**Lab 6 Instructions**

In today’s lab you will a constraint graph for a CSP with unary and binary constraints.

The input will be

1. The total number of variables, N\_V
2. N\_V variable names – assume that they are single, capital letters like A, B, … Z
3. The domain of each variable – assume that they are positive integers and the domain is finite
4. Total number of unary constraints, N\_UC
5. N\_UC constraints written as <Variable Name> Space <Relational Operator> Space <Constant>

e.g. A < 5

1. Total number of binary constraints, N\_BC
2. N\_BC constraints written as

<Variable Name 1> Space <Relational Operator> Space <Variable Name 2> Space <Arithmetic Operator> Space <Constant>

e.g. X > Y + 5

You can give your inputs at run time or type them in a text file and read the text file as an input.

Your program should

1. Read the unary constraints and adjust the domain of the corresponding variable and output the same
2. Read the binary constraints
3. Draw a constraint graph with each variable as a node and every binary constraint as an edge between the nodes
4. Implement the logic of adjusting the domains based on the binary constraints. You do not have to implement the complete Arc-Consistency algorithm. Just examine the domain of the variable in the l.h.s. and adjust the domain of the variable on the r.h.s. so that the binary constraint is satisfied (if possible).
5. Redraw the constraint graph with the adjusted domains.

**Note:** As usual, you should show your work, even if it is partial, during the lab since each lab is being graded.

**Caution:** There are many CSP solvers available on the net. Please don’t show their output to me because that would not carry any credit.