

CST 370
Spring 2019
Midterm (Coding)

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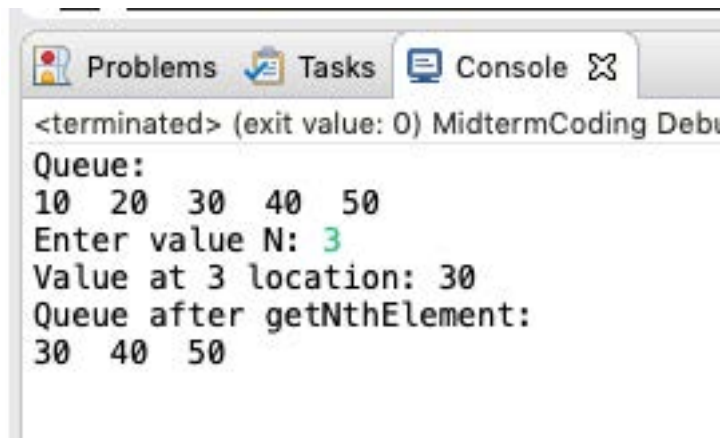
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- Do not start until told to do so.
- Use your time wisely—make sure to answer the questions you know first.
- **Total points = 50**
- **Read the questions carefully.**

Submission instruction: zip all the files, including the files provided to you (with any updates you may have made), into a single file “midterm-coding-lastname” and submit to the Midterm coding area on iLearn.

Given the Queue.h and Queue.cpp files:

- a. Add a new method GetNthQueue(N) in “Queue.cpp” that retrieves the Nth element (from the front) of the queue (if valid). The first (N-1)th elements in the queue should be removed after the operation. Make changes in “Queue.h” if necessary
- b. Write a separate test program “test_nth_queue” that reads a number (N) from user and utilizes the “GetNthQueue(N)” to retrieve the Nth element on the queue, print out the retrieved element, and also print out the contents of the queue after that. Examples of tests can be as follows:
 - Declare queue q1
 - Enqueue integers 10, 20, 30, 40 and 50 in order into q1 (use a loop)
 - Get input N (let's say N=3)
 - Retrieve 3rd element from q1= 30
 - Contents of q1 becomes: 30, 40, 50



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Queue:
10 20 30 40 50
Enter value N: 3
Value at 3 location: 30
Queue after getNthElement:
30 40 50
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