if(!found)
```

```
        printf("Element %d not found in the array.\n", key);  
    return 0;  
}
```

Output:

```
Output  
Enter number of elements: 5  
Enter 5 sorted elements (ascending):  
12 20 25 34 40  
Enter element to search: 20  
Element 20 found at position 2  
  
=== Code Execution Successful ===
```