
HW 7 – Unification

CS 421 – Spring 2014

Revision 1.0

Assigned Thursday, March 13, 2014

Due Tuesday, April 1, 2014, 11:59 pm

1 Change Log

1.0 Initial Release.

2 Turn-In Procedure

This assignment is named `hw7`. Using your favorite tool(s), you should put your solution in a file named `hw7-solution.pdf`. Your answers to the following questions are to be submitted using the svn repository as described in the section **Instruction for Solving and Submitting Assignments on the web-page**: <http://courses.engr.illinois.edu/cs421/sp2014/mps/index.html>

3 Objectives and Background

The main purpose of this HW is to test your understanding of unifying system of equations.

The secondary purpose of HW7 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) Give a most general unifier for the following set of equations (unification problem). The uppercase letters A , B , C , and D denote variables of unification. The lowercase letters f , g , and h are term constructors of arity 2, 3, and 1 respectively (that is, take two, three, or one argument(s), respectively). Show all your work by listing the operations performed in each step of the unification and the result of that step.

$$\text{Unify}\{(f(A, g(B, C, h(D))) = f(g(C, B, C), A))\}$$