**CSE1322 – Java Lab 5B – Stacks and Queues**

*This lab may contain intentional minor errors; they should be reasonably easy to find and exist so that you must think as you go through the lab.  Like many things in life, "trust but verify."  Ideas will always be correct; only minor code and syntax may be incorrect.*

**Lab 5B: Stacks and Queues**

**Objectives**

To write a program using a stack and a program using a queue.

**Problem Statement**

Code a class encapsulating a stack of clothes using an array. A clothing item has the following attributes: names, color, and whether it can be washed at high temperature. Limit your stack to 20 clothing items. In addition to creating your push, pop, and peek methods; create two additional methods: a method that return all of the clothing items of a given color; a method that returns how many clothing items in the stack can be washed at high temperature. Write a program to test your stack with all these methods.

Code a class encapsulating a queue of foods using a circular array. A food has the following attributes: name, the number of calories per serving and the number of servings per container. Limit your queue to 20 food items. In addition to writing the enqueue, dequeue, and peek methods, you will write two more methods: a method that returns the average calories per serving of all the foods in the queue; a method that returns the food items with the highest total calories (ie: number of calories per serving \* servings per container). Write a program to test your queue with all these methods.

**What to Turn In**

Follow submission guidelines on this page: <http://ccse.kennesaw.edu/fye/Submission%20Guidelines.php>