4-1 Programming Journal

This week we covered stacks and queues, which are both abstract data types that can be ordered. Stacks are LIFO, last in first out, and queues are FIFO, or first in first out. When I think about these two data types, especially queues, the idea of a restaurant inventory comes to mind. One of my first jobs was at McDonald’s, and as a restaurant, they run on first in first out. The idea is that the freshest produce, meat, and other supplies were being used first. Queues represent that, and first in first out idea, in which when an item is inserted at the end of the queue, one is removed from the beginning. Stacks are relatively the opposite, where items are added to the front, and the “old” front is removed. In my thought process, I feel that a queue ADT can be used for an inventory system, if the items are organized by dates and/or times received. A stack on the other hand, may be used for an inventory system where prices are subject to change quickly – where a business could profit more on the same item because it was more recently produced than an older one.

One may decide to combine a sorting algorithm with another algorithm to obtain a certain result. What comes to my mind is the lab, where we sorted a list of “bids” that were organized by title. I feel like a search algorithm may also aid in finding a matching item quicker if it was iterating through a list that was somewhat organized. Although, maybe that is inexperience talking and a machine doesn’t need to have an alphabetical list to find a match like a human would like to have, but nevertheless I feel like the pair would be useful together.