HW 6 – Unification
CS 421 – Fall 2012
Revision 1.0

Assigned Tuesday, October 16, 2012
Due Tuesday, October 23, 2012, 11:59 pm
Extension 48 hours (20% penalty)

1 Change Log

1.0 Initial Release.

2 Turn-In Procedure

Answer the problem below, save your work as a PDF (either scanned if handwritten or converted from a program), and hand in the PDF. Your file should be named `hw6.pdf`.

3 Objectives and Background

The purpose of this HW is to test your understanding of

- How to unify a system of equations

Another purpose of HW6 is to provide you with experience answering non-programming written questions of the kind you may experience on the second midterm and final.

4 Problems

1. (21 points) Use the unification algorithm described in class and in MP6 to give a most general unifier for the following set of equations (unification problem). Capital letters (A, B, C, D, E) denote variables of unification. The lower-case letters (f, l, n, p) are constants or term constructors. (f and p have arity 2 - i.e., take 2 arguments, l has arity 1, and n has arity 0 - i.e. it is a constant.) Show all your work by listing the operations performed in each step of the unification and the result of that step.

$$\{(f(A, f(B, B)) = f(p(C, D), f(p(E, F), p(l(C), l(D))))); (p(l(p(D, n)), C) = p(l(A), C))\}$$