Executing the program to verify the execution of the quick sort algorithm

Program:

import java.io.\*;

class QuickSort{

static void swap(int[] arr, int i, int j)

{

int temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

static int partition(int[] arr, int low, int high)

{

// pivot

int pivot = arr[high];

// Index of smaller element and

// indicates the right position

// of pivot found so far

int i = (low - 1);

for(int j = low; j <= high - 1; j++)

{

// If current element is smaller

// than the pivot

if (arr[j] < pivot)

{

// Increment index of

// smaller element

i++;

swap(arr, i, j);

}

}

swap(arr, i + 1, high);

return (i + 1);

}

/\* The main function that implements QuickSort

arr[] --> Array to be sorted,

low --> Starting index,

high --> Ending index

\*/

static void quickSort(int[] arr, int low, int high)

{

if (low < high)

{

// pi is partitioning index, arr[p]

// is now at right place

int pi = partition(arr, low, high);

// Separately sort elements before

// partition and after partition

quickSort(arr, low, pi - 1);

quickSort(arr, pi + 1, high);

}

}

// Function to print an array

static void printArray(int[] arr, int size)

{

for(int i = 0; i < size; i++)

System.out.print(arr[i] + " ");

System.out.println();

}

public static void main(String[] args)

{

int[] arr = { 10, 7, 8, 9, 1, 5 };

int n = arr.length;

quickSort(arr, 0, n - 1);

System.out.println("Sorted array: ");

printArray(arr, n);

}

}

Output:

Sorted array:

1 5 7 8 9 10