

### Grading Guidelines for CS 3 Homework 3

- Grade the homework out of 50 points.

#### Problem 1. (20 pts)

- Some people placed the cout statements inside your bfs function, but this doesn't make sense to do, and the homework specifically states that you're supposed to output the farthest word from the information you got from bfs.
- Some people had a memory leak after getNeighbors they use getNeighbors...make sure you delete that list each time through the while loop

#### Problem 2. (20 pts)

- Some people implemented the queue with only a back and front pointer when the assignment specifically said to implement only the front pointer.
- QUADRATIC does not equal EXPONENTIAL they are two different things...  
QUADRATIC is  $O(n^2)$   
EXPONENTIAL is  $O(k^n)$  which is much much worse

#### Problem 3. (10 pts)

- Remember every recursive function must have a base case, and if the function has a return value other than void then something must be returned during that base case
- C++ is not Java! In C++ you must initialize your own variables. You can't assume that a pointer is set to NULL, an integer is set to 0, or a string is set to the empty string!
- Global variables are typically very bad, and thus try to avoid them...especially in recursive functions. Many people implemented this recursive function using a global variable, and it may appear to work for one run of the function but if you'd run your function a second time, you've never cleared out the global variable and thus you're gonna get your previous result concatenated with your new result!