

* FPGA Basics:- Architecture, Applications & Use:-

→ A Basic FPGA Architecture consists of thousands of Fundamental elements called Configurable Logic Blocks (CLBs). Surrounded by a system of Programmable Interconnects, called a fabric, that routes signal b/w CLBs. I/O Blocks Interface between the FPGA & external devices.

* Depending on the manufacturer, the CLB may also be referred to as a Logic Block (LB), a Logic Element (LE) or a Logic Cell (LC).

* Application:-

* Many Applications rely on the parallel Execution of Identical Operations; the Ability to configure the FPGA's CLB into hundreds / thousands of Identical processing blocks has Applications in Image Processing, AI, data center hardware Accelerators, Enterprise Networking and Automotive Advanced driver assistance (ADAS).

Many of these Application areas are changing very quickly as requirements evolve New protocols and standards are adopted. FPGAs Enable Manufacture to Implement s/m that can be updated when necessary.

* A Good Example of FPGA use is High Speed Search: Microsoft is using FPGAs in the data center's to run Bing Search Algorithms. The FPGA can change to support new Algorithms as they are created. If needs change, the design can be reprogrammed to run to run Simulation/Modeling routines in an HPC Application. This Flexibility is difficult / impossible to achieve with an ASIC.

* Other FPGA Includes aerospace and defense, medical electronics, digital Television, Consumer Electronics, Industrial motor control, Scientific instruments, Cybersecurity s/m's, and Wireless communications.

Verilog HDL Basics by intel:- (HDL) It is a language used for describing a digital s/m like a Network Switch or a Microprocessor / memory / flip-flop.

* It Means, by using a HDL we can describe by any digital hardware at any level. Designs, which are described in HDL are Independent of Technology, Very easy for designing and debugging, and are normally useful than schematics, particularly for large ckt's:-

* Behavioural level.

* RTL Level.

* Gate level.

* Lexical Tokens

* Numbers.

* Identifiers

* Operators

* Data types.

* Operands

* Modules.

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Course:- Python

Topic:- Interactive data
Visualizⁿ With bokeh
Web scraping With python
beautiful soap.

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Interactive data visualization With bokeh:-

- * Introduction to Bokeh.
- * Installing Bokeh.
- * plotting Triangles and circle Graphs (practice)
- * using Bokeh With pandas.
- * plotting Education Data (practice).
- * plotting Weather Data (practice).
- * Visual Attributes.
- * Time-series plots.
- * More Visualization With Bokeh.
- * plotting Time Intervals of the nation Detectors.
- * Hover Tool Implementation.

Web scraping With python beautiful soup:-

- * Web scraping is scraping information from web.
- * we will use the beautiful soup library.
- * It enables us to grab the information from the big website.
- * Again the jupyter notebook comes into picture as we were working with data.
- * The data is thus extracted from the specified website.

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