



SMART DEVICE PROGRAMMING

6133

VARIOUS MOBILE TECHNOLOGIES

- ✓ Mobile technology is the technology used for cellular communication.
- ✓ In wireless telecommunication major mobile technologies are
 - CDMA
 - GSM (2G, 3G, 4G, 5G etc)
 - GPRS (General Packet Radio Service)
 - EDGE (Enhanced Data GSM Environment)
 - UMTS (Universel Mobile Tele communications Service)

GSM

- ✓ GSM(Global System for Mobile communication) is the popular digital cellular technology.
- ✓ A standard developed by the European Telecommunications Standards Institute (ETSI) to describe the protocols for second-generation (2G) digital cellular networks used by mobile devices such as mobile phones and tablets.
- ✓ It is a widely used mobile communication system in the world.
- ✓ GSM is used for transmitting mobile voice and data services operate at the 850MHz, 900MHz, 1800MHz, and 1900MHz frequency bands.
- ✓ 2G networks developed as a replacement for first generation (1G) analog cellular networks.

- ✓ Subsequently, the 3GPP developed third-generation (3G) UMTS standards, followed by fourth-generation (4G) LTE Advanced standards
- ✓ Some of the GSM network providers in India are Airtel , Vodafone Idea, Reliance Jio and BSNL etc.
- ✓ Voice Calls
- ✓ Call Forwarding
- ✓ Call Barring
- ✓ Call waiting
- ✓ SMS – Short Message Service
- ✓ Voice Conference.

1G

- ✓ This was the first generation of GSM, and it was an analog technology.
- ✓ Designed exclusively for voice communication
- ✓ Introduced in US in early 1980s
- ✓ Speed upto 2.4kbps
- ✓ Mobile phones with limited battery life
- ✓ No data security

2G

- ✓ 2G was digital
- ✓ Introduced in Finland in 1991
- ✓ 2G introduced encryption
- ✓ There were GSM and CDMA versions of 2G
- ✓ Speed upto 64kbps
- ✓ Text and multimedia messaging possible
- ✓ 2G with GPRS is 2.5G

GPRS

- General Packet Radio Service is a packet-switching technology that enables data transfers through cellular networks.
- Designed to replace the circuit switched services available on second generation GSM.
- It is used for mobile internet, MMS and other data communications.
- GPRS connection can achieve a data transfer rate of up to 114Kbps.
- GPRS is also called 2.5G.
- More efficient use of bandwidth
- Relatively Low Connection Cost
- Short Access Times
- Provide point to point services

EDGE

- Enhanced data for global evolution (EDGE) is a high-speed mobile data standard
- Enable second-generation GSM and time division multiple access (TDMA) networks to transmit data at up to 384 kilobits per second.
- It has around 4 times better speed than GPRS.
- Easy implementation on a GSM/GPRS network.
- Cost effective
- Enables new multimedia services
- Quicker MMS , video phone , video conference , Remote presentations



CDMA

- ✓ CDMA(Code Division Multiple Access) is a 3G wireless technology.
- ✓ Good Signal quality
- ✓ Voice Clarity
- ✓ Minimizes signal break up
- ✓ More reliable Network

3G

- ✓ Speed up to 200 kbit/sec, and later versions could achieve multiple megabits per second.
- ✓ High speed browsing
- ✓ Supports video conferencing, multimedia emails etc.
- ✓ Fast and easy audio , video transfer
- ✓ 3D gaming

HSDPA/HSPA

- ✓ HSDPA (High Speed Downlink Packet Access) is an advanced technology to 3G Technology. i.e; 3.5 Technology.
- ✓ It supports 7.2Mbps but its actual speed 3Mbps only.
- ✓ It supports to load larger files, Mobile TV Streaming and Road maps etc.

HSUPA

- ✓ High Speed Uplink Packet Access is another technology besides of HSDPA.
- ✓ It is created by Nokia and supports a speed of 5.76 Mbps.
- ✓ HSDPA and HSUPA together called as HSPA.

UMTS

- ✓ UMTS(Universal Mobile Telecommunication System) is also a 3G Technology which is commonly called as WCDMA (Wideband CDMA).
- ✓ It provides faster data transfer rates at 42 Mbps.

4G

- ✓ The major advance of 4G is mobile broadband internet services provided to external systems, such as laptops, wireless modems, etc.
- ✓ Faster , more reliable mobile broadband internet.
- ✓ 4G introduced in 2011
- ✓ Speed 100Mbps to 1Gbps
- ✓ 4G LTE network is very fast and 10 times faster than the 3G network.
- ✓ HD mobile TV
- ✓ It offers extremely high voice quality
- ✓ Cloud computing
- ✓ IP telephony
- ✓ 4G technology requires expensive infrastructure for operation.

5G

- Fifth generation was started from late 2010.
- Complete wireless communication with almost no limitations.
- It is highly supportable to www (Wireless World Wide Web)
- High speed
- High quality
- Providing large broadcasting of data in Gbps.
- Faster data transmission
- Large phone memory
- Multi media newspapers and TV programs with HD quality
- Clarity in audio and video
- Support interactive multimedia , voice, streaming video etc.