VHDL-FGPA notes
(2022-Feb)

VHDL — what is "VHDL" stands for?

V ⟶ (VHSIC) → Very High Speed Integrated circuit

H ⟶ "Hardware"

D ⟶ "Descriptive"

L ⟶ "Language"

- We are try to physically describe how a digital circuit operates.

- History of VHDL :⟶
VHDL was developed in 1981 by department of defence (USA). VHDL was developed as a way to address the hardware life cycle crisis of electronics Systems.
The DOD, gave away all rights of the Language to the IEEE. (later on)

Devices that uses VHDL :⟶

- FPGA (Field Programmable Gate Array)
- CPLD (complex programmable logic device)
- ASIC (Application Specific Integrated circuit)

[Subfield]

FPGA :⟶
- Designed using logic Blocks
- Much higher logic capacity
- Typically are used for much more complex design
- Volatile memory
- More expensive than CPLD

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CPLD :→

- Less logic capacity than FPGA
- Typically used for a simpler less complex design
- Non-volatile memory
- Typically more cost effective than FPGA.

* Major manufacturers of both are → XILINX and
                                    ALTERA.

Note :→ (VVI)**

- VHDL is not a programming language
▽ we are only writing the configuration file, on FPGA or other, telling how should a physical digital circuit run on FPGA.

- VHDL is not software, it is used to describe the hardware that software runs on.

- When VHDL is synthesized the compiler runs through the code and construct the gates specified in the VHDL code and implements them onto the targeted logic device.

← Lesson 1 ends → (Introduction to VHDL in High level)