COL215: Digital Logic and System Design

Special Laboratory Semester, AY 2021-22

Department of Computer Science & Engineering

Lab Assignment – 4

Controlling Brightness of 7-Segment Display

Learning Objective:

Learn how to control brightness of LED 7-segment displays using pulse width modulation.

Specification:

Design a circuit that controls brightness of 7-segment LED displays using pulse width modulation.

Details:

Design and implement a circuit that displays the 4 BCD digits based on the 16 slider switches with highest brightness on the left most display and lowest on the rightmost display. Further the digits continuously "rotate" giving an impression that when the digit moves to the left it starts becoming brighter. If the input from slider switches change register at a suitable time so as to avoid looking like an abrupt change.