

8. Writing a program in Java implementing the quick sort algorithm

```
package OnlinePractice4;

import java.util.Scanner;

class QuickSort
{
    int partition(int arr[], int low, int high)
    {
        int pivot = arr[high];
        int i = (low-1);
        for (int j=low; j<high; j++)
        {
            if (arr[j] <= pivot)
            {
                i++;
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
        int temp = arr[i+1];
        arr[i+1] = arr[high];
        arr[high] = temp;
        return i+1;
    }

    void sort(int arr[], int low, int high)
    {
        if (low < high)
```

```

        {
            int pi = partition(arr, low, high);
            sort(arr, low, pi-1);
            sort(arr, pi+1, high);
        }
    }

    static void printArray(int arr[])
    {
        int n = arr.length;
        for (int i=0; i<n; ++i)
            System.out.print(arr[i]+" ");
        System.out.println();
    }

    public static void main(String args[])
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter size to array : ");
        int n =sc.nextInt();
        System.out.println("Enter array element : ");
        int arr[] = new int[n];
        for(int i = 0 ; i<arr.length ;++i) {
            arr[i]=sc.nextInt();
        }

        QuickSort ob = new QuickSort();
        ob.sort(arr, 0, n-1);
        System.out.println("sorted array");
        printArray(arr);
    }

```

```
}
```

output-

Enter size to array :

4

Enter array element :

23

67

90

21

sorted array

21 23 67 90