Assignment 6

Topics: Exception Handling, and Collections

1. Read about Collections at: *http://docs.oracle.com/javase/tutorial/collections/index.html*

2. A queue is a particular kind of collection. In a queue, the single items are kept in order and the main operations are the addition of items to the rear terminal position and the removal of items from the front terminal position. Fundamentally, a queue is a First-In-First-Out (FIFO) data structure because the first element added to the queue will be the first one to be removed. This also means that once an element is added, all elements that were added before have to be removed before the new element can be accessed again (see Figure 1).
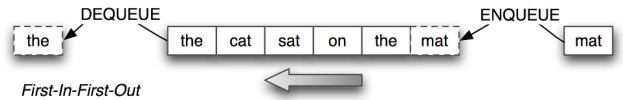

Figure 1: example of a queue with six items of type String

Your task is to design and implement a queue class *MyStringQueue* that holds elements of type *String*. Your queue must have a limited space i.e. it may contain only up to C_MAX_SIZE_QUEUE elements at any given time.
A queue is characterized by three main operations:
    enqueue: to add new items to the end of the queue
    dequeue: to retrieve and remove the first element on the queue
    peek: like dequeue pop but without any element removal

3. Deal with overflow cases and illegal *queue/dequeue* in task 2 by creating your own exceptions