

LABORATORY SESSION 3

FINAL REPORT

Name:

Section:

Date:

From Lecture notes

1. What does CPLD stand for?
2. What connects the SPLD blocks in the CPLD?
3. What are the three major parts of a macrocell?

Explore a Different Input Case Trough Simulation

Step 3

Question 1: Write down the lines you modified and the new sequence of output Z given by the simulator.

Implementing the Design on the XCR board

Step 4

Question 2: Write down the CPLD pins corresponding to switch 1 to 8 and LEDs 1 to 8.

Question 3: Why didn't we use a switch as a clock signal? (Hint: Note from figure 1 of the board datasheet that the buttons are "debounce". What does that mean?)

Question 4: How many macrocells does your CPLD has? How many are you using? (Hint: look at the Fitter report)

Question 5: What kind of file is generated by the synthesis process? (Hint: look at figure 5 on the lab manual)

Question 6: What information contains the file generated by the synthesis process? (Hint: look at figure 5 on the lab manual)

Question 7: What kind of file is generated by the Generate Programming File process? (Hint: look at figure 5 on the lab manual)

Question 8: When is the User Constraints file used in the design flow? (Hint: look at figure 5 on the lab manual)

Question 9: What would happen if you don't specify a User constraint 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).

Project Testing

Step 5

Question 10: Set the reset signal to high and introduce a sequence through X. Is there any change on the state of the system? (The state is given by the LEDs used as outputs. Is this Ok? (Check your simulation)

Question 11: Turn the board's power off for a few seconds and then turn it back on. Is your system still programmed in the chip?

T.A signature:

Final Task

Step 6

1. Design a system: Design a system able to recognize the sequence 00101.
2. Implementing your design: Follow steps 1 to 6 and implement your design on the XCR board. Demonstrate your system to your T.A and ask him/her to sign your final report.

Bonus activity

Step 7

T.A signature: