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Laboratory Section

From Explore a Different Input Case through Simulation (Step 3)

- Turn in a copy of your modified *sequence_tb.vhd* code.
- Turn in a copy of the simulation waveform.

From Implement the Design on the XCR Board (Step 4)

1. What are the CPLD pins corresponding to switches 1 through 8 and LEDs 1 through 8?

Function	Pin	Function	Pin
Switch 1		LED 1	
Switch 2		LED 2	
Switch 3		LED 3	
Switch 4		LED 4	
Switch 5		LED 5	
Switch 6		LED 6	
Switch 7		LED 7	
Switch 8		LED 8	

2. Why did we not use a switch as a clock signal? (Hint: Note from Figure 1 of the board datasheet that the buttons are *debounce*. What does this mean?)
3. How many macrocells does your CPLD have? How many are you using? (Hint: look at the Fitter report.)
4. What kind of file is generated by the synthesis process?
5. What information does the file generated by the synthesis process contain?

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6. What kind of file is generated by the Generate Programming File process?

7. When is the User Constraints file used in the design flow?

8. What would happen if you do not specify a User Constraints file? How does the software map the inputs and outputs of your project to physical pins in the chip? (Hint: Remove the sequence.ucf file from your project and write down the pins used by the software for your inputs and outputs).

From Test the Project (Step 5)

1. Is there any change in the state of the system? (The state is given by the LEDs used as outputs. Is this Ok? (Check your simulation)

2. Turn off the power to your board, and then turn it back on. Is your system still programmed in the chip?

Have your TA verify that your design works. Signature _____

From Bonus part (Step 7)

Design a Sequence Detector

- Turn in a copy of your VHDL code.
- Turn in a copy of the test bench code.
- Turn in a copy of the simulation waveform.
- Have your TA verify that your design works. Signature _____