

ECE474/574 - Lab 3

Introduction

We will be leveraging your push button knowledge from lab 2 and the new SystemVerilog understanding from class to make a working seven segment display driven by the DE0-Nano.

Assignment

For this lab you will need a working seven segment display board. Refer to Tekbots documentation on the 4 digit LED board [here](#). Determine how to control each segment and turn on each LED to display a number. You will need some resistors to set the bias to the transistors and to provide current limiting to the LEDs.

Use four pushbuttons to select the last four digits of your student ID one at a time. In other words, pushing button zero displays the last digit of your ID on LED digit 0. Button one displays the next digit of your ID on LED digit 1. If multiple pushbuttons are pressed, they should be ignored and no number should be displayed. The case statement for the bcd to seven segment decoder should be able to handle all possible numbers 0-9.

Checkoff

You will need to upload your code and a block diagram to TEACH along with getting it checked off in person. Program the FPGA in front of a TA and demonstrate the working code.