CS375 Lab 2

1. Create a truth table that determines if a 4-bit number (x1x2x3x4) is prime. The prime numbers between 0 and 15 are ( 2, 3, 5, 7, 11, 13).
2. Write a Boolean function f(x1, x2, x3, x4) that is true when the 4-bit number x1x2x3x4 is prime.
3. Simply the Boolean function using Boolean algebra
4. Implement the function using a Quartus Block Diagram/Schematic File
5. Map the inputs to switches S3-S0. Light at least one LED when the number on the switches is prime.
6. Test and demonstrate your circuit on one of the FPGA test boards.
7. Repeat the process to create a circuit that lights a different LED when the 4-bit number is divisible by 3.

Note:

You can build you solution for either of the FPGA chips we have available:

EP3C16F484C6N

EP2C20F484C7N