

EE 3921 Lab 1: Software Setup and Logic Review

2 dedicated lab periods, 2 lab periods to complete

Name: _____

Objectives

- Software setup
- Basic tool operation
- VHDL Review

Prelab

- Download the Quartus software
Instructions are available in the file "Quartus Software Setup"
Note: installation may take some time and must be completed prior to the lab class time!
- Review the Quartus Project Setup notes
- Review the ModelSim Testbench Setup notes

student
check off

Assignment

Part 1: Develop the up/dn counter from the example

Instructions are available in the file "Example Design (Counter)"

Part 2: Simulate the design using ModelSim

Part 3: Implement the 3Hz version of the design on the DE10 board

Part 4: Modify the design

Implement a 5 bit version in simulation and on the DE10

Count by 3's in the up direction and 2's in the down direction

Do not wrap in the up direction, but do wrap in the down direction

Run the DE10 version at 1Hz

Check Off

You must demonstrate your working design(s) prior to the end of the 2nd lab period

- Demo the original design (Simulation, DE10 implementation) 40% _____
- Demo your modified design (Simulation, DE10 implementation) 40% _____

Lab Report (informal)

- Due at 4:00 pm, 1 day after 2nd lab period – in the box
- Include a properly documented informal lab report. 20% _____