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ASIC: An application-specific integrated circuit (ASIC) is an integrated circuit (IC) chip customized for a particular use, rather than intended for general-purpose use. For example, a chip designed to run a digital voice recorder or a high-frequency bitcoin miner is an ASIC.

PLA: Programmable logic array is a kind of programmable logic device used to implement combination logic circuits.

PAL: Is a family of programmable logic devices (semiconductors) used to implement logic functions in digital circuits introduced by monolithic memories in 1978.

PLD: A programmable logic device (PLD) is an electronic component used to build reconfigurable digital circuits.

CPLD: Is a programmable logic device with complexity between that of PLAs and FPGAs and architectural features of both.

FPGA: A field programmable gate array (FPGA) is an electronic component used to build reconfigurable digital circuits.

2. Higher granularity always leads to lesser delay between the input & output. As granularity increases, number of levels of logic in critical path decreases, number of flip-flops with increase in granularity level coverage on the flip side and number of switches increases as each block has more pins.

3. Programmable logic devices may be considered because:

- i) It is ~~easy~~ to add field modifications by loading new code to the in-circuit programmable device or replacing a chip in a socket.
- ii) As long as the I/O's are connected right, the PCL's can be used for development while making changes in code on PCL's.
- iii) It's also faster, cleaner & easier to modify and upgrade.

4) The stored program ends up being read only & also non-volatile. This is the reason why they are called OTP (one time programmable) because it is an EPROM cell which is 100% compatible with that of conventional logic circuit.

$$F_1(w, x, y, z) = w\bar{x}\bar{y}z + w\bar{x}y\bar{z} + wxy$$

$$F_2(w, x, y, z) = w\bar{x}y + x\bar{y}z$$

