C++ Assignment

1. Given an array

   arr = {3,2,6,1,4,7,8,5,9,10}

   write a function which returns an array where each data value is divided by max value of that array. Result of the given array is as shown.

   arr = {0.3, 0.2, …, 1.0}

2. Create two 2 dimensional dynamic arrays of size 4x4 where each array element should be randomly generated value in the interval (0, 20]. After creating arrays calculate the Euclidean distance (ED) between corresponding array elements.

   arr1 = {{1, 5, 2, 6},

   {3,12,7, 19},

   {20, 3, 7, 14},

   {8, 4, 6, 18}} // total elements = 16

   Similarly create arr2. Then calculate

   ED = sqrt(x^2 – y^2) // x and y represent elements of two matrices correspondingly.

3. From the above problem take any matrix and do max-pooling with windows size of 2x2 with stride of 1.
4. Create a class such that when the user instantiates it with certain “data type” and “size (N)” it should allocate memory. Then write two member functions such that one fills the allocated memory with values 0 through N and other function returning it. The member function which is used to fill the memory should not be visible to the user. Print the values of the memory to the console.
5. Write a program which optimally pushes 10 integer values into dynamic memory (std::vector).