Moore’s Law :

- Predicted that transistor density would double every 2 years
- Not a physical law, just an observation • Smaller transistors switch faster
- Exponential increase in density would lead to exponential increase in speed

Physical limitations in devices that have stopped it from continuing to be true :

- Power/Temperature Problem Increasing transistor density leads to increased power consumption which increases the heat
- Limitation to packing more transistors onto to a chip is a physical limitation called Dennard scaling a barrier to clock speed that has limited microprocessor frequency The power increases as transistor density increases
- Voltage scaling : It’s reduces dynamic power consumption but cannot prevent leakage power lost it’s due to noise or threshold voltage.