Tutorial: Introduction to SystemC

Presenter

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This tutorial will provide an introduction to SystemC which is gaining in popularity as the language of choice for system level designs. A brief outline of the tutorial is given below.

1. Introduction
This section will provide an introduction to the basic notion of executable specifications and its use, and the key highlights of SystemC. It will also compare between the current methodology of system level design with that of the SystemC based design flow.

2. An Example
As customary with any language teaching method, this section will introduce the SystemC language using a simple example.

3. Modules and Hierarchy
This section will introduce the basic building block for a SystemC design that is Modules. It will discuss how modules are designed and a design is partitioned as well as defining the interfaces. It will also talk about creating test benches to verify the modules.

4. Processes
Processes are the basic units of execution within SystemC and this section will discuss the different types of processes in SystemC and how to create them.

5. Ports and Signals
This section talks about the basic mechanisms of communicating information with the modules using ports and signals.

6. Data Types
Discusses the various data types being supported by SystemC.

7. Fixed Point Types
In order to support the design of bit accurate hardware behavior, SystemC offers a wide variety of fixed point data types. This section talks about how to use them.

8. Simulation and Debugging in SystemC
This section describes the simulation control facilities provided by SystemC to start and stop a simulation, query the current time, and understand the order in which the various processes are executed as well as the additional facilities that can help in debugging SystemC programs.

9. Conclusion
This section concludes the tutorial with a projection on the future of SystemC.

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application of several generations of Built-In Self Test technology and tools currently in use within Lucent. His current interests are in the field of System Level Design and System-on-Chip test methods. He has several technical publications and a patent to his credit. Sudipta received B.Tech. and M.Tech. degrees in Electronics and Electrical Communication Engineering and Ph.D. degree in Computer Science and Engineering from the Indian Institute of Technology, Kharagpur, India.