- **Moore’s Law**: It predicted that the density of transistors in an integrated circuit doubles every two years
- It is actually an observation
- Gordon Moore noticed that the number of transistors per square inch on integrated circuits had doubled every two years since their invention
- Although the recent pace has slowed for Moore's Law, the doubling of installed transistors on silicon chips occurs closer to every 18 months instead of every two years.
- As the number of transistors gets increased (and also they become smaller), the clock frequency also gets increased which in turn makes the circuits faster

Limitations:

- But as a consequence of it, the increased clock frequency makes the transistor switching more
- This results in increased power consumption and thus results in heavy heating of transistors which may melt them, also they are smaller now
- So air cooling fans are needed to dissipate heat away
- But air cooling can be done to some extent only
- Also, the voltage of the transistor cannot be scaled down more than a extent as it should be greater than its threshold voltage
- Also, Leakage power cannot be removed by scaling voltage
- So, dynamic power can’t be scaled down more than a limit