CSc 21200 – 2019 Spring
Exam 2
April 4th, 2019

Name your header file as LastName(3 to 5 letters)_FirstNameInitial_E2_Q[1,2,3].h
Note: You can only use iostream, cassert, cmath, cstdio, cstdlib, and the given files.

1. Write a function that take an **unsorted** linked list and return a linked list that is the "histogram" of the input linked list. You should only have to go through the input once.
   `Input: H→5→5→8→4→4→5→5→1→6→3→T`
   `Output: H→(1/1)→(3/1)→(4/2)→(5/4)→(6/1)→(8/1)→T`
   Note: (X/Y) – X is the value and Y is the count.

2. Write a class using two stacks of your stack class to simulate a priority queue and their basic functions. Note: Assume lower values have a higher priority. All but one of the basic functions should be constant time. Bonus points will be given if ALL basic functions are constant time.

3. Write a recursive function that reverse a stack. Note: You can only use the basic functions of the stack to manipulate it and no additional stack.