CS 6340 – Fall 2009 – Problem Set 7 **Name**_____

Assigned: October 15, 2009
Due: October 20, 2009

At the beginning of class on the due date, submit your neatly presented solution with this page stapled to the front (50 pts). As with the previous assignments, you are to do this assignment individually.

Part 1

Use the test suite for **tritype** you created for Part 1 of Problem Set 6. Call this TS1.

a. List the conditions that you used to measure *Multiple Condition Coverge* for **tritype.**
b. Show which test cases in TS1 cover the conditions by listing the test case next to the conditions.
c. For each set of multiple conditions in the program, create a set of MC/DC conditions.
d. Show which test cases in TS1 cover the MC/DC conditions.
e. Create test cases for the uncovered MC/DC conditions or indicate that the condition is infeasible. Add these new test cases to TS1 to get TS2.
f. There are two bugs in **tritype.**
    - Did TS1 find them?
    - Did TS2 find them? If not, would they have been found if you had used Multiple Condition Coverage?

Part 2

The **tritype** program has two bugs in it:

a. The following condition need change from
    i. if ((i <= 0) || (j <= 0) || (k < 0)) to
    ii. if ((i <= 0) || (j <= 0) || (k <= 0))
b. The following condition need change from
    i. if (i+j <= k || j+k <= i || i+k < j) to
    ii. if (i+j <= k || j+k <= i || i+k <= j)

Call the version of **tritype** that has these statements changed **tritype'**

Using the control-flow graph you created in Problem Set 6, show how to use the DejaVu algorithm to find the "dangerous edges" and the test cases from TS2 that need to be rerun on **tritype'.** Show all steps in the application of the algorithm.