Basic Algorithms, Assignment 5

Due, Thursday, Oct 18

1. Page 107. Problem 4.

2. Modify the topological ordering algorithm of §3.6, or the version given in class, so that there will be a stacks (or queues, you decide) `BADCYCLE` and `GOODORDER` and a Boolean Variable `NOPROBLEMO`. The input to your algorithm will be a directed graph with the adjacency list representation. When the algorithm is over there are two cases. If there is a topological order then `NOPROBLEMO` = **true** and `GOODORDER` gives such an order. If there is no topological order then `NOPROBLEMO` = **false** and `BADCYCLE` gives a directed cycle. (When `NOPROBLEMO` = **true** it doesn't matter what `BADCYCLE` is and when `NOPROBLEMO` = **false** it doesn't matter what `GOODORDER` is.)

   Give your algorithm in detailed pseudocode with copious commentary

Why did you come to Casablance anyway, Rick?
        I came for the waters.
Waters, what waters? Casablanca is in the desert.
        I was misinformed
Claude Rains and Humphrey Bogart in *Casablanca*