CSE 2320 Lab Assignment 4

Due August 6, 2007

Goals:

Understanding of the use of depth-first search to determine a topological sort for a directed graph.

Requirements:

1. Write a Java program to determine a longest path in a positively weighted, directed acyclic graph. If the input graph is not acyclic, then you should provide an error message. The first line of the input will be the number of vertices V. Each of the remaining lines will provide the tail, head, and distance for one edge. Vertices will be numbered in the range 0 . . . V-1. The last line of the input will be `-1 -1 -1`. The only required output is a list of vertices in a longest path and its length. You may output other tables and tracing from the depth-first search.

2. Email your program, as attachments, to `roy@cse.uta.edu` by 12:45 p.m. on August 6, 2007.

Getting Started:

1. Your program should run in $\Theta(V + E)$ time.

2. Java source files, from Sedgewick, for ordinary depth-first search on an unweighted, directed graph are available on the course web page.