# CS 4412 5512 Module 5 Project 5

# Priority Queue

Place your results in a zipped project folder named CS4412Pj4<yourLastName>.zip (or 5512) and submit through moodle. It should contain a .doc document containing the written answers to several questions.

Tasks:

1. Implement a **non-recursive C++** PriorityQueue using **an array** as detailed in the module 5 notes 5.0 to 5.3. Note that you are effectively implementing a queue on top of a tree on top of an array ( ☺ ). ***You must use the provided algorithm, not another priotrity queue algorithm.***
   1. Generate a test environment allowing the grader to test your code and insure it is correctly implementing a priority queue on top of an array.
   2. **Note: I will only accept a solution using an array and the algorithm described in the notes – not a list or other data structure! Not a solution using some built in gadget. The only language provided data structure you can use is an array.**
2. Make your priority queue work with generic variables.
3. Analyze Big O notation for your code providing most likely case and worse case.

The ExtractMin operation is O(logN) and the Insert operation is O(1) in the best case and O(logN) in the worst case.

Grading Rubric

1. 80
2. 10
3. 10
4. Style: -10 points. Style is critical. Each method (function), class, and program requires a block comment with your name and a really good sentence explaining the goal or purpose of the program, class, or method.