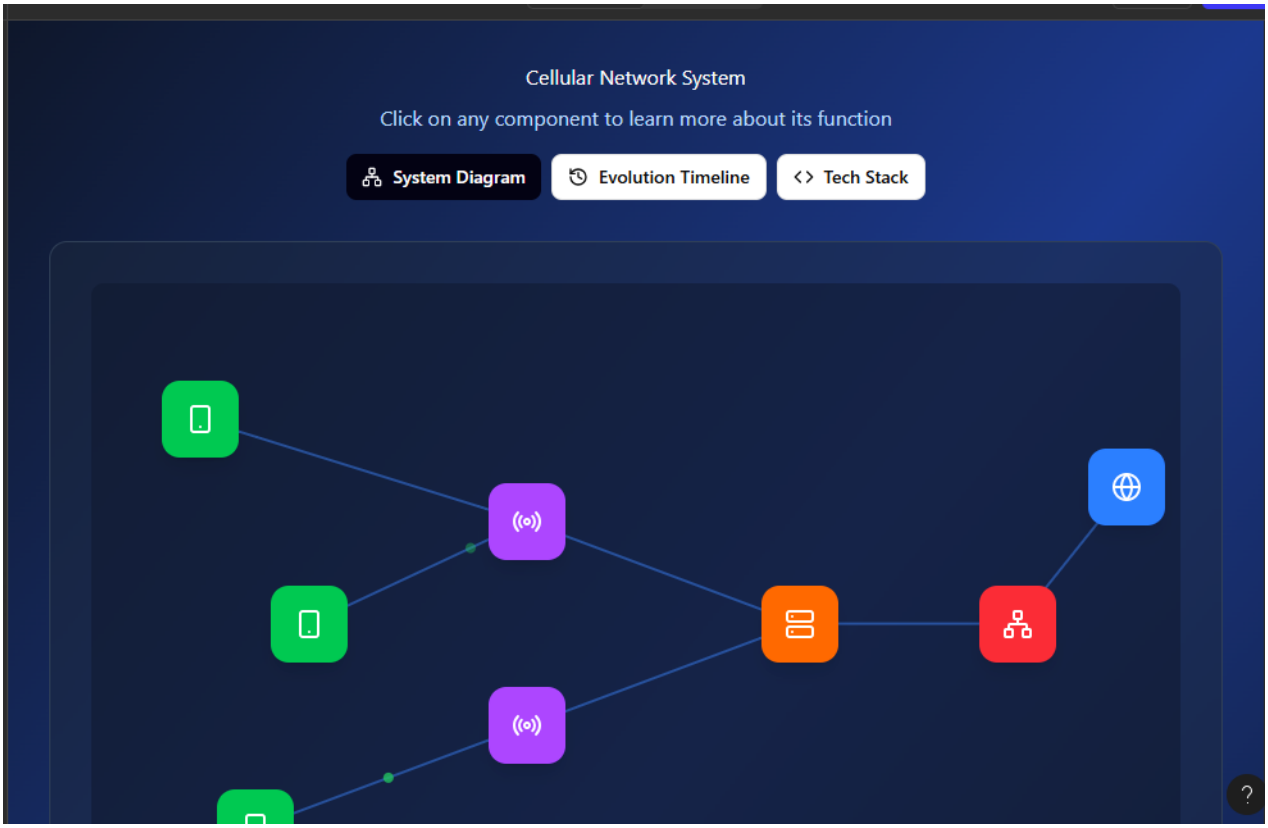
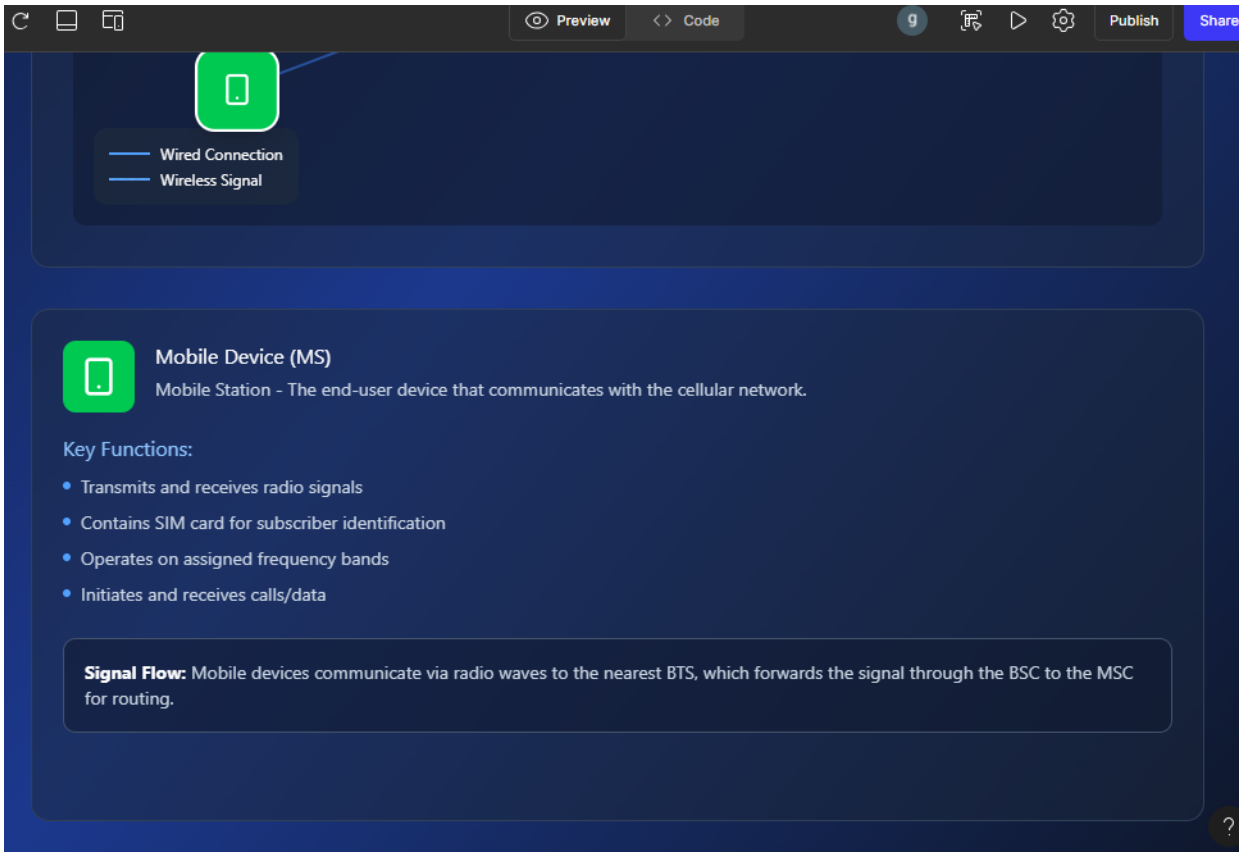
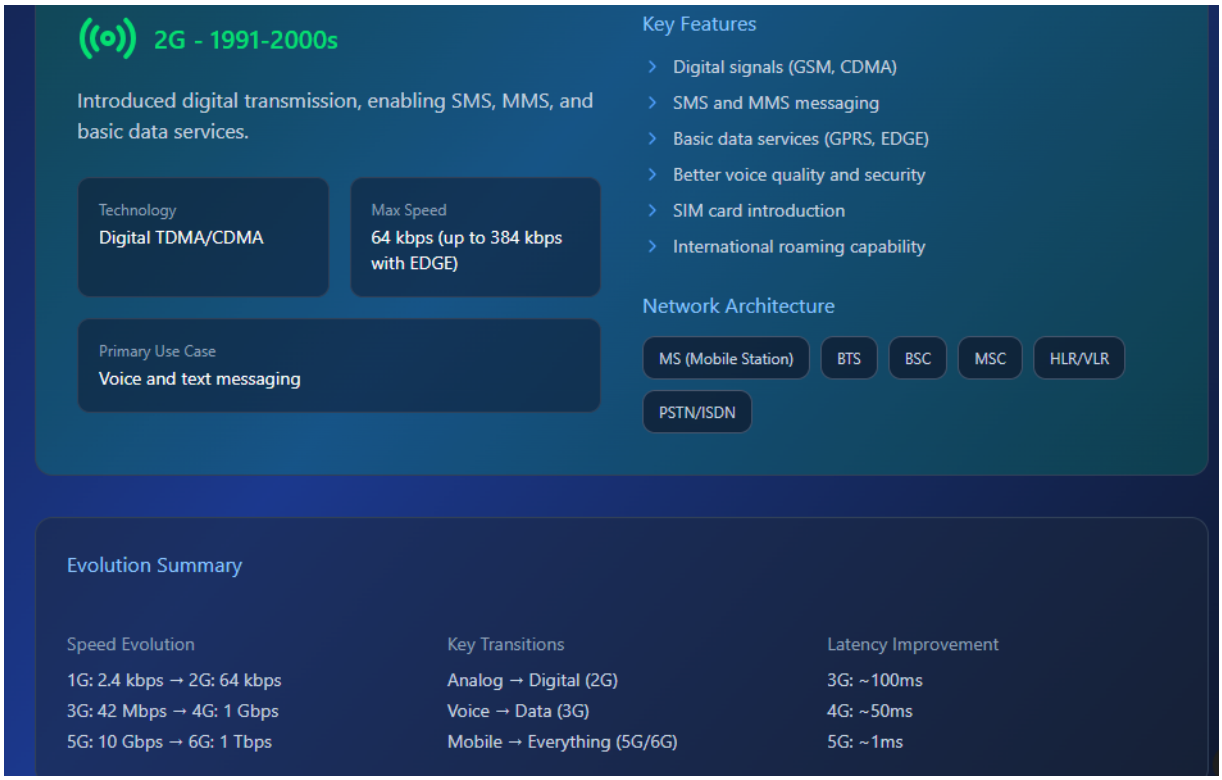

Cellular Network System
Click on any component to learn more about its function
System Diagram
Evolution Timeline
Tech Stack


Preview
Code
Publish
Share
Wired Connection
Wireless Signal
Mobile Device (MS)
Mobile Station - The end-user device that communicates with the cellular network.
Key Functions:
Transmits and receives radio signals
Contains SIM card for subscriber identification
Operates on assigned frequency bands
Initiates and receives calls/data
Signal Flow: Mobile devices communicate via radio waves to the nearest BTS, which forwards the signal through the BSC to the MSC for routing.


Preview
Code
Publish
Share
System Diagram
Evolution Timeline
Tech Stack
1G
1980s
2G
1991-2000s
3G
2001-2010s
4G LTE
2009-Present
5G
2019-Present
6G
2030s (Future)
2G - 1991-2000s
Introduced digital transmission, enabling SMS, MMS, and basic data services.
Technology
Digital TDMA/CDMA
Max Speed
64 kbps (up to 384 kbps
Key Features
Digital signals (GSM, CDMA)
SMS and MMS messaging
Basic data services (GPRS, EDGE)
Better voice quality and security
SIM card introduction
International roaming capability


2G - 1991-2000s
Introduced digital transmission, enabling SMS, MMS, and basic data services.
Technology
Digital TDMA/CDMA
Max Speed
64 kbps (up to 384 kbps with EDGE)
Primary Use Case
Voice and text messaging
Key Features
Digital signals (GSM, CDMA)
SMS and MMS messaging
Basic data services (GPRS, EDGE)
Better voice quality and security
SIM card introduction
International roaming capability
Network Architecture
MS (Mobile Station)
BTS
BSC
MSC
HLR/VLR
PSTN/ISDN
Evolution Summary
Speed Evolution
1G: 2.4 kbps → 2G: 64 kbps
3G: 42 Mbps → 4G: 1 Gbps
5G: 10 Gbps → 6G: 1 Tbps
Key Transitions
Analog → Digital (2G)
Voice → Data (3G)
Mobile → Everything (5G/6G)
Latency Improvement
3G: ~100ms
4G: ~50ms
5G: ~1ms