York University

Dept. of Computer Science and Engineering

Digital Logic Design CSE3201

Lab 2

The objective of this lab is to get acquainted with the board, and the Quartus software, in the same time you have to come up with a Boolean function and minimize it, simulate it, and download it to the board

Problem

Design a circuit in order to display on one of the 7-segemnt displays on the board a number that is inputted to the board using one of the DIP switches. The number is represented as a binary number from 0 to 9, and is displayed in decimal in the 7-segment display.

Check the board manual for what pins the 7-segment is connected to

Preparatory work

Write the truth tables for all the needed functions $F(x_1, x_2, x_3, x_4)$ that implement the above circuits in terms of the four input variables. Minimize these functions using one of the minimization techniques we studied in the course.
Write the verilog code to implement it.

In the lab

Simulate the circuit using Quartus to be sure it is correct, show the simulation result to the TA
Implement the function on the breadboard, test it, and show it to the TA.