

# Assignment: Module 1 Activity

## Moore's law :

Moore's law is the observation that transistor density would double every 2 years.

## physical limitations :

1. The high temperatures of transistors eventually would make it impossible to create smaller circuits. This is because cooling down the transistors takes more energy than the amount of energy that already passes through the transistors.
2. Moore's Law is about putting more number of semiconductor into the same size silicon chip. Practically, it may not be possible to manufacture such a small transistor but it still limits the Moore's law.
3. Dennard scaling is that voltage, the voltage swing should scale with the transistor size. The transistors get smaller and you get more density. Keeps power consumption, and temperature low. Dennard scaling can't continue forever. Because the voltage swing between low and high has to be higher than the threshold voltage of the transistor.
4. Voltage swing, from zero to five volts is if there's some kind of noise on your signal. Voltage swing from zero to five volts is pretty big. So noise tolerant is a big problem because there's always noise in any kind of practical system.
5. Short channel effects, Electromigration, and Interconnect delay are also physical limitation of Moore's law.