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1) Frequency Division Multiplexing (FDM): Here, we divide the bandwidth of a physical medium into smaller, independent frequency channels. FDM is commonly used in radio and television transmission. Time-Division Multiplexing (TDM): Instead of dividing the bandwidth into channels like FDM, TDM divides time. Each connection occupies a portion of time in the link, allowing for simultaneous transmission. Synchronous and Statistical TDM are two variations of this method. Wavelength Division Multiplexing (WDM): WDM increases the capacity of optical fibers by transmitting multiple optical signals simultaneously over a single fiber, each with a different wavelength of light. It's divided into Dense WDM (DWDM) and Coarse WDM (CWDM), catering to different capacity requirements. Code-Division Multiplexing (CDM): CDM enables multiple users to transmit data simultaneously over a single channel by assigning each user a unique code to modulate their signal. This technique provides increased capacity and some level of security against interception or jamming. Space-Division Multiplexing (SDM): SDM exploits physical separation by using multiple antennas to create parallel communication channels. This method, commonly employed in wireless communication systems like MIMO technology, allows for multiple users to transmit data simultaneously without interference.

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