Instructions for Setting Up ModelSim to Rebuild

1: The first thing to do is to make sure that in the Project tab of the ModelSim window the ‘Order’ is set up correctly. That is, when compiling VHDL modules, it is important that they be compiled in the ‘proper’ order – that when a unit of Module A is instantiated in Module B, that Module B is compiled after Module A. Hence, the user should establish an order of compilation where the simplest modules – those that do not instantiate any other modules – are compiled first, followed by the modules that use the first modules, etc., until the test bench is compiled. This can be accomplished by Compile/Compile Order, which will bring up the Compile Order window. There the user arranges the compilation order, placing the first modules to compile at the top and the last modules to compile at the bottom.

2: Now, we want to establish some ‘buttons’ on the wave window that will be shortcuts for work that we want to do. This is accomplished by invoking Window/Customize. This brings up a small window labeled ‘Customize Toolbar’. In this small window, select the window that you want to customize by appropriate selection using the Window Name panel – this explanation uses the Wave window. Next, give the button that you are going to create a name by typing something into the panel labeled ‘Button Name’. Next, type a command to execute into the ‘Function’ panel. Finally, identify where you want the button to be placed (Right/Left, Tool Bar/ Footer) and click the ‘Add’ button.

3: Repeat the above action for each button that you want to set up. When all the desired buttons are set up, then click the ‘Done’ button to return to regular ModelSim activity.

To demonstrate this, the following activity will create three buttons:

   A) set up compile order (step 1 above).
   B) click on Window/Customize to get the Customize Toolbar window.
   C) select ‘wave – default’ for ‘Window Name’.
   D) type ‘Rebuild’ in the ‘Button Name’ panel
   E) type ‘project compileall ; restart – f ; run 100 ns’ in the ‘Function’ panel. This will force a compilation of all the modules in the project in the order specified (that’s the ‘project compileall’ part), then reload the system (that’s the ‘restart – f’ part – the – f flag forces the reload so you don’t have to click on okay to get it to happen), and finally, the ‘run 100 ns’ part advances simulation time by 100 ns.
   F) click on the Add button
   G) change ‘Button Name’ to ‘1 us’
   H) change ‘Function’ to ‘run 1 us’
   I) click on the Add button
   J) change ‘Button Name’ to ’10 us’
   K) change ‘Function’ to ‘run 10 us’
   L) click on the Add button
   M) click on the Done button

Now the system can be recompiled by clicking the ‘Rebuild’ button, and simulation time advanced by clicking on the appropriate run button.