Lab 5 (12 Feb 2018)

Problem 1 [Graduating Quickly]: Write a linear time program to compute the minimum number of semesters required to complete a university curriculum. The input to your program is a DAG, where the vertices represent the different courses and a directed from vertex u to vertex v means that course u is a pre-requisite for course v. (Assume that you can register for any number of courses in a given semester).

Problem 2: [Majority Wins]: Write a O(nlogn) program to find if an array A (of size n) has a *majority element* in A. A majority element is an element that occurs more than n/2 times in A. You **can not** order (compare or sort) elements of A, you can only check if two elements are equal. Can you find a linear time program to solve this problem?