SystemC

**Background:**

    SystemC is the standard design and verification language built in C++ that spans from concept to implementation in hardware and software. As a standard, SystemC could possibly enable and accelerate the exchange of system-level intellectual property (IP) models and executable specifications using a common C-based modeling platform. (*from*[*http://www.systemc.org*](http://www.systemc.org/) )  
    SystemC provides a single language to define hardware and software components, to facilitate hardware/software co-simulation, and to facilitate step-by-step refinement of a system design down to the register-transfer level for synthesis. *(from textbook: "A SystemC Primer")*

**Lab Resources:**

* ***Software:***Microsoft Visual C++ 6.0
* ***Textbook:*A SystemC Primer**, J. Bhasker, Star Galaxy Publishing, 2002 | ISBN 0-9650391-8-8
* ***Website:***[**Official SystemC Website**](http://www.systemc.org/)(http://www.systemc.org)

**Installing SystemC**

*Installing To Your Local Computer*

1. Download SystemC from http://www.systemc.org
2. Unzip SystemC files to a hard drive with "plenty" space. Preferably, unzip the files to the hard drive's directory (ex; C:\SystemC or E:\SystemC)
3. The SystemC distribution includes project and workspace files for Visual C++. If you use these project and workspace files the SystemC source files are available to your new project. For Visual C++ 6.0 the  
   project and workspace files are located in directory: **...\systemc-2.0.1b\msvc60**, where "..." is whatever parent directory you saved SystemC to.
4. Click on the subdirectory: `systemc' which contains the project and workspace files to compile the `systemc.lib' library. Double-click on the `systemc.dsw' file to launch Visual C++ with the workspace file. The workspace file will have the proper switches set to compile for Visual C++ 6.0.  
   Select `Build systemc.lib' under the Build menu or press F7 to build `systemc.lib'.

*Creating a new design*

1. Start Microsoft Visual C++ 6.0
2. Create a Project Workspace:
   1. Click on "File", then "New", select "Projects", then click on "Win32 Console Application".
   2. In the "Location" box, click on the down arrow, then on "Drives", and choose "h:\\some\_server\_name\cs1Xxx" , then click "OK" (some\_server\_name will have some name there (it changes periodically)) (csXxx is your login). You should not actually be typing anything here, just click.
   3. For the "Project Name", We will use "lab1a" as the example.
   4. Type "OK".
   5. Choose "An empty project" and click "Finish". Then click "OK".
3. You can now see a folder named "lab1a classes" in the workspace window. (Left part of screen)
4. Port SystemC libraries to Microsoft Visual C++ 6.0:
   1. Click on “Project”, then “Settings”, then select the C/C++ tab, and then finally select the “C++ Language” category. Make sure that the “Enable Run Time Type Information (RTTI)” checkbox is checked.
   2. Also make sure that the SystemC header files are included by  switching to the “Preprocessor” on the C/C++ tab and then typing “C:\SystemC\systemc-2.0.1\src” in the text entry field labeled “Additional include directories”.
   3. Next click on the “Link” tab, and make sure the SystemC library is included to your project by typing “C:\SystemC\systemc-2.0.1\msvc60\systemc\Debug” in the text entry field labeled “Additional library path”.
   4. Add the SystemC object files by first clicking on “Project”, then “Add to Project”, then “Files”. In the File Browser navigate to the “C:\SystemC\systemc-2.0.1\msvc60\systemc\Debug” directory. In the text entry field labeled “File Name” type “\*.obj” and press enter. Click on the file “sc\_attribute.obj” and then simultaneously press the “Ctrl” & “A” keys (CTRL+A). Click the OK button to add the files.
   5. In your workspace window under the “File View” Tab, you should see a number of object files with the “sc\_” prefix such as sc\_attribute.obj, sc\_bit.obj, etc. Find the file “sc\_isdb\_trace.obj”, click that file name, and press “delete” on your keyboard.