Lab3\_prelab

(i). In 7 segment LED, how are the 4 bits programmed, how do they time multiplex. What is the scanning technique? What is the advantage and disadvantage of scanning?

* 4 bits are programmed in such a way that a Low value lights the individual segment and a High turns
* off the segment. To light an individual signal, drive the individual segment control signal Low along with the associated anode control signal for the individual character. They time multiplex by driving the associated anode control signal Low. The scanning technique is the action of reducing the number of I/O pins required for the four characters. The disadvantage is that the FPGA logic must continuously scan data out to the displays. The advantage is it reduces the required I/O down.

(ii) Look at the UCF file, which is uploaded to the lab. Check if all of the pin connections are programmed correctly. Report if there is any change required.

Upon looking and the UCF file, we could not find any incorrectness with the mapping. We did discover some specifics on how we are to implement the physical layout of the board. For example, our Ci variable (carry in) is connected to one of the pushbuttons on the board. We learned this from the Spartan manual. Again, we could not find any inconsistencies.

NET "Co" LOC = "T9" should be NET "CLK" LOC = "T9"

Part B can be observed from the six .vhd files located in the zip folder.

**This is what i fixed it to and sent to the TA**

**Upon looking and the UCF file, we could only discover the one incorrect statement, which is listed below. We did also discover some specifics on how we are to implement the physical layout of the board. For example, our Ci variable (carry in) is connected to one of the pushbuttons on the board. We learned this from the Spartan manual.**

NET "Co" LOC = "T9" should be NET "CLK" LOC = "T9"