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MODULE 1

Introduction to VLSI

- * what is VLSI?
- * Introduction
- * VLSI Design Flow
- * Scope
- * Opportunities

MODULE 3

UNIX Basic

- * Introduction
- * Handling directory Operation from Command Prompt
- * Handling files Operation from Command Prompt
- * Handling File Editor Application (vi, vim, gvim)

MODULE 5 FPGA, ASIC, SOC

- * Introduction
- * What is FPGA?
- * What is ASIC?
- * What is SOC?
- * Comparison Between FPGA, ASIC, SOC

MODULE 2

Digital Electronics

- * Digital number system
- * Logic Gates
- * Logic Minimization
- * Combinational Circuit
- * Sequential Circuit
- * Finite State Machine
- * Memories

MODULE 4

Verilog HDL

- * Introduction
- * Verilog Data Types & Operators
- * Verilog Assignment & construct
- * Verilog System Task
- * Combinational & Sequential design
- * Synchronous & Asynchronous design
- * Task & Function
- * Self Checking TB
- * Code Coverage

MODULE 6

STA Basic

- * Introduction
- * Delay calculation
- * Circuit maximum Operating frequency calculation
- * Skew and jitter
- * clock domain and variation
- * Clock Network Distribution

MODULE 7

System Verilog

- * Introduction
- * System Verilog Data types
- * Arrays In SV
- * Task & Function In SV
- * Interface
- * OOPS & Advance OOPs Concept
- * Randomization & macros
- * Threads, Mailbox, Semaphore, Events
- * System Verilog TB Environment
- * Function Coverage

MODULE 8

System Verilog Assertions

- * Introduction
- * Immediate assertion
- * Simple assertion
- * Sequence composition
- * ABV
- * Assertion Coverage

MODULE 9

UVM Methodology

- * Introduction
- * UVM Factory
- * UVM phases
- * UVM Reporting Mechanism
- * TLM & configuration
- * UVM Sequence
- * UVM TB Environments & Callbacks
- * UVM hack and tricks, report server
- * UVM events, barrier and heartbeats

MODULE 10

Python Scripts

- * Introduction
- * Variable Types
- * Operators
- * number, string and list
- * If else and loops
- * tuple and dictionary
- * Function
- * File I/O Operation

MODULE 11

Mini Projects

- * Verilog based mini project
- * System Verilog based mini project
- * UVM based mini project

MODULE 12

Industrial Standard Project

- * Specification
- * Design Architecture
- * RTL Design using verilog HDL
- * RTL Verification using system verilog/UVM
- * AXI4/ AXI3/ AHB/ APB/ ASB/ Bridge
- * SPI/ I2C/ UART
- * And many more.....