#include <iostream>

#include <cstdlib>

#include <ctime>

#include <omp.h>

using namespace std;

const int VECTOR\_SIZE = 100;

int main()

{

    // initialize random seed

    srand(time(NULL));

    // allocate memory for the vectors

    int\* vector1 = new int[VECTOR\_SIZE];

    int\* vector2 = new int[VECTOR\_SIZE];

    int\* result = new int[VECTOR\_SIZE];

    // fill the vectors with random numbers

    #pragma omp parallel for

    for (int i = 0; i < VECTOR\_SIZE; i++)

    {

        vector1[i] = rand() % 10000;

        vector2[i] = rand() % 10000;

    }

    // add the vectors in parallel using OpenMP

    #pragma omp parallel for

    for (int i = 0; i < VECTOR\_SIZE; i++)

    {

        result[i] = vector1[i] + vector2[i];

    }

    // print the first and second vectors and their sum

    cout << "Vector 1: \n[";

    for (int i = 0; i < VECTOR\_SIZE; i++)

    {

        cout << vector1[i];

        if (i != VECTOR\_SIZE - 1)

        {

            cout << ", ";

        }

    }

    cout << "]" << endl;

    cout << "Vector 2:\n [";

    for (int i = 0; i < VECTOR\_SIZE; i++)

    {

        cout << vector2[i];

        if (i != VECTOR\_SIZE - 1)

        {

            cout << ", ";

        }

    }

    cout << "]" << endl;

    cout << "Result: \n[";

    for (int i = 0; i < VECTOR\_SIZE; i++)

    {

        cout << result[i];

        if (i != VECTOR\_SIZE - 1)

        {

            cout << ", ";

        }

    }

    cout << "]" << endl;

    // free the allocated memory

    delete[] vector1;

    delete[] vector2;

    delete[] result;

    return 0;

}

Output:

Vector 1:

[8286, 2967, 477, 7121, 3029, 883, 687, 1972, 6196, 8760, 7858, 1905, 6561, 6516, 2902, 4017, 2664, 3806, 2065, 6051, 3638, 9723, 8619, 1033, 1777, 3001, 2273, 249, 8782, 9287, 134, 2685, 361, 155, 3230, 659, 4065, 9643, 8433, 846, 378, 3156, 3182, 3012, 8745, 2199, 4517, 9854, 3019, 9766, 1371, 9467, 2286, 9436, 5194, 3373, 1734, 4482, 5967, 7179, 2298, 698, 8250, 4029, 7396, 5400, 2626, 691, 3093, 2900, 2702, 1966, 9631, 2778, 285, 2196, 4248, 8010, 9503, 3409, 5374, 8665, 1865, 9473, 7469, 2685, 6261, 4135, 1275, 9925, 4527, 1674, 3453, 7903, 7946, 5890, 6719, 3407, 3769, 655]

Vector 2:

[5385, 29, 1459, 2065, 1790, 4373, 8370, 2928, 2418, 8440, 99, 4022, 9551, 919, 837, 2740, 676, 8389, 952, 562, 9027, 5738, 7440, 6359, 9028, 2817, 2934, 7026, 5024, 2426, 9430, 5589, 1527, 5785, 5490, 5108, 6923, 1478, 7533, 6058, 5122, 187, 1393, 6725, 5320, 2457, 6266, 2165, 138, 8227, 8297, 5569, 813, 4481, 6114, 6481, 7989, 7438, 3679, 9285, 8942, 3931, 4010, 4077, 1655, 4554, 854, 9951, 5137, 7699, 2743, 7461, 628, 2594, 85, 92, 6267, 5367, 814, 3222, 8627, 1973, 8433, 3784, 1744, 2452, 2467, 6348, 9608, 9280, 862, 3744, 614, 2583, 5853, 9638, 2713, 2222, 4561, 739]

Result:

[13671, 2996, 1936, 9186, 4819, 5256, 9057, 4900, 8614, 17200, 7957, 5927, 16112, 7435, 3739, 6757, 3340, 12195, 3017, 6613, 12665, 15461, 16059, 7392, 10805, 5818, 5207, 7275, 13806, 11713, 9564, 8274, 1888, 5940, 8720, 5767, 10988, 11121, 15966, 6904, 5500, 3343, 4575, 9737, 14065, 4656, 10783, 12019, 3157, 17993, 9668, 15036, 3099, 13917, 11308, 9854, 9723, 11920, 9646, 16464, 11240, 4629, 12260, 8106, 9051, 9954, 3480, 10642, 8230, 10599, 5445, 9427, 10259, 5372, 370, 2288, 10515, 13377, 10317, 6631, 14001, 10638, 10298, 13257, 9213, 5137, 8728, 10483, 10883, 19205, 5389, 5418, 4067, 10486, 13799, 15528, 9432, 5629, 8330, 1394]