

HOMEWORK #8: Muller Circuits

This homework is due by Midnight on Tuesday, April 7, 2009.
NO LATE HOMEWORK WILL BE ACCEPTED.

- Read Chapter 6.
- Complete Problem 6.2.
- Complete Problem 6.3.
- Complete the following demo of ATACS.
 1. Go to: <http://www.async.ece.utah.edu/ATACS/>
 2. Select Download ATACS
 3. Login using: ece6750 and password: atacs
 4. Download and install `atacs` for the appropriate operating system.
 5. Download and install the `Graphviz` program.
 6. Download the example tar file from the course website.
 7. Run ATACS and create a new project called `demo`.
 8. Channel synthesis demo:
 - (a) Import `patron.vhd`, `shop.vhd`, `winery.vhd`, and `wine_example2.vhd` into the project.
 - (b) Double click on each of the files to see what is contained within them.
 - (c) Right-click on `wine_example2.vhd` and select `Create Synthesis View`. Enter the name `channelSyn`.
 - (d) Select options: `Quiet` and `No Insert`.
 - (e) Press `Add Component` and select `patron.vhd`. Repeat to add `shop.vhd` and `winery.vhd`.
 - (f) In the component field at the top of the window, enter `THE_SHOP`.
 - (g) Select `Save and Run` from the `File` menu or press the play button.
 - (h) At this point, a circuit netlist should be displayed. Change to generalized-C technology and redo `Save and Run`. Note how the circuit has changed.
 9. Handshaking synthesis demo:
 - (a) Import `patronP_b4p.vhd`, `shopPA_b4p.vhd`, `wineryA_b4p.vhd`, and `wine_bundled.vhd` into the project.
 - (b) Double click on each of the files to see what is contained within them.
 - (c) Right-click on `wine_bundled.vhd` and select `Create Synthesis View`. Enter the name `hseSyn`.
 - (d) Press `Add Component` and select `patronP_b4p.vhd`. Repeat to add `shopPA_b4p.vhd` and `wineryA_b4p.vhd`.
 - (e) In the component field at the top of the window, enter `shopPA_bundled2`.
 - (f) Select `Save and Run` from the `File` menu or press the play button.
 - (g) At this point, a circuit netlist should be displayed. Note the gate for the new CSC variable. Now, change to generalized-C technology and redo `Save and Run`. Note how the circuit has changed.

10. XBM synthesis demo:

- (a) Import `xbm-si.unc` into the project.
- (b) Double click on this file to see what it contains.
- (c) Right-click on `xbm-si.unc` and select **Create Synthesis View**. Enter the name `uncSyn`.
- (d) Select the BM 2-level technology.
- (e) Select **Save and Run** from the **File** menu or press the play button.
- (f) At this point, a circuit netlist should be displayed.

11. Petri-net synthesis demo:

- (a) Import `ex1.g` into the project.
- (b) Double click on this file to see what it contains.
- (c) Right-click on `ex1.g` and select **Create Synthesis View**. Enter the name `pnSyn`.
- (d) Select Atomic Gates technology.
- (e) Select **Save and Run** from the **File** menu or press the play button.
- (f) At this point, a circuit netlist should be displayed. Select generalized-C technology and select **Save and Run**. Select standard-C technology and select **Save and Run**.

- Continue working on your project.