Lab Assignment 28 (Writing your own Data Structures)

**ATTENTION: You will be creating your own imaginary items to make classes from, and yours should be different from your classmates’ work. I will not accept code that is using the same names & concepts as someone else’s program.**

# Part 1:

1. Create a Java project named **Lab28A**.
2. Create a secondary class for something that you will instantiate objects from. We have made Employee, Student, Customer, Gadget, etc. objects in the past. Yours needs to be something new and different.

It should have at least 3 instance variables to describe the object, with one of them being a key value like ID, name, or something similar.

1. As you did in Chapter 24 create a MyQueueNode class and MyQueue class to make a queue of objects from scratch (not using any premade Java data structures).
2. Create a text file with data for 10 objects of the class you created in step #2.
3. Read the data in and create an array of these objects to start with. (They should not be in a sorted order.) Print the array (with a label).
4. Write a function to sort this array and call it in the main class after you fill the array with the objects. Add comments to the function to state which type of sort you are using.
5. After the array has been sorted, add the objects to your queue (using the enqueue method).
6. Print your queue.
7. Comment each section of your code, so that I can see where you are doing each of these steps.

**Note:** You will need to submit the Lab28A input text file along with your code, so that I can test it.

# Part 2:

1. Create a Java project named **Lab28B**.
2. Create a secondary class for something that you will instantiate objects from. It needs to be something new and different. (Also different from the one above.)

It should have at least 3 instance variables to describe the object, with one of them being a key value like ID, name, or something similar.

1. As you did in Chapter 24 create a MyStackNode class and MyStack class to make a stack of objects from scratch (not using any premade Java data structures).
2. Create a text file with data for 10 objects of the class you created in step #2.
3. Add the objects to your stack (using the push method).
4. Use the pop method to remove each object from the stack in the correct order and print them as you do.
5. Comment your code as you did above

**Note:** You will need to submit the Lab28B input text file along with your code, so that I can test it.