

# CSC 016 – Class Assignment – Fix the Queue

Fix the bugs in the queue class we worked on in the lab and test that it works correctly.

1. Fix the bugs in the queue functions/methods
  - What to fix
    - i. The enqueue method should use all available space in the underlying array
    - ii. The display method should only print valid elements
    - iii. The dequeue method should only remove valid values
    - iv. The Front/enqueue/dequeue methods error handling leaves a lot to be desired. They should behave according to the guidelines of error handling we discussed in class. Modify them so they return true/false on success/error.
  - Notes
    - i. Look closely at the interaction between the variables inside the class methods (myFront/myBack/newBack/QUEUE\_CAPACITY etc.).
    - ii. Add as many debug printouts as you need. The more the merrier.
    - iii. Be patient and thorough as you debug the code
    - iv. Make sure you understand how every line of code effects the values of the variables and the state of the Queue
    - v. Fix the bug with as little code changes as possible. It is possible to fix the problems with very few code modifications.
    - vi. Explain in your code using C/C++ comments what is wrong with the queue (what are the bugs that you are fixing)
2. Write a driver program to test the fixes that you introduced and to show that the queue is bug free

## Submission instructions

1. Document your code thoroughly inside the source file/s using C++ style comments (// and/or /\* \*/)
2. Zip and upload the following files to blackboard:

- a. Source files/s
- b. Instructions on how to run your code
- c. Program output examples