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BSSE23058
Section A.

Assignment #3
Information & Communication Technologies.

Q1 A file system is a logical method for managing the storage of data on a disk's surface. such as a hard drive or SSD. A commonly used logical format performed by windows is called the FAT file system because it relies on a standardized file allocation table (FAT) to keep track of file locations on the disk. NTFS is the default file system for windows NT and its successors. It supports large file sizes, file and folder permissions and advanced features. FAT32 is an extended edition of the original FAT file system, It is suitable for removable storage devices but has limitations on individual file size. On the Mac platform, the HFS+ has been supplanted by the Apple File System (APFS). APFS is specifically optimized for solid state drives (SSD's) and flash storage. Linux, ~~the~~ commonly employs the ext4 as its default file system. Renowned for its scalability and support for large file systems, ~~ext4 inc.~~ In IBM's operating systems, the JFS is a notable choice. also IBM developed the GPFS, tailored for high-performing computing environments. GPFS is designed to facilitate parallel processing and accomodate large-scale storage requirements. It also enables high performance computing clusters and storage systems to work seamlessly together. It provides a shared, global namespace, allowing multiple systems to access the same files concurrently.

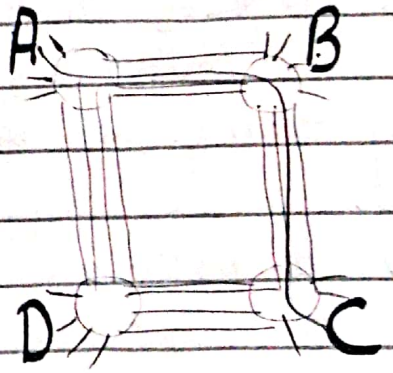
Q2 A multi-user operating systems allows multiple users to use programs that are simultaneously running on a single network server called a terminal server. Each user's applications run within their user session on the server separate from all other users

sessions. The software that makes this possible is called a terminal client. A user typically gets access to a terminal server by using an operating system like windows, mac. The user configures the remote desktop client with nessary information to establish a connection to a terminal server. The information includes the IP addresse of the terminal server. The user initiates a connection from their device to the terminal server using a configured remote desktop client. The terminal server prompts the user to enter their credentials to authenticate & verify their identity. Once authenticated, the user gains access to the desktop environment on the terminal server. Upon succesful authentication, the user interacts with the remote desktop environment as if they ~~were~~ were running locally on their device. The terminal server handles the processing and sends the visual output back to the client, creating a seamless user experience.

Q3

a. Between the switch in the upper left and right, there are 4 connections. There are 4 connections between each of the 3 other pairs of adjacent switches. This network can support up to 16 connections, $4 \times 4 = 16$ connections.

b. Between A and C means.
ABC , ADC , CDA , CBA
4 connections are passing through the switch B and another 4 through the switch D, so
Total $4+4 = 8$ total connections.



c. Yes, because for the connections between A and C two connections are routed through B and two connections through D. For the connections between B and D, two connections through A and two through C. There are 4 connections at most passing through any link.

Some of the problems related to network that I face at home are slow internet speed, connectivity issues, Wifi dead zones etc. Due to slow internet speed, there is lagging during video calls and slow loading of web pages and videos. Due to connectivity issues, devices are unable to connect to the internet. There are frequent internet drops. Error messages indicating network connectivity problems. There is no internet access in certain areas of the house. or weak / unstable Wifi signals.