

```

1  #include<stdio.h>
2
3  int Partition(int array[], int p, int r)
4  {
5      int pivot = array[r];
6      int i = p - 1;
7      for(int j = p; j < r; j++)
8      {
9          if(array[j] <= pivot)
10         {
11             i++;
12             swap(&array[i], &array[j]);
13         }
14     }
15     swap(&array[i+1], &array[r]);
16     return (i+1);
17 }
18
19 void QuickSort(int array[], int p, int r)
20 {
21     if(p < r)
22     {
23         int q = Partition(array, p, r);
24         QuickSort(array, p, q-1);
25         QuickSort(array, q+1, r);
26     }
27 }
28
29 void swap(int *a, int *b)
30 {
31     int temp = *a;
32     *a = *b;
33     *b = temp;
34 }
35
36 void display(int array[], int length)
37 {
38     int i;
39     for(i = 0; i < length; i++)
40     {
41         printf("%d ", array[i]);
42     }
43 }
44
45
46 int main()
47 {
48     int length, i;
49     printf("##### Naive QUICKSORT ALGORITHM TESTING #####\n");
50     printf("\n=> Enter array size to create an array = ");
51     scanf("%d", &length);
52     int array[length];
53     printf("\n=> Enter %d array element:\n", length);
54
55     for(i = 0; i < length; i++)
56     {
57         scanf("%d", &array[i]);
58     }
59
60     printf("\n\n=> Before sort array elements are: ");
61
62     display(array, length);
63
64     QuickSort(array, 0, length-1);
65
66     printf("\n\n=> After sort array elements are : ");

```

```
67
68     display(array, length);
69
70     printf("\n\n");
71
72     return 0;
73 }
```