Homework 7

The goal of this homework is get you familiar with C++ Templates.

You need to use C++ template to implement a Queue class using C++ vectors so that your queue class can store data of any type. Since you use C++ vectors, you will not need to specify queue sizes. Your class should provide at least the following functions:

(1) top(), which returns the top of the queue;

(2) pop(), which returns the top of the queue and also remove it from the queue;

(3) push(), which inserts an element into the end of the queue;

(4) empty(), which returns whether the queue is empty.

Your main function needs to do the following:

(1) Instantiate a queue of integers; push integers 1, 2, 3, 4, 5, and 6 into the queue one by one, then pop all of them out and print out each number that you pop (which will be in the order of 1, 2, 3, 4, 5, and 6.

(2) Instantiate a queue of doubles; push doubles 0.1, 0.2, 0.3, 0.4, 0.5, and 0.6 into the queue one by one, then pop all of them out and print out each number that you pop (which will be in the order of 0.1, 0.2, 0.3, 0.4, 0.5, and 0.6.

Due: February 5th, 11:59PM, 2019.

Turn in one file via handin: the zip file of your whole NetBean directory. The name of your file should be: LastName_FirstName.zip. For example, if your name is John Smith, you should turn in one files: Smith_John.zip.