

CSE 5311 Lab Assignment 2

Due April 8, 2004

Goal:

Review of minimum spanning trees.

Requirements:

1. Write (and test) a program that verifies an alleged minimum spanning tree. Your program must compile and execute on OMEGA. There should be a comment near the beginning of your code that indicates how to compile on OMEGA. The input should be read from `stdin/cin`.
 - a. The first line of the input is a comment describing the test case.
 - b. The second line of the input is the number of vertices (V) and number of edges (E). $E \geq V - 1$.
 - c. Each of the remaining lines of the input will describe one edge, $u v w$, where u and v are vertex numbers in the range $0 \dots V - 1$ and w is a positive integer for the weight. Parallel edges and self-loops do not occur. The graph is not necessarily connected.
 - d. The first $V - 1$ edges are the alleged minimum spanning tree. No other ordering should be expected.

Your program should either output "MST verified" or a suitable message if the alleged MST fails the tests.

2. Email your code (as attachments) to `yxb4544@omega.uta.edu` before 5:15 pm on April 8. The subject should include your name as recorded by the University. You should also attach an input file for each of the failure messages that your program can produce. The first line of each file should indicate what error is detected.

Getting Started:

1. You may borrow MST code from the class web page or other places (besides each other), but be sure to give appropriate credit in your comments.
2. Any of the four MST methods (Warshall-based, Prim, Kruskal, Boruvka) may be modified to do this lab.