

CS 461 – ARTIFICIAL INTELLIGENCE

HOMEWORK #4 (5%)

Assigned: Mon Apr 10, 2017

Due: Mon Apr 24, 2017, **14:00**

You can do this homework in groups of 5 or less. Do not forget to indicate the names of students submitting the homework (i.e., at most 5 names). Submit your homework (just a single submission for each group) to our TAs.

PROBLEM

In this homework you are expected to implement a topological sort procedure in order to obtain a class-precedence list for a given class hierarchy.

Since you are already busy with your term project, I hope this homework will not make great demands on your time. Thus, I allow you to reuse any code provided that you clearly state where you found it and how you used it and/or adopted it to your needs for this homework. In any case, the code component will be worth 2%.

As you know, Winston explains, in considerable detail, the workings of topological sorting. You can just go ahead and code his approach – that'll be very instructive – or you can use, for example, the routine given by Sedgewick & Wayne at <http://algs4.cs.princeton.edu/42digraph/> (I am sure you can find several others but the idea is to understand how they work and how you can employ them. Using them without real understanding would definitely cause a problem if your TAs ask you for a demo.)

You should test your program at a minimum with the following figures from Winston to make sure that it reports class-precedence lists correctly:

- Figure 9.2 (0.5%)
- Figure 9.4 (0.5%)
- Figure 9.5 (1%) [do it both for Crazy (0.5%) and Jacque (0.5%)]
- Figure 9.6 (1%) [do it both for Crazy (0.5%) and Jacque (0.5%)]

The usual late submission policy applies.