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CS/IS F214 - Logic in Computer Science  
Assignment -1

Due Date: 23 – November – 2013 (11:00 PM)

Marks: 42

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Question-1

[12 Marks]

Consider the problem of simplifying algebraic expressions involving algebraic identities. Formulate the representation for algebraic expressions and write prolog clause(s) to simplify to its normal form (an expression in which cannot be simplified by further application of algebraic identities). Also write clauses which compare two expressions for equality.

Following are some of the algebraic identities for your reference.

$X+0 = X$ $X*1 = X$ $X*0 = 0$ $X/1 = X$	$0/X = 0$ $X - X = 0$ $X * X = 2X$
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Question-2

[30 Marks]

You are provided with the academic regulations of our university. Express the academic regulations rules 3.1 to 3.20 (refer section-3 of the academic regulations) in prolog such that your program answers possible queries on regulations such as

- Is a student eligible for doing PS course?
- Is a first degree student eligible for doing a higher degree course?
- Is a dual degree student eligible for doing a core course on his second degree?
- Is there a conflict in the list of courses scheduled for a student?