



Green University of Bangladesh



Department of Computer Science and Engineering

Course Title : Data Structure lab

Course Code : CSE 106

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CODE :

```
/**
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 */
#include <stdio.h>

void get_binary_search_form_recursive(int arr[], int start, int end, int data)
{
    if (start <= end)
    {
        if (arr[start] == data)
        {
            printf("==> %d is at %d position", data, start);
        }
        else
        {
            get_binary_search_form_recursive(arr, start += 1, end, data);
        }
    }
    else
    {
        printf(" ==> %d is not found.", data);
    }
}

int main()
{
    int arr_size, mid, start, end, data, recurs = 0;
    // get arr_size from user.
```

```

printf("\tENTER ARRAY LENGTH\t:\t");

scanf("%d", &arr_size);

printf("\n");

// defining array
int arr[arr_size];

// insert elements is the arr;
int i = 0;
while (i < arr_size)
{
    printf("\tENTER arr[%d]\t:\t", i);

    scanf("%d", &arr[i]);

    printf("\n");

    i++;
}

printf("\n<>-----<>\n<>-----<>\n");
printf("\tdata\t:\t");
scanf("%d", &data);
printf("\n");

mid = (0 + arr_size) / 2;

if (arr[mid] == data)
{
    recurs = 0;

    printf("%d is at %d position", data, mid);
}
else if (data < arr[mid])
{
    start = 0;

    end = mid - 1;

    recurs = 1;
}
else
{
    start = mid + 1;

```

```
        end = arr_size - 1;

        recurs = 1;
    }

    if (recurs)
    {
        get_binary_search_form_recursive(arr, start, end, data);
    }

    return 0;
}
```

Output :

Output demo 1 :

```
ENTER ARRAY LENGTH      :      4

ENTER arr[0]           :      1

ENTER arr[1]           :      2

ENTER arr[2]           :      3

ENTER arr[3]           :      4

<>-----<>
<>-----<>
    data      :      1

==> 1 is at 0 position
```

Output demo 2 :

```
ENTER ARRAY LENGTH      :      4

ENTER arr[0]      :      1

ENTER arr[1]      :      2

ENTER arr[2]      :      3

ENTER arr[3]      :      4


<>-----<>
<>-----<>
      data      :      3

3 is at 2 position
```