

WEEK 04

1. PREPARATION FOR ASSIGNMENT

If, and *only if* you can truthfully assert the truthfulness of each comprehension and memory self-check statement below are you ready to start the tasks for the week.

1.1. Reading Comprehension Self-Check.

- I know and understand the difference between an array, a vector, a stack, and a queue.
- I know and understand what is meant by push and pop in this context and how it differs from their use with a stack.
- I understand the difference between an accessor and a mutator.
- I understand how a single character can be used as an operator for both an accessor and a mutator.
- I know what the acronym **FIFO** stands for and why a queue is **FIFO**.
- I understand why only the front value in a stack is removable and why only the back value is set-able.
- I understand how a queue could be used to represent simple time relationships between pieces of data.

1.2. **Memory Self-Check.** I can, and have, explained to someone who is not a student in the Computer Science and Electrical Engineering, Computer Information Technology, or Mathematics departments in a way that they understand what a queue is and why it is important.

2. WEEK 02 TEAM TASKS

Note: All review tasks come from the book.

2.1. Review Task 03.4.

2.2. Review Task 03.8.

2.3. **Creation Tasks.** Write code matching the UML class diagrams on page 96 of the book so that it passes the assertions in the main.cpp for this collection.

2.4. **Pondering Task.** What different kinds of uses can you find or brainstorm for this data structure?

Date: January 6, 2020.

2.5. **Pondering Task.** What changes to the API for this data structure can you brainstorm that might make it easier to use? What would be the design for one of your changes?

2.6. **Pondering Task.** Brainstorm some coding tasks/situations or types of data where using this data structure would make organizing, accessing, inserting, or updating the data difficult.

2.7. **Pondering Task.** Brainstorm about and record why there are differences between the API for this data structure and the API for this data structure in another language of your choice. Consider the strengths, weaknesses, similarities, and differences between these API's for the data structure.