

Ques 18: write a C program to arrange a series of numbers using Quick sort.

Aim: To write a C program to arrange a series of numbers using quick sort.

Algorithm:

- *. Start.
- *. Input the size and elements of the array.
- *. Implement quick sort using recursion.
- *. Print the sorted array.
- *. Stop.

Program:

```
#include <stdio.h>

int partition (int a[], int low, int high) {
    int pivot = a[high], i = low - 1;
    for (int j = low; j < high; j++)
        if (a[j] < pivot) {
            int t = a[i+1]; a[i+1] = a[j]; a[j] = t;
        }
    int t = a[i+1]; a[i+1] = a[high]; a[high] = t;
    return i+1;
}

void quicksort (int a[], int low, int high) {
    if (low < high) {
        int p = partition (a, low, high);
        quicksort (a, low, p-1);
        quicksort (a, p+1, high);
    }
}

int main() {
    int a[] = {4, 4, 7, 2, 1, 5};
    int n = 6;

    quicksort (a, 0, n-1);

    for (int i = 0; i < n; i++)
        printf ("%d ", a[i]);
}
```

output: 1 2 4 5 7 9

result: Thus, the program executed successfully