EE 242 Lab #3

PRE-LAB

Find, download, and install the free version of Quartus II onto your computer. Develop schematics for the function F from last week's lab. Simulate the function using Quartus II.

Using the K-map optimization technique, develop a minimum SOP implementation of the logic function shown below. Demonstrate the equivalence of the expressions by developing a truth table showing the original function as well as the minimized SOP.

$$Y(a,b,c,d) = \sum m(0,2,4,7,8,10,12,15)$$

LAB

Implement the unreduced function F from last week's lab on the Altera system, use the switches for logic variable inputs and the LEDs for output.

Simulate the minimized function Y using Quartus and verify correct operation. Then implement the minimized function on the Altera board. Again, use the switches for logic variable inputs and the LEDs for output. Demonstrate your work to your instructor.