#include <stdio.h>

#include <stdlib.h>

void swap(int \*x, int \*y) {

int temp = \*x;

\*x = \*y;

\*y = temp;

}

int sort(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++;

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 position = sort(arr, low, high);

quicksort(arr, low, position - 1);

quicksort(arr, position + 1, high);

}

}

void print(int arr[], int size) {

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

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

}

printf("\n");

}

int main() {

int n;

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

scanf("%d", &n);

int data[n];

printf("enter the elements of the array:\n");

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

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

}

printf("Unsorted Array:\n");

print(data, n);

quicksort(data, 0, n - 1);

printf("Sorted Array in Ascending Order:\n");

print(data, n);

return 0;

}

