COMP.CE.200 Digital Design

Fall 2021

Paper Exercise 1

Problem 1

a) A combinational system has one input x that represents a decimal number from 0 to 9. The output z is the square of x if x is larger than 4. Otherwise, the output is two times x. Give the formal high-level specification of the system and show the function in tabular form.

b) Determine a switching expression for the switching function determined by the one-set(0,2,4,8). You can assume that the system uses the minimum number of input bits and that the switching function is complete