

Exercise 1 (*Ability to run ModelSim From Home*):

- To perform homeworks and work on the project you will find it handy to have ModelSim installed on your own machine.
- Windows users:
 - Look for “Quartus Prime Lite” download.
 - Can choose to download Quartus & ModelSim bundled or under “Individual Files” just get the ModelSimSetup.
- MAC Users:
 - Can use XenApp to run remote on CAE machine
 - Can use remote login to Linux Machine
- It is strongly encouraged for you to have ModelSim capability from home.

Creating a ModelSim Project, Compiling, & Simulating:

- On the class webpage in the table of “In Class” Exercises download the the supporting files of *counter.sv* and *counter_tb.v*. Put them in a logical spot...not just your downloads folder!
- Look over the code for *counter.sv*. This is your DUT (Device Under Test). It is a simple 8-bit counter that can be enabled, and can count either up or down. It uses some system verilog constructs and thus ends with the *.sv* extension.
- *counter_tb.v* is the test bench for this DUT. It instantiates the DUT, and applies some stimulus to its inputs. Look over the code.

Creating a ModelSim Project, Compiling, & Simulating:

- Launch ModelSim and create a new project
- Add the two downloaded files for this exercise to the project.
- Compile the code. Note there is a syntax error in **counter.sv**. Discover what it is and fix it and compile again.
- Start simulation on *counter_tb.v*.
- Add waves to the waveform viewer, and run the simulation.
- Perform a screen capture of the waveforms and submit the image to the dropbox for Exercise1
 - Ensure the **DUT** signal **cnt** is displayed in waveforms (*NOTE: objects window...select iDUT to see signals internal to iDUT*)
 - Ensure radix is set as hex.