Lab 1

Purpose: To work with stacks and queues

1. Using the StackofStrings class that I provided you, create a class called ArrayStack that is a generic class. Create a main program to read in one input file and print out the file in reverse order by pushing each item on the stack and popping each item off to print it. The two input files are: tinyTale.txt and numbers.txt. Rules: You cannot inherit the StackofStrings class.
2. Using your new ArrayStack, create a new class called RArrayStack. To do this, you need
   a) remove the capacity parameter from the constructor and create the array with 8 as the starting size
   b) create a new method called resize that takes a parameter (capacity)
   c) change push() to check for length of array. If it is at the limit then call resize to increase it to twice the size

   Use the same main program from 1 and the two input files to test out your program.
   RULE: You cannot use ArrayList – you must use a primitive Java arrays.
   RULE: I know the book has code for this. Do NOT use that code. I want you to learn to do this on your own. I should have given you lots of hints today in class to help with this.

3. Without running the program, what happens if you run StackofStringsApp with "to be or not to be that – is - - the question – whether tis nobler - - -"? Show how you came up with the answer (show your work). Write this on paper by hand and hand in your paper to the TAs. (or if you have an aversion to paper – draw it on the computer and place in brightspace)

Due: Friday, 9/13 at 11:30pm

Note: work with a lab partner – each of you will submit your answers to brighspace in the lab1 folder. In each of your files that you submit, put lab partner: <name> at the top of the file (along with your name of course).

Submission You will submit the source files and screen shots of output for 1 and 2 and a separate paper with the answer to 3 (remember to show your work).

Rubric:

1. – 4 pts (2 pts for changed source, 2 pts for showing proper output)
2. – 4 pts (2 pts for changed source, 2 pts for showing proper output)
3. – 1.5 pts (1 pt for correct answer and .5 pt for showing your work)
4. - .5 pts for lab attendance