**A09**

**Due Date:** Thursday, June 13   
**Files to be submitted:** [PQ.java](http://cs.smu.ca/~myoung/csci2341/Assignments/A09/PQ.java), Report.txt   
**Program file:** [A09.java](http://cs.smu.ca/~myoung/csci2341/Assignments/A09/A09.java)   
**Sample output:** [SampleOutput.html](http://cs.smu.ca/~myoung/csci2341/Assignments/A09/SampleOutput.html)

[SUBMIT](http://cs.smu.ca/~myoung/csci2341/protected/getSubmission.cgi?09)   /   [Check](http://cs.smu.ca/~myoung/csci2341/protected/viewasgn.cgi?A09)

**Revised PQ Class (Operation Counts)**

**Summary**

Revise the PQ class I have provided by adding commands to count operations.

**Note:** I have included an instance variable for the operation count, and also three methods for getting and resetting the operation count. All *you* need to do is add the commands to increment the operation counter at the appropriate times.

Test your operation counting code by running the program I have provided. It will print a table showing how many operations were required to insert into/remove from a PQ of a given size.

Create a report (text only!) showing the output the program produced for your revised PQ class; formulas for the number of operations for adding to/removing from a PQ of size N; and the orders of magnitude for those formulas. (Note that you may need to give two formulas for removing from the PQ, since even and odd numbers may do different amounts of work.)

**Details**

All you need to do is add a bunch of commands like this:

++opCount; // comparison: list[small].compareTo[other] < 0

**Do include the operation you're counting in a comment on the line.** Count every pertinent operation.

Note that, as I pointed out in class, there's some leeway in which operations you count. You just need to count operations in a way that reflects the amount of work being done. I will allow some variablility in what counts as significant, so there are multiple correct ways of doing it. I've provided two examples in the Sample Output of counts you might get. Your results don't necessarily have to match those results, but they should be similar.

**Notes**

You don't need to worry about how A09.java works. Just add the operation counting code.

You only need to count operations for adding and removing elements. (No need to add operation counts for isEmpty nor for the getOpCount, resetOpCount and getAndResetOpCount methods.)

**Grading Outline**

* 40% -- Your operation counts are reasonable
* 40% -- Your report provides suitable formulas and orders of magnitude
* 20% -- Submitted material meets the standard requirements as described in the [rules for submissions](http://cs.smu.ca/~myoung/csci2341/Rules.html) and the [style rules](http://cs.smu.ca/~myoung/csci2341/Style.html).

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