

## Lab Two Notes and Comments

### **Part 1:**

Re-implemented the seven segment display decoder as a case statement. Straight-forward experiment to display user input numbers on seven segment displays. No issues encountered.

### **Part 2:**

Re-used the seven segment display decoder, but modified to output two digits to two displays. Maximum input was 15, so implemented it in a simple-minded way, based on this constraint. No issues encountered.

### **Part 3:**

Code from Dr. McLeod's lab intro slides on D2L was used for the 4 bit adder. Straight-forward adder with input from user, and output, displayed on LED's

### **Part 4:**

Implemented an adder for two one-digit BCD, with input from switches and input and output displayed on the seven segment displays. Implemented as separate modules to add and convert to BC and then display the BCD on seven segment displays. Likely a more efficient implementation is possible, but this seemed most straight-forward. I had some issues with the logic involved in adding BCD directly and got frustrated, so did this more simplistic implementation.

### **Part 5:**

Similar solution to part 4. Added each digit of the input, added the corresponding interim sums, correcting for placement. Converted the sum directly to BCD using a customized module. Again, not the best solution, but effective.

### **Part 6:**

Very easy to implement this algorithm. No issues encountered.

### **Part 7:**

Straight-forward experiment. Basic math functions to convert and re-used decoder for display to seven segment displays. No issues encountered.

