

HW 8

- the measure of progress is a quantity
 - it should be related to the exit condition the termination argument is to explain why each iteration makes progress towards the exit condition
 - exit condition: end when a condition is satisfied
 - measure of progress: a quantity

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- making progress: the quantity is increased/decreased by each loop iteration
- the end is reached: each iteration changes the measure of progress in a direction towards the exit condition, so the exit condition is eventually reached



#1 – coloring regions

- modeling as a graph problem is a great strategy, but the point here is to apply the iterative algorithm development process
 - try starting with the problem's input/output as stated
 - also OK to start with graph, but need to develop the iterative algorithm don't just say "2-coloring"
- building the graph is part of the setup and producing desired output is part of the wrapup – and both need to be accounted for in the running time
- #3 "swim in a spiral" is not sufficient as an algorithm
 - break the main steps into two pieces
 - swim to make progress, not worrying about the invariant what direction do you swim in?
 - swim to fix the invariant, not worrying about making progress how do you do this?

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• priority #1 –

- the score from the resubmit for #1 will be taken as the score for #1 and #2 (assuming improvement)
- encouraged to resubmit #2 as well for practice, and to get the +1 for a resubmit with substantive improvements for that problem

68

- submit any missing the first time for credit
- priority #3
 - #3 isn't covered by priority #1 redo it separately

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