Cellular Networks :

1st Generation (1 G) ---> 1980s :

-- Emf is used to transfer data.
-- Metal wires were used between source tower to destination tower.
-- Analog wave is used to transfer data. later it was replaced with digital wave.
-- only voice data transfer is done.

2nd Generation (2 G) --> 1990s:

-- CDMA is used in 2G. we can use only sim of the same company as of mobile.

-- GSM(Global system for Mobile communication) Architecture:
-- Mobile station = SIM(Subscribers Identity Module) + mobile equipment.
-- BTS (base trans-reciever station) = cell tower.
-- BSC(Base station controller). = 2 or more cell tower.
-- BSS(Base station Sub system). = BSC + BTS.

-- MSC(Mobile switching Centre) = multiple BSC are connected to it.
-- VLR(Visitor location register)
-- HLR(Home location register)
-- AUC(Authentication centre)
-- EIR(Equipment identity Register)
-- OMC(Operation Maintenance Centre)
-- IMEI no.(International Mobile Equipment Identity number).

-- Handoff :
-- While Switching from one cell to another cell the BTS are also changed.

-- Two types of handoff:
1. SOFT --> make before break. (before(handoff) breaking previous connection with BTS1, it is connected to BTS2 range.)
2. HARD --> break before make.(before(handoff) making with another connection with BTS2, the previous connection is break with BTS1.)

3rd Generation ---> 2008 :

4th Generation --> 2010 :
-- Video call.
-- high frequency.
-- high speed than 3G.
-- upto 6GHz

5th Genearation -->
-- Data transfer in mili seconds.
-- High bandwidth : maximum amount of data transmitted over internet in a given amount of time.
-- ultra low latency.
-- High freqency ranges = high bandwidth.
-- more than 6GHz.