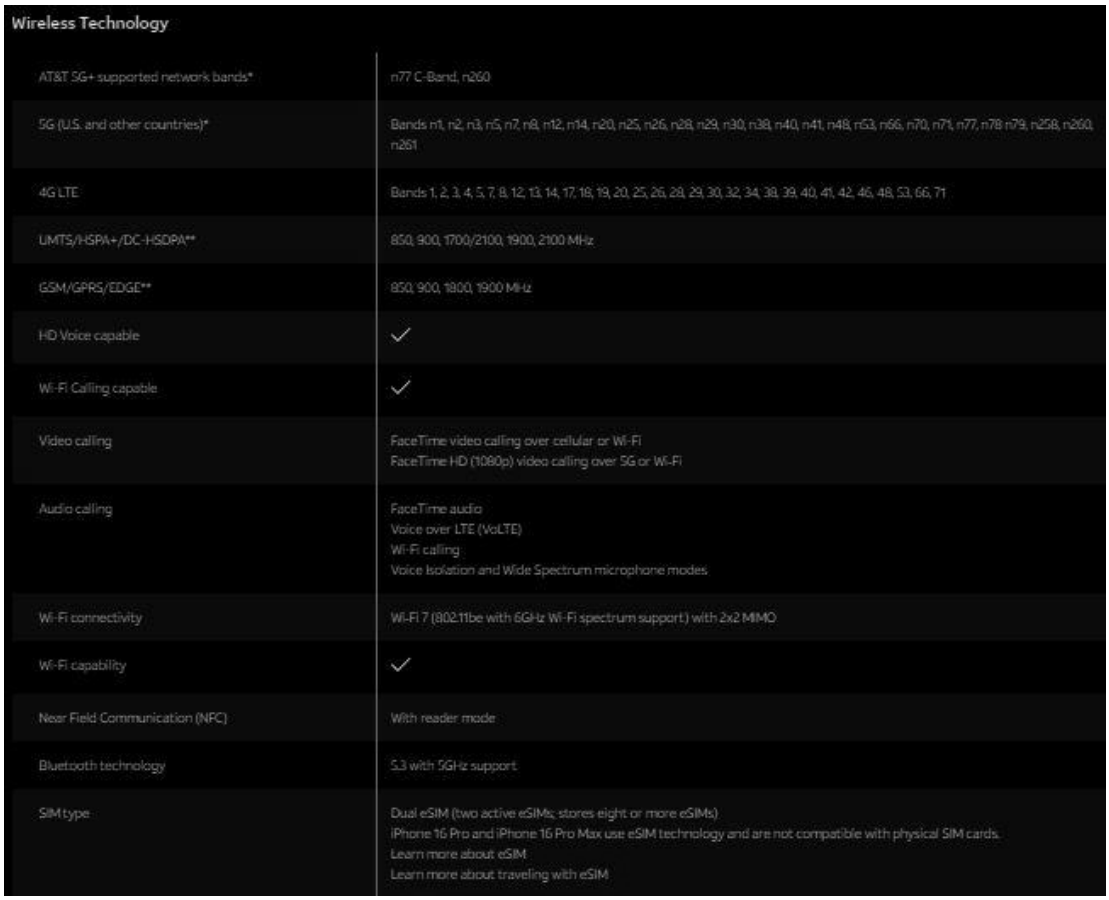
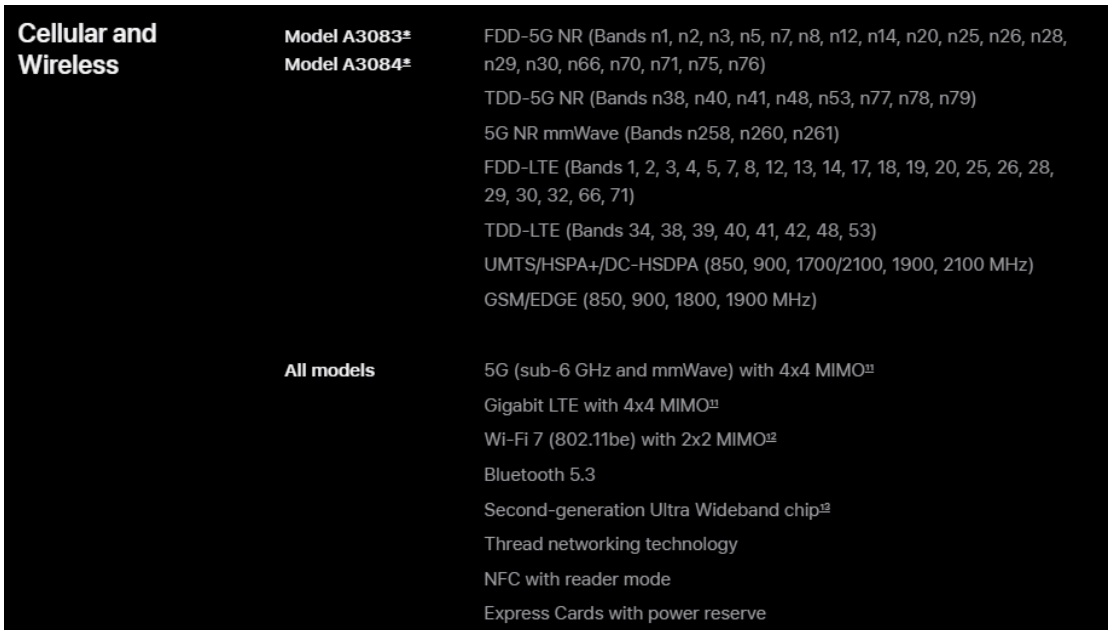
CS 456 - Assignment 1

1. **<u>Wireless Technology specifications about my iPhone 16 Pro:</u>**
   I have included details from both at&t and the apple website.

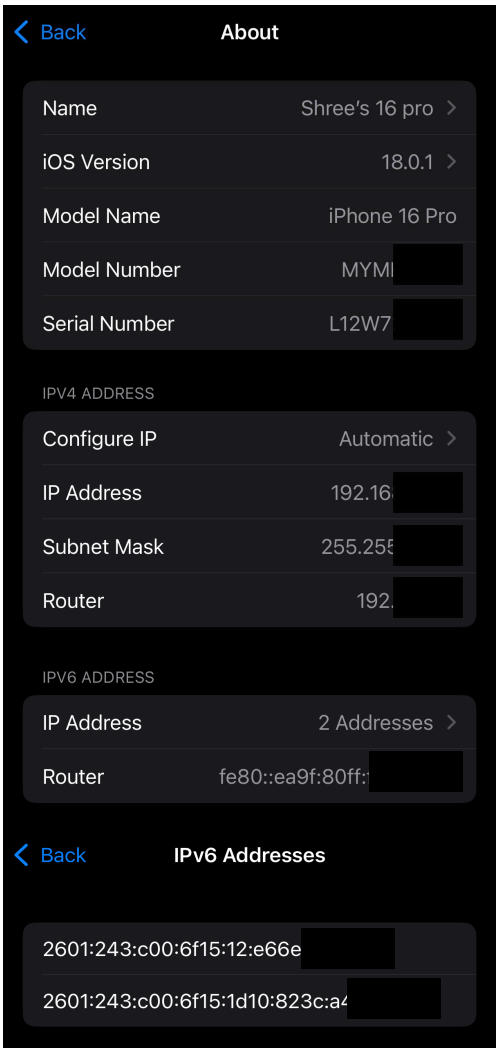


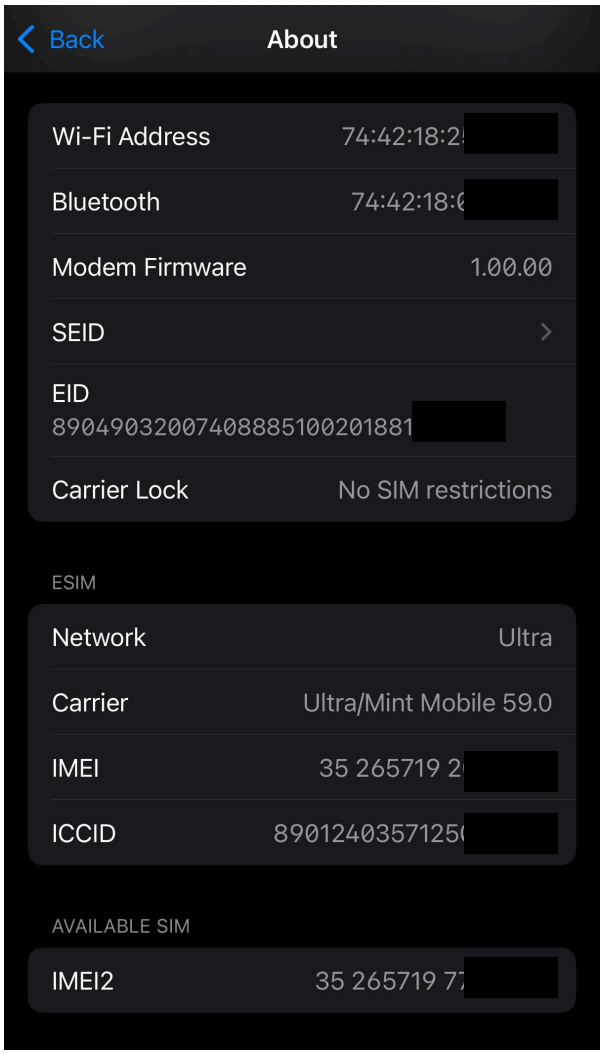
Wireless Technology	
AT&T 5G+ supported network bands*	n77 C-Band, n260
5G (U.S. and other countries)*	Bands n1, n2, n3, n5, n7, n8, n12, n14, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n53, n66, n70, n71, n77, n78 n79, n258, n260, n261
4G LTE	Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 34, 38, 39, 40, 41, 42, 46, 48, 53, 66, 71
UMTS/HSPA+/DC-HSDPA**	850, 900, 1700/2100, 1900, 2100 MHz
GSM/GPRS/EDGE**	850, 900, 1800, 1900 MHz
HD Voice capable	✓
Wi-Fi Calling capable	✓
Video calling	FaceTime video calling over cellular or Wi-Fi FaceTime HD (1080p) video calling over 5G or Wi-Fi
Audio calling	FaceTime audio Voice over LTE (VoLTE) Wi-Fi calling Voice Isolation and Wide Spectrum microphone modes
Wi-Fi connectivity	Wi-Fi 7 (802.11be with 6GHz Wi-Fi spectrum support) with 2x2 MIMO
Wi-Fi capability	✓
Near Field Communication (NFC)	With reader mode
Bluetooth technology	5.3 with 5GHz support
SIM type	Dual eSIM (two active eSIMs; stores eight or more eSIMs) iPhone 16 Pro and iPhone 16 Pro Max use eSIM technology and are not compatible with physical SIM cards. Learn more about eSIM Learn more about traveling with eSIM



Cellular and Wireless		
	Model A3083[8] **Model A3084[8]**	FDD-5G NR (Bands n1, n2, n3, n5, n7, n8, n12, n14, n20, n25, n26, n28, n29, n30, n66, n70, n71, n75, n76)
		TDD-5G NR (Bands n38, n40, n41, n48, n53, n77, n78, n79)
		5G NR mmWave (Bands n258, n260, n261)
		FDD-LTE (Bands 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 32, 66, 71)
		TDD-LTE (Bands 34, 38, 39, 40, 41, 42, 48, 53)
		UMTS/HSPA+/DC-HSDPA (850, 900, 1700/2100, 1900, 2100 MHz)
		GSM/EDGE (850, 900, 1800, 1900 MHz)
	All models	5G (sub-6 GHz and mmWave) with 4x4 MIMO[11]
		Gigabit LTE with 4x4 MIMO[11]
		Wi-Fi 7 (802.11be) with 2x2 MIMO[12]
		Bluetooth 5.3
		Second-generation Ultra Wideband chip[13]
		Thread networking technology
		NFC with reader mode
		Express Cards with power reserve

2. **<u>Information about the wireless settings on my iPhone 16 Pro:</u>**
   IPv4 Address: A 32-bit address that identifies the phone on the internet. It is dynamically assigned by the router/carrier.
   IPv6 Addresses: A 128-bit address that identifies the phone on the internet. It is dynamically assigned.
   Wi-Fi Address (MAC Address): A unique 48-bit address for the Wi-Fi interface. It is static.
   Bluetooth Address: A unique identifier for the phone's Bluetooth module. It is static.
   EID (Embedded Identity Document): Used to identify an eSIM for mobile networks. It is static.
   IMEI Number (International Mobile Equipment Identity): A unique identifier for the phone. It is used by mobile networks. It is static.
   ICCID (Integrated Circuit Card Identifier): Identifies the SIM card in the phone. It is statically assigned for each particular sim card.
   IMEI2: This is the second IMEI number, since my phone allows for dual sim. It is static and linked to the second eSIM.





3. **<u>Details about my Cellular network connection:</u>**

Carrier: The mobile network provider.
Capabilities: SA+NSA refers to the two deployment modes of 5G networks.
TAC (Tracking Area Code): A code that identifies a group of cell towers within a particular area. It is dynamic.
Network PLMN (Public Land Mobile Network): A unique identifier for the mobile network operator. It is static for a given carrier.
Phone Number: The number associated with the eSIM.
Band: The frequency band that the phone is using. It is dynamic.
Bandwidth: The width of the frequency channel that the phone is using. It is dynamic.
PCI (Physical Cell ID): Identifies the specific cell tower that the phone is connected to. It is dynamic.
RSRP (Reference Signal Received Power): Measures the signal strength of LTE/5G. It is dynamic.
RSRQ (Reference Signal Received Quality): Measures the quality of the received signal. It is dynamic
SINR0 and SINR1: The ratio of signal to noise for a given signal. It is dynamic.