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CS 202 Lab Section 1103

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Project 9 Documentation

Project 9 required that students implement Array-based and Node-based queues, with similar-purposed functions which differ in code implementation but have the same name. Queues have a FIFO data structure, and it is helpful for me to think of them as waiting lines of people i.e. new elements are inserted at the back and elements are removed from the front. Each queue variant has a front and a back, helpful for locating elements as index positions (Array-based) or pointers (Node-based).

My design was similar in a way to a node-based/array-based list, but implemented the structure of FIFO. For example, this meant instead of having just a m\_head like a forward-based list, it had m\_front and m\_back pointers or index positions. These positions were extremely helpful in determining where to pop or push elements.

This project was not as difficult as expected, because the last project first introducing us to Node and Array lists prepared us so well for this one. The functions had to be altered a bit in order to fit the data structure, like adding in a back position for each variant. From then on, I only had to consider simple errors, such as how the serialize method should print out a queue (front to back), and just creating the test driver itself which would most efficiently display my functions. The project was insightful, and helpful to understanding Queues.