**LAB 06:**

**QUICK SORT ARRAY IN C PROGRAMMING**

**Code:**

#include <stdio.h>

void swap(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

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

int pivot = arr[high];

int i = (low - 1);

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

if (arr[j] < pivot) {

i++;

swap(&arr[i], &arr[j]);

}

}

swap(&arr[i + 1], &arr[high]);

return (i + 1);

}

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

if (low < high) {

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

quickSort(arr, low, pi - 1);

quickSort(arr, pi + 1, high);

}

}

int main() {

int n;

printf("Enter the number of elements in the array: ");

scanf("%d", &n);

int arr[n];

printf("Enter %d integers for the array:\n", n);

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

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

printf("Original array: ");

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

printf("%d ", arr[i]);

printf("\n");

quickSort(arr, 0, n - 1);

printf("Sorted array: ");

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

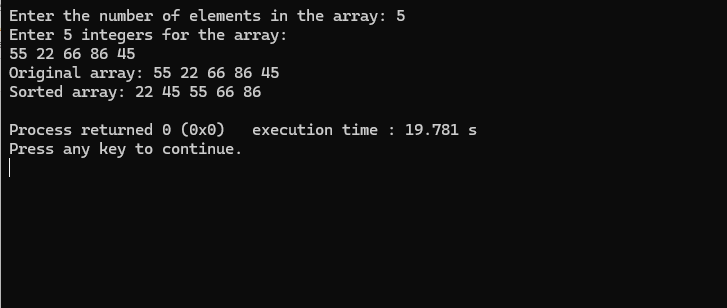
printf("%d ", arr[i]);

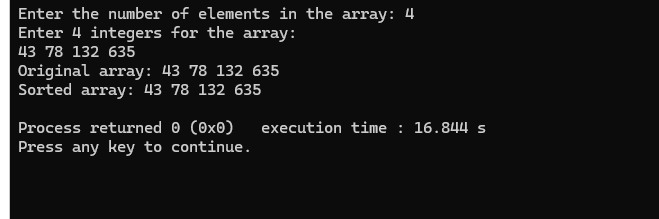
printf("\n");

return 0;

}

**OUTPUT:**

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