CSE 472/572, Spring 2002

Programming Project 3
AUTOMATED THEOREM PROVING

Last Update: 5 April 2002
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3. (a) **THE COMPUTATIONAL IMPLEMENTATION OF THIS PART IS OPTIONAL (WARNING: THE COMPUTATIONAL IMPLEMENTATION OF THIS PART IS RELATIVELY HARD.)**
Write a resolution + unification + refutation theorem prover for *first-order predicate* logic.

(b) **DO THIS PART (AT LEAST BY HAND) WHETHER OR NOT YOU DO PART 3a.**
Using resolution, show that the following set of clauses is inconsistent. Assume that a, b, and c are individual constants, and that x and y are variables.

i. $\{On(a,b)\}$
ii. $\{On(b,c)\}$
iii. $\{Red(a)\}$
iv. $\{Green(c)\}$
v. $\{Red(b)Green(b)\}$
vi. $\{\neg Red(x)\neg Green(y)\neg On(x,y)\}$

NOTE: Please do *all* exercises at least *by hand* (in addition to, or instead of, implementing them in a programming language) as part of your *report*. I will hand out a tentative grading scheme to make it easier for you to organize your final report.

********** NEW **********

DUE AT START OF LECTURE, ***FRIDAY, APRIL 19*****.**

********** NEW **********