**ModelSim Tutorial**

1. Open ModelSim
2. **Create a “New Project”**
   1. On the menu-bar, **select File 🡪 New 🡪 Project**.
   2. **Type** project name.
   3. **Choose location** (directory) where you want to save it by clicking “Browse” button.
   4. **Click “OK”**.
3. Add existing files:
   1. From the **“Add items to the Project”** window, **select** the **“Add Existing File”** option(icon) and add source files by clicking **“Browse”** button.
   2. **Select** source files and **click “Open”** and **“OK”**.
   3. **Close** “Add items to the Project” window.
4. Compilation step:
   1. On the menu-bar, **select Compile 🡪 Compile All**

Or click the “Compile All” icon ( ) on the Main window toolbar.

* 1. If a red  appears next to your source file, your Verilog/SystemVerilog file has an error that needs to be fixed.

If a green check appears, the compilation step passed.

1. Simulation step:
   1. On the menu-bar, **select Simulate 🡪 Start Simulation**

Or click the “Simulate” icon (**** ) on the Main window toolbar.

* 1. From the **“Start Simulation”** window, **click “(+)”** icon next to the “work” library.
  2. Load the test module into the simulator by **selecting a top module**.
  3. **Disable** optimization option by **removing check mark next to “Enable optimization”**.
  4. **Click “OK”**.

1. Run step:
   1. In the **“Objects”** window, **select** **all of the items (signals) listed** using the standard **“Shift-click”**. Once they are all selected, **“right-click”** and **select Add 🡪 To Wave 🡪 Selected Signals**.

This should open up the **“Wave”** tab with all of the signals you selected from “Object” window.

* 1. On the menu-bar, **select Simulate 🡪 Run 🡪 Run –All** (or **Run 100**).

Or click either the “Run 100” icon ( ) or “Run –All” icon ( ) on the Main window toolbar.

Also you can enter command **“run –all”** or **“run 100”** in the **“Transcript”** window.

* 1. When **“Finish Vsim”** window pops up, **click “No”**. (If you click “Yes”, it will close the ModelSim GUI.)

1. To print out the waveform:
   1. **Click “Wave” tab** and adjust waveforms by clicking **“Zoom”** buttons ().
   2. Go to the menu-bar, **select File 🡪 Print**.
   3. Choose printer name and click “OK”.
2. Exit from ModelSim GUI:
   1. On the menu-bar, **select File 🡪 Quit** and **click “Yes”**.