BINARY SEARCH

```c
/****    Program to Search an Array using Binary Search    ****/

#include <stdio.h>

void binary_search();
int a[50], n, item, loc, beg, mid, end;

main()
{
    int i;
    printf("\nEnter size of an array: ");
    scanf("%d", &n);

    printf("\nEnter elements of an array in sorted order:\n");
    for(i=0; i<n; i++)
        scanf("%d", &a[i]);

    printf("\nEnter ITEM to be searched: ");
    scanf("%d", &item);

    binary_search();
    getch();
}

void binary_search()
{
    int i;
    beg=0; end=n-1;
    mid=(beg+end)/2;

    while((beg<=end) && (a[mid]!=item))
    {
        if(item < a[mid])
            end = mid-1;
        else
            beg = mid+1;
        mid = (beg+end)/2;
    }

    if(a[mid] == item)
        printf("\nITEM exists at location %d", mid+1);
    else
        printf("\nITEM doesn't exist in the array.");
}
```