#include <iostream>

#include <omp.h>

using namespace std;

// Function to swap two integers

void swap(int &a, int &b) {

int temp = a;

a = b;

b = temp;

}

// Parallel Bubble Sort (Odd-Even Transposition Sort)

void bubble(int \*a, int n) {

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

int first = i % 2;

#pragma omp parallel for shared(a, first)

for (int j = first; j < n - 1; j += 2) {

if (a[j] > a[j + 1]) {

swap(a[j], a[j + 1]);

}

}

}

}

int main() {

int \*a, n;

cout << "\nEnter total number of elements: ";

cin >> n;

a = new int[n];

cout << "\nEnter elements:\n";

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

cin >> a[i];

}

bubble(a, n);

cout << "\nSorted array is:\n";

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

cout << a[i] << endl;

}

delete[] a; // Free the allocated memory

return 0;

}