ELEC 385: Computer System Design
Homework #6
Due: February 25, 2015

Chapter 5 text problems:

- 5.14-ish Design a 4-bit right rotator similar to the shifters shown in Figure 5.16 using only combinational logic (LSI or MSI). There should be one 4-bit data input (A), one 2-bit shift amount input (shamt) and one 4-bit data output (Y). Implement your design in Logisim. Run a few checks to ensure all is working. Submit your circuit diagram and logic table.
- 5.42-ish Design an incrementer that adds 4 to an 8-bit number using half adders. Implement your design in Logisim. Since Logisim doesn't have half adders, you may use multiple single-bit full adders (each only 1-bit), but don't use the carry-in. You need only an 8-bit input (A) and an 8-bit output (Y); there is no need for any sequential logic here, just combinational logic. Submit your circuit diagram and logic table.
- 5.18 For NxN multiplication.
- 5.25 a
- 5.27 a
- 5.29 a
- 5.31 a
- 5.34 a

As always, homework is to be single-sided and stapled.