

12 Dice Game

I. Overview and Procedure

The dice game described in Chapter 22 of your textbook is the subject of the last lab of the semester. The game has been implemented in three 22V10 PLDs. Form two person groups for this assignment (there can be a three person group if necessary). Each group will be given three preprogrammed 22V10 PLDs that implement the three sections of the dice game. You must do the following:

1. Test each PLD separately and verify that they perform their part of the dice game. The following link:
 - <http://www.erc.msstate.edu/~reese/EE3714/dicegame/index.htm>

describes the how the dice game is split among the three PLDs. You MUST also read the information in Chapter 22 of the textbook to understand the operation of the Dice game. The three PLDs will be marked with RED ("control.vhd"), GREEN ("dpatha.vhd"), and BLUE ("dpathb.vhd") to indicate which VHDL files were use to program them.

2. Hook the three PLDs together to form the complete dice game and verify its operation.
3. Modify the VHDL file for the "dpathb" PLD such that the D2312 output is valid if it matches any of the last three digits of your SSN. Treat digits 0,1,7 as special cases; digits 0,1 should be treated as equal to 10, digit 7 should be treated as 8. The VHDL source code for the Dice Game implementation can be found here:
 - <http://www.erc.msstate.edu/~reese/EE3714/dice/control.vhd>
 - <http://www.erc.msstate.edu/~reese/EE3714/dice/dpatha.vhd>
 - <http://www.erc.msstate.edu/~reese/EE3714/dice/dpathb.vhd>

Use the following link to COMPILE your modified "dpathb.vhd" file:

- <http://www.erc.msstate.edu/~reese/EE3714/webcad/VHDLcompile.htm>

The link shown above DOES NOT SIMULATE your VHDL – it only produces a JEDEC file. You will have to program the PLD and test it in your dice game to see if it works correctly.

When testing, you will want to use a very slow clock to observe the counter, dicesum outputs. A slow clock will also allow you to stop the dice roll on a particular value in order to force a win or loss condition.

II. Report

There is no report needed for this lab. You only need to get your pre-lab data sheet and lab data sheet signed by the TA. Hand in these sheets to the TA at the completion of lab.

PRE LAB DATA SHEET

TA CHECKOFF _____

VHDL for “new” DPATHB PLD?: _____

LAB DATA SHEET

A. Demonstration of each separate PLD dice game component?

TA CHECKOFF _____

B. Complete Dice game with original DPATHB implementation working?

TA CHECKOFF _____

C. Modified Dice game with new DPATHB implementation working?

TA CHECKOFF _____