

## **ECE270: ELD**

### **Lab Quiz 1 (Group 1 and 2)**

**Date:** August 21, 2017

Consider two students in fourth year competing for a scholarship. The selection is purely based on the academic performance. The academic grades in year 3 have higher weight-age than the academic grades in year 2 and so on. For example, if the third-year grade of the first student is higher than that of the second student, the first student is the winner, irrespective of the other grades. Similarly, if both have an identical grade in the third year, then the decision will be based on second year grade irrespective of the other grades and so on. If academic grades are equal in all 3 years, then the student with higher aggregated score in all core courses will get the scholarship. Else, both will share the scholarship. Each year grade is represented using a separate 1-bit Boolean variable for each student. Similarly, aggregated score in all core courses is represented using a 1-bit variable for each student.

Design and implement the circuit on Zedboard. Use switches as inputs (Use all 8 switches as input: 4 for each student). Show the outputs using two LEDs (Use only left and right corner LEDs).

**Don't make any assumptions which contradict any of the above conditions.**

#### **Grading:**

- 1) Correctness: 2 marks
- 2) Design complexity in terms of number of FPGA resources: 2 marks
- 3) Demo on Zedboard: 3 marks
- 4) Viva (only if 1, 2 and 3 are okay): 3 marks