



FPGA - Verilog Roadmap



ELECTRONICS CLUB
IIT KANPUR



PREREQUISITES

Digital Electronics:- Logic Gates, K-maps, Types of circuits, Adders, MUX/DEMUX, Flip-Flops, Clock, Counters.

Playlist by Neso Academy - [Introduction to Digital Electronics](#)

Assignment on Boolean Algebra - [Assignment 1](#)



WEEK 1 - BASICS OF VERILOG

01

Learn the syntax and concepts of Verilog HDL . Read the pdf - [Verilog Introduction](#)

Learn how to run and simulate verilog code and GTK Wave in your pc - [Install iverilog + gtkwave](#)

Go through the complete above playlist

02

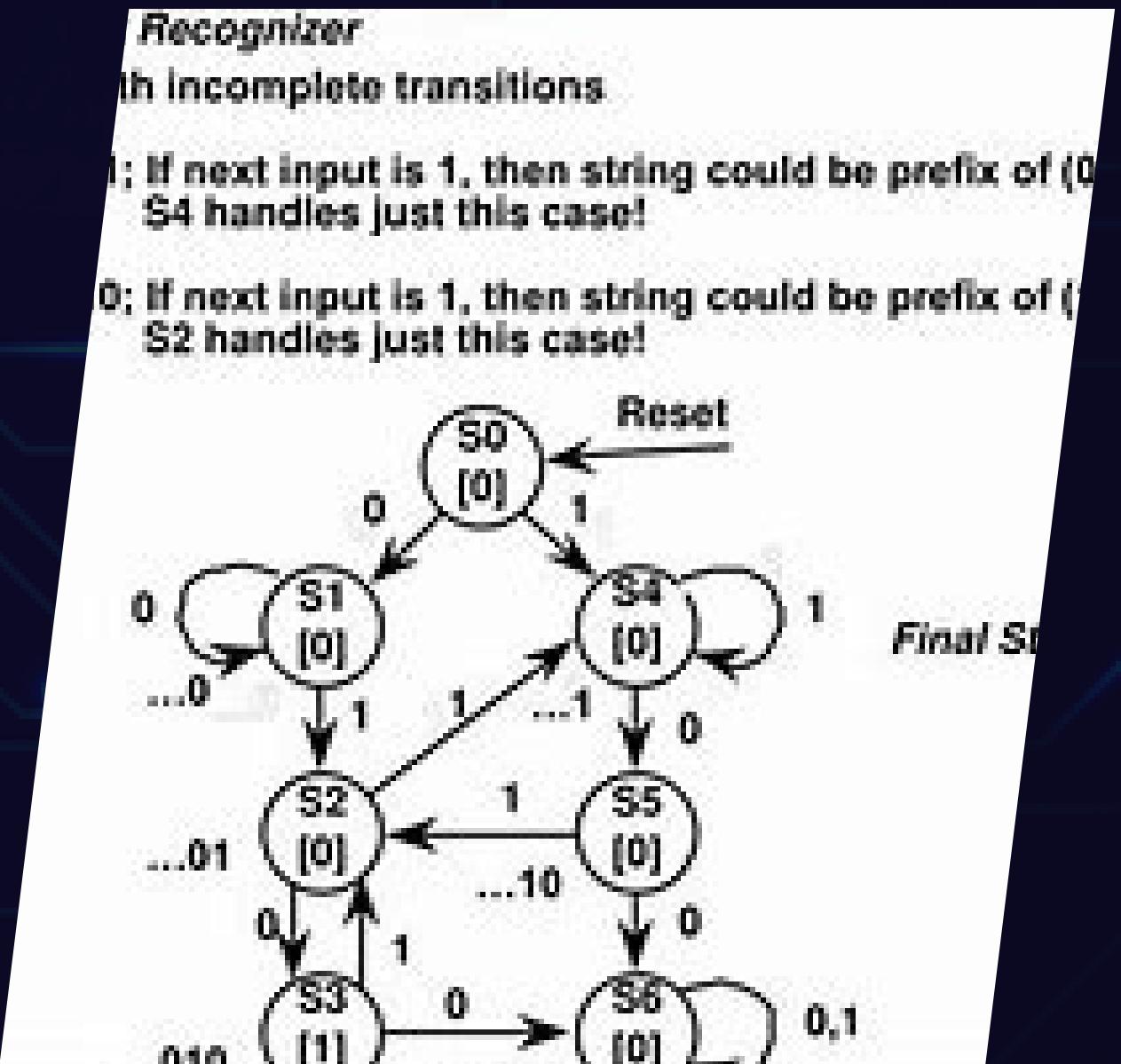
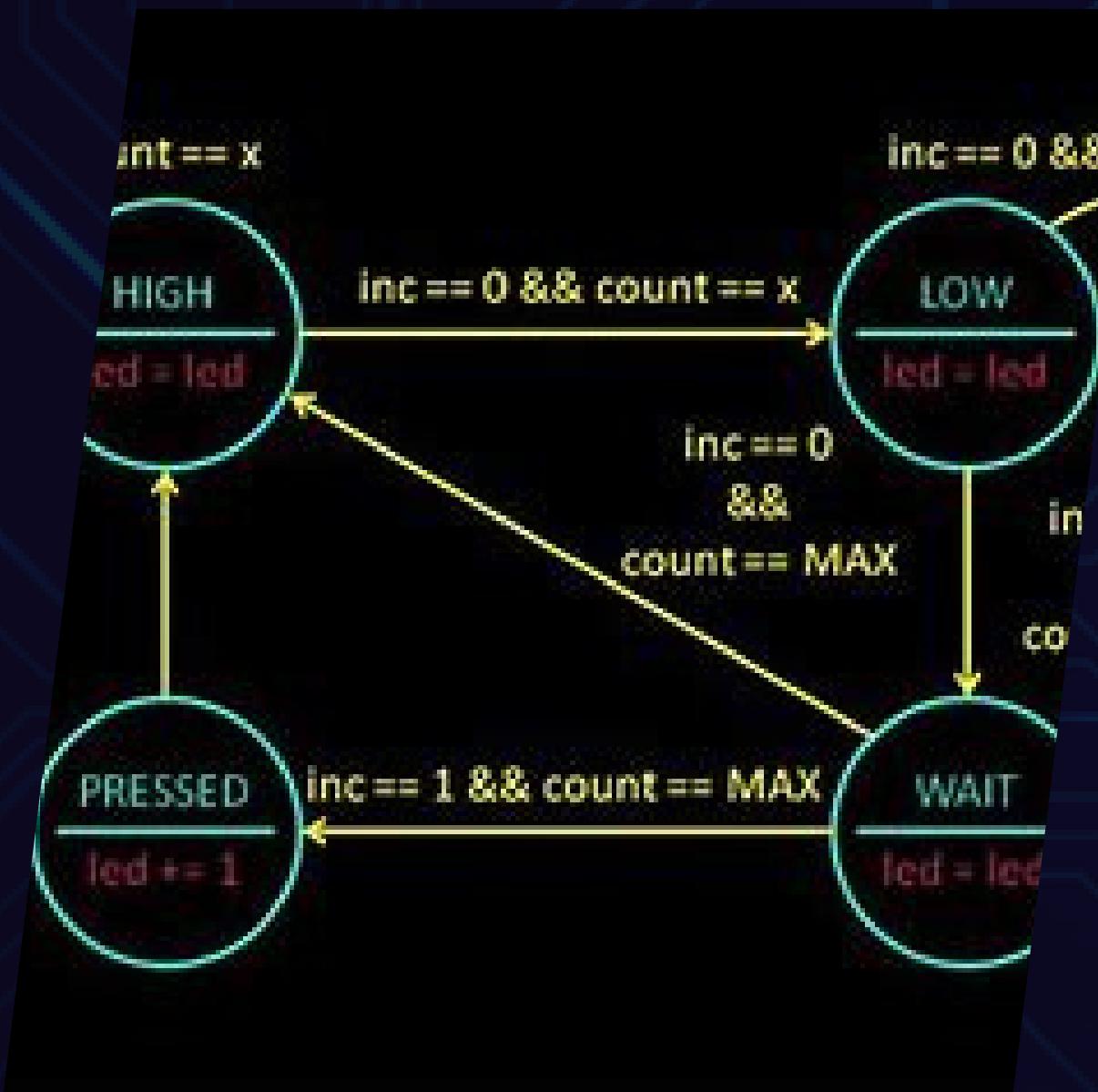
To understand the different levels of abstraction in verilog - [Levels of Abstraction](#)

Assignment - Try to code half adders, MUX/DEMUX ,encoders,decoders,counters in verilog.



WEEK 2 - FINITE STATE MACHINES

Watch these two videos to get familiar with FSMs - [FSM 1](#)
- [FSM 2](#)





WEEK 3 - INTRODUCTION TO FPGA

What is an FPGA - [Basic knowledge of an FPGA](#)
- [Getting Started with FPGA](#)

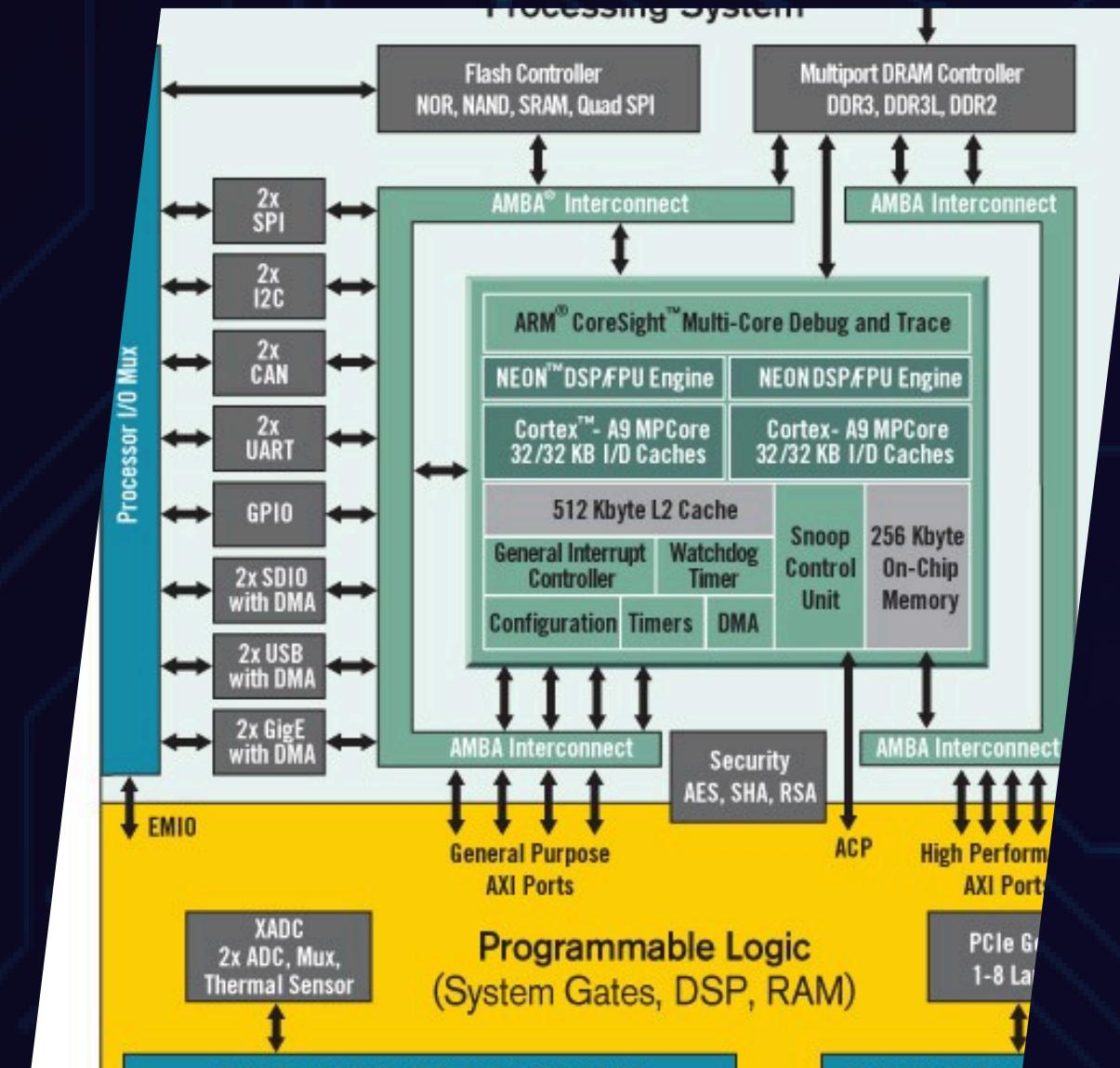
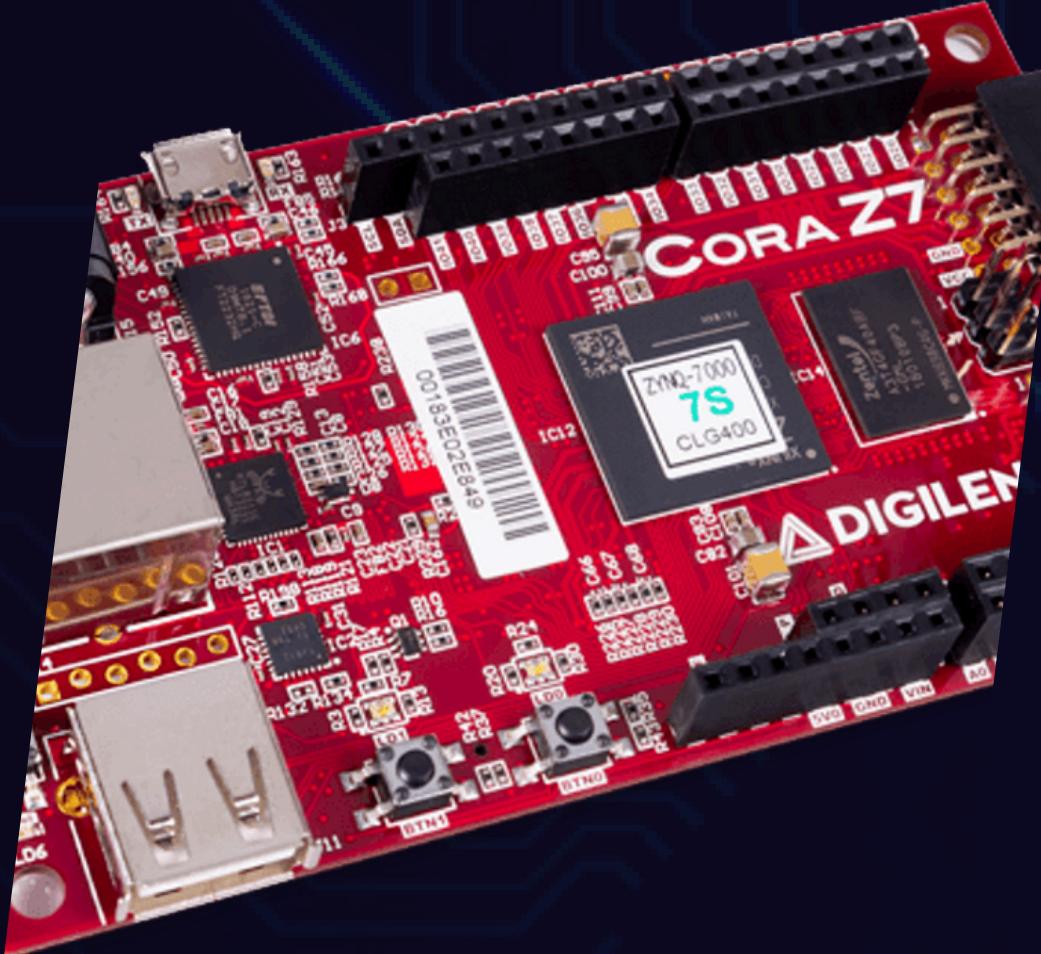
01

Installing and working on Vivado -
[https://www.youtube.com/playlist?
list=PLSTiCUIiN_BoIM4anuvWS_bM7PTbECZ3PE](https://www.youtube.com/playlist?list=PLSTiCUIiN_BoIM4anuvWS_bM7PTbECZ3PE)

02

Assignment - Write a program in Vivado to blink LEDs
with a clock cycle

WEEK 4



Read and understand the schematic diagram of any particular FPGA, for example Zynq 7000 Cora-Z7-10 as shown in the picture beside.

[Reference Manual](#)

ADVANCED TOPICS

Important Modules for FPGA:- UART Port - [UART COM Port](#)

- Blocking vs Non-Blocking Assignments
- [blocking-vs-nonblocking-in-verilog](#)

Quick Brushup for all the topics - [fpga-101](#)



THANK YOU