1. INTRODUCTION

In Data Communication, a network consists of two or more computers that are linked in order to share resources, exchange files, or allow electronic communications. There are two very common types of networks i.e. Local Area Network (LAN), Wide Area Network (WAN). By using these networks exchange of data between a source and destination over transmission medium such as wired or wireless medium.

Data communications refers to the transmission of digital data between two or more computers and a computer network or data network is a telecommunications network that allows computers to exchange data. The physical connection between networked computing devices is established using either cable media or wireless media. The best example of computer network is the Internet.

A computer network is a set of connected computers. A network set up by connecting two or more computers and other supporting hardware devices through communication channels is called a computer network. It enables computers to communicate with each other and to share commands, data, etc., including the hardware and software resources.

Wired transmission media is media used to transfer information over a network, such as a twisted pair cable. There are various types of wired transmission media, including coaxial cables, telephone lines, and basically any information or data transmitted through a wire. Wired media defined as the physical medium through which the signals are transmitted.

File sharing is the practice of sharing or offering access to digital information or resources, including documents, multimedia (audio/video), graphics, computer programs, images. When a file is shared between two computers over a network, the file is sent directly to the other person.

A local area network (LAN) is a computer network that interconnects computers within a limited area such as a residence, school, laboratory, university campus or office building.

File sharing is the public or private sharing of computer data or space in a network with various levels of access privilege. While files can easily be shared outside a network the term file sharing almost always means sharing files in a network, even if in a small local area network. File sharing allows a number of people to use the same file or file by some combination of being able to read or view it, write to or modify it, copy it, or print it. Typically, a file sharing system has one or more administrators. Users may all have the same or may have different levels of access privilege. File sharing can also mean having an allocated amount of personal file storage in a common file system.

File sharing has been a feature of multi-user computer systems for many years. More usually, however, file sharing implies a system in which users write to as well as read files or in which users are allotted some amount of space for personal files on a common server, giving access to other users as they see fit. The latter kind of file sharing is common in schools and universities. File sharing can be viewed as part of file systems and their management.
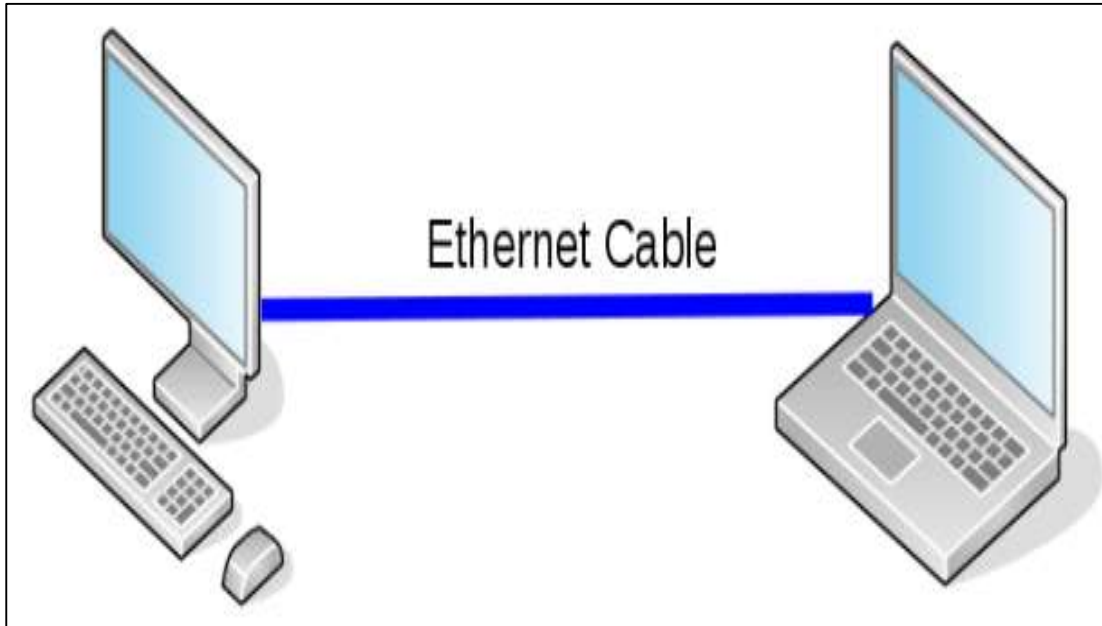
Any multi-user operating system will provide some form of file sharing. Files can also be shared in file systems distributed over different points in a network. File sharing is involved in groupware and a number of other types of applications.

2. FEATURES OF LAN

- The sharing of resources including hardware resource sharing, file sharing and software inventory data sharing. Users can share a network system software and application software.

- Data transfer and e-mail: Data and network file transfer is an important feature of modern LANs not only transmits files, data, information, but also can send voice, images.

- Improve the reliability of the computer system. LAN computers can back each other, avoiding the stand-alone system without backup failure may occur when system failures, greatly improving the reliability of the system, particularly in the industrial process control, real-time data processing and other applications, is particularly important.

- Easy to distributed processing: Use of network technology you can have more than one computer connected to a high-performance computer system (Server) through a certain algorithm, the larger global issues points to a different computer to complete.

- Using different dedicated transmission medium you can achieve the transmission rate of 1 Mb/s to 100 Mbit / sec or higher, with the further development of LAN technology is currently being developed toward higher speed (e.g. 155Mbps, 655Mbps and 1000Mbps etc.).

- LAN supports a variety of communications transmission medium such as a Ethernet cable (thin cable, thick cable, and twisted pair), fiber and wireless transmission.

- A LAN usually has low cost, installation, expansion and maintenance and LAN installation is relatively simple, good scalability.

3. SHARING FILES

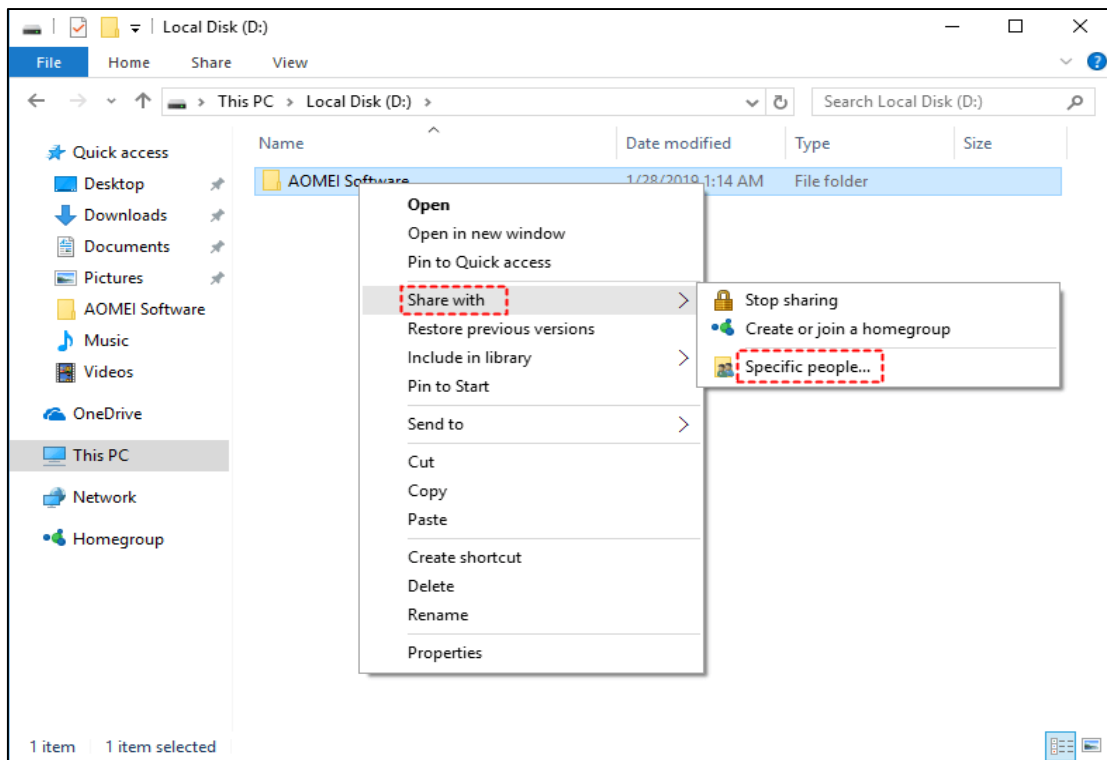**Step1:** Connect both computers to a LAN cable.

Step 2: Turn on the sharing options on both computers. Search for Control Panel and open it. Go to Network and Internet **>** Network and Sharing Center **>** Change Advanced sharing settings. Change the following options for both computers and click "Save changes".
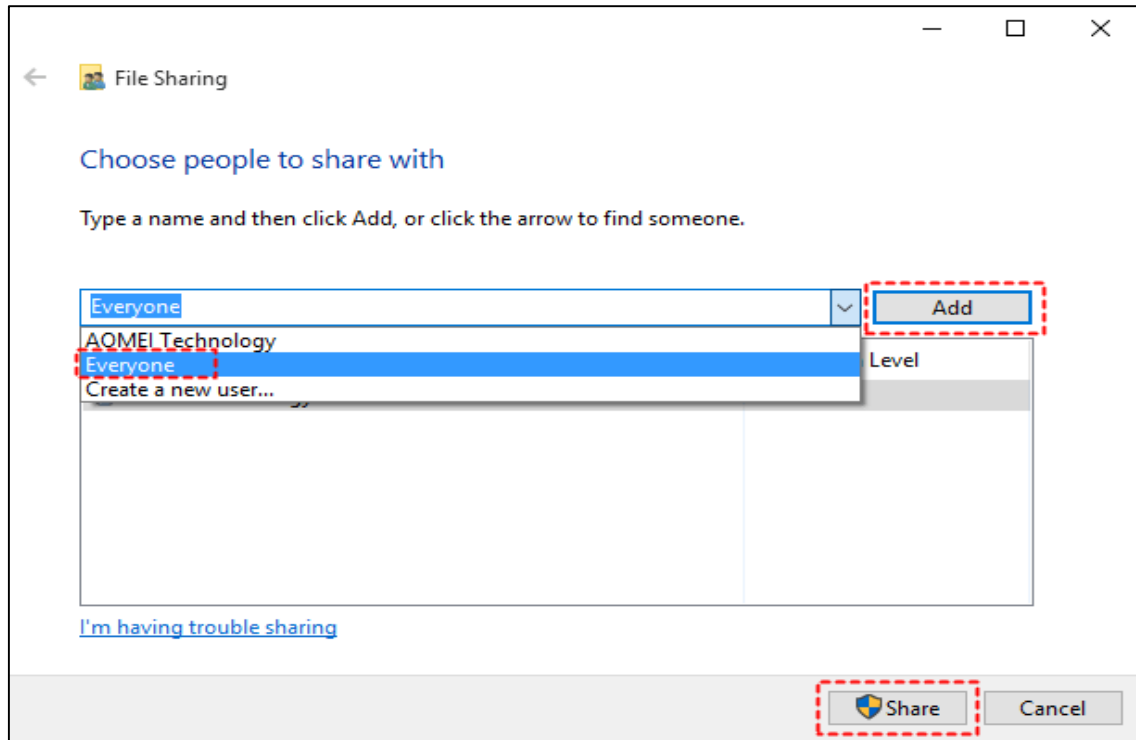
Turn on network discovery. Turn on file and printer sharing. Turn on sharing so anyone with network access can read and write files in the Public folders. Turn off password protected sharing.

Step 3: Share a folder on the source computer.

Step 4: Select the folder you want to share and right click on it. Choose "Share with" and then select "Specific people".

Step 5: In the File Sharing window, select "Everyone" from the drop-down menu, click on the "Add" button next to it and then click on the "Share" button.
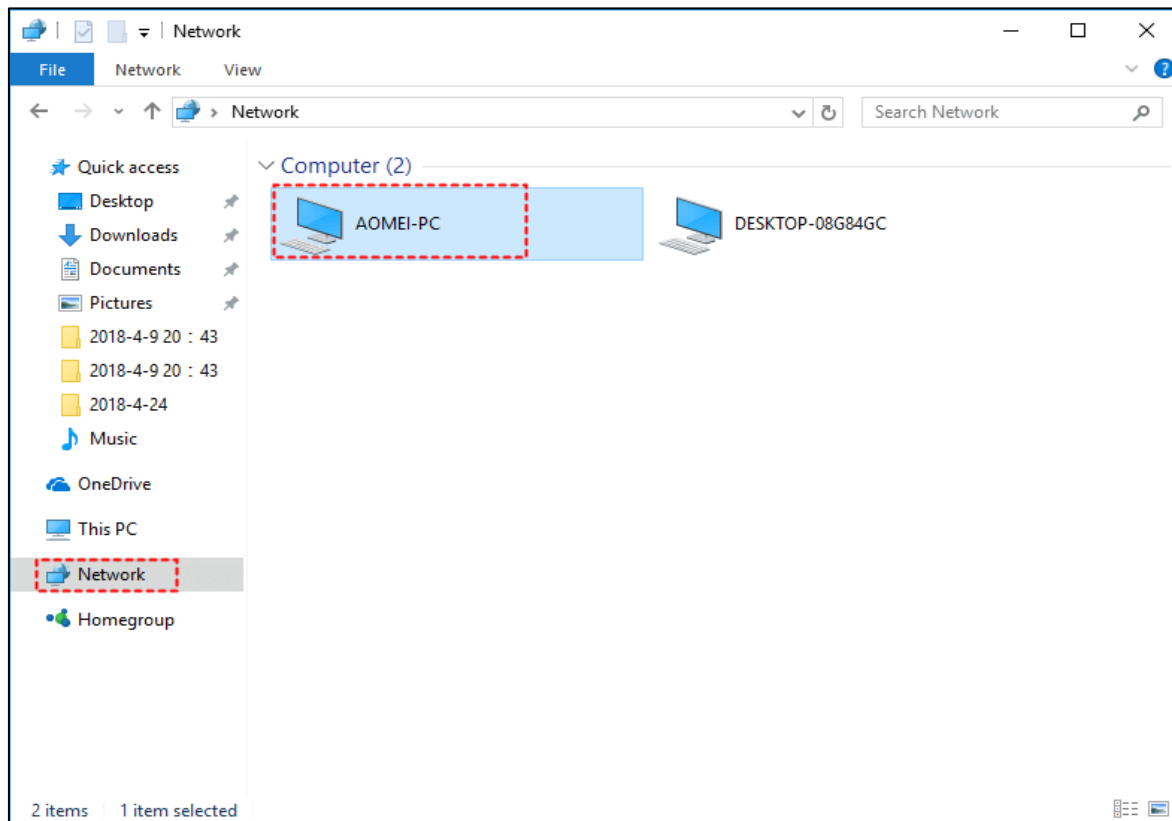

Step 6: When you see "Your folder is shared", click "Done".

Step 7: Access the shared folder on the destination computer.

Step 8: Press Win + E to open File Explorer and click Network on the left-hand panel.

Step 9: Find the source computer and double click it. Enter the source computer's password if prompted.

4. ADVANTAGES OF LAN

4.1 Comparing network speed

Modern wired Ethernet connections reach speeds of up to 5 gigabits per second, while Wi-Fi connections tend to top out at about 1 gigabit per second. Wired connections are much less prone to radio interference, so they feature fewer lost packets of data that need to be retransmitted. As a result, wired networks are preferred for many business applications where speed and reliability are critical. They're also a common choice for serious video game players, including professionals, who are concerned that rivals with speedier connections can get the upper hand on them in play.

Wired networks also have an advantage over cellular networks in that they're usually subject to much more generous bandwidth caps, if they're subject to any, meaning you can transmit more data without running into data limits that raise your bill or slow the rate at which you can access the web.

4.2 Speed

Wired networks still require some security work to be completely safe, but connecting to them usually requires physical access to a network port, meaning intruders need to enter your office to connect an unauthorized device physically. That's an added, risky step that not all hackers are willing to take, especially in a well-secured building.

4.3 Going the distance

Wired networks are almost inevitably used when it comes to connecting computer systems across long distances.

For longer distances, such as between facilities or connecting networks of different countries across land or under the ocean, wired systems such as fiber optic connections are used almost exclusively.

5. DISADVANTAGES OF LAN

5.1 Equipment portability

One Ethernet cable can provide a connection output to only one PC or device unlike to a wireless network which allows you to connect multiple devices to the single router. Another constraint of the wired technology is that the cables can be damaged easily and at the time. So you need to be careful while arranging them and protect them from the cuts caused by doors, windows or other obstacles.

5.2 Space

If you plan to expand your network, then it can become costly and can take significant amount of time to establish the network. As you will need more router or switches and Ethernet cables to expand, you may need to rewire all the devices. Also it will expand space required for network.

5.3 Mobility

If you are using mobile devices like smartphones, laptops, etc., then the wired network is not convenient to use. Ethernet network has physical limitations to reach all the areas of your home or office.

5.4 Complexity

More wires mean more mess. If you are going to use many devices for the internet access and you plan to get the Ethernet network for that, then you have to mess with the wires. If you do not manage the cable network properly, then it will be difficult to find which wire is going into which device and also such network takes space to establish a network connection.

6. CONCLUSION

In this way, we create our Data Communication and Computer Networking project "File Sharing by Using LAN" with partial fulfillment Submitted in partial fulfillment of the requirement for the diploma of computer engineering. We studied that data Communication and Networking is a special way of organizing and storing data in a computer so that it can be used efficiently. In this project we present the use of LAN. The main aim to present this project is increasing the basic general knowledge of students.

7. REFERENCES

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