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

#include <stdio.h>

void binary_search();

int a[50], n, item, loc, beg, mid, end, i;

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

    printf("\nEnter elements of an array in sorted form:\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()
{
    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("\n\nITEM found at location %d", mid+1);
    else
        printf("\n\nITEM doesn't exist");
}
```