King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 202 – Fundamentals of Computer Engineering (T081)

CAD Assignment # 01 (*due date & time: Wednesday 07/01/2009 during class period*)

*** Show all your work. No credit will be given if work is not shown! ***

1. Using the "*LogiSim*" tool, build a 1-bit full adder/subtractor that is made of **only NOR gates**. Label all inputs as well as all of the outputs of the 1-bit full adder/subtractor.
2. Using the "*LogiSim*" tool and using the 1-bit full adder/subtractor that you have built in step (1), build a 4-bit ripple-carry adder/subtractor. Label all inputs as well as all of the outputs of the 4-bit ripple-carry adder/subtractor.

Save your circuit and name the file "*CAD01_yourStudentID.circ*".

Deliverables:
1. Send a soft copy of your circuit file to both myself (marwan@kfupm.edu.sa) and the grader (s200572490@kfupm.edu.sa) with the "subject" line being "*COE202-CAD01-yourStudentID*".
2. Submit a printout of the circuit window. Make sure that the entire circuit appears in the printout.
3. Submit snapshots of the circuit output for the following test cases:
    $$0011 + 0011$$
    $$0101 + 0001$$
    $$1001 + 1111$$
    $$0111 - 0001$$
    $$0100 - 0011$$
    $$0010 - 0110$$