#include <iostream>

//#include <algorithm>

using namespace std;

template <typename T>

void Bubble\_sort(T arr[], int l)

{

for (int pr = 0; pr < l; pr++)

{

for (int index = l - 1; index > 0; index--)

{

if (arr[index - 1] > arr[index])

{

//swap(arr[index], arr[index - 1]);

T temp = arr[index];

arr[index] = arr[index - 1];

arr[index - 1] = temp;

}

}

}

for (int i = 0; i < l; i++) cout << arr[i] << " ";

cout << "\n";

}

template <typename T>

void Insertion\_sort(T arr[], int l)

{

for (int pr = 0; pr < l; pr++)

{

int val = arr[pr];

int index;

for (index = pr - 1; index >= 0 && arr[index] > val; index--) arr[index + 1] = arr[index]; // сдвиг эл. вправо

arr[index + 1] = val;// нашли место и вставили

}

for (int i = 0; i < l; i++) cout << arr[i] << " ";

cout << "\n";

}

template <typename T>

void Selection\_sort(T arr[], int l)

{

for (int pr = 0; pr < l; pr++)

{

int min\_i = pr;

int min\_v = arr[pr];

for (int j = pr + 1; j < l; j++) // поиск мин. эл.

{

if (arr[j] < min\_v)

{

min\_i = j;

min\_v = arr[j];

}

}

arr[min\_i] = arr[pr];

arr[pr] = min\_v;

}

for (int i = 0; i < l; i++) cout << arr[i] << " ";

cout << "\n";

}

int main()

{

srand(time(0));

const int s = 10;

int ar[s] = {};

for (int i = 0; i < s; i++) ar[i] = rand() % 101;

cout << " Array of numbers before sorting: ";

for (int i = 0; i < s; i++) cout << ar[i] << " ";

cout << "\n\n Bubble sort: ";

Bubble\_sort(ar, s);

cout << "\n Insertion sort: ";

Insertion\_sort(ar, s);

cout << "\n Selection sort: ";

Selection\_sort(ar, s);

}