EXPERIMENT NO.: 9

Aim: Perform File Transfer and Access using FTP

Theory:

Transferring files from a client computer to a server computer is called **"uploading"** and transferring from a server to a client is **"downloading".**
Requirements for using FTP
1. An FTP client like Auto FTP Manager installed on your computer
2. Certain information about the FTP server you want to connect to:

    a. The **FTP server address.** This looks a lot like the addresses you type to browse web sites.
Example : Server address is "ftp.videodesk.net".
Sometimes the server address will be given as a numeric address, like "64.185.225.87".

    b. A user name and password. Some FTP servers let you connect to them anonymously.
For anonymous connections, you do not need a user name and password. To transfer files, provide your client software (Auto FTP Manager) with the server address, user name, and password. After connecting to the FTP server, you can use Auto FTP Manager's **File Manager** to upload, download and delete files. Using the File Manager is a lot like working with Windows Explorer.
FTP and Internet Connections
FTP uses one connection for commands and the other for sending and receiving data. FTP has a standard port number on which the FTP server "listens" for connections. A port is a "logical connection point" for communicating using the Internet Protocol (IP). The standard port number used by FTP servers is 21 and is used only for sending commands. Since port 21 is used exclusively for sending commands, this port is referred to as a **command port.** For example, to get a list of folders and files present on the FTP server, the FTP Client issues a "LIST" command. The FTP server then sends a list of all folders and files back to the FTP Client. So what about the internet connection used to send and receive data? The port that is used for transferring data is referred to as a **data port.** The number of the data port will vary depending on the "mode" of the connection. (See below for Active and Passive modes.)

Active and Passive Connection Mode
The FTP server may support **Active** or **Passive** connections or both. In an Active FTP connection, the client opens a port and listens and the server actively connects to it. In a Passive FTP connection, the server opens a port and listens (passively) and the client connects to it. You must grant Auto FTP Manager access to the Internet and to choose the right type of FTP Connection Mode.

Most FTP client programs select passive connection mode by default because server administrators prefer it as a safety measure. Firewalls generally block connections that are "initiated" from the outside. Using passive mode, the FTP client (like Auto FTP Manager) is "reaching out" to the server to make the connection. The firewall will allow these outgoing connections, meaning that no special adjustments to firewall settings are required.
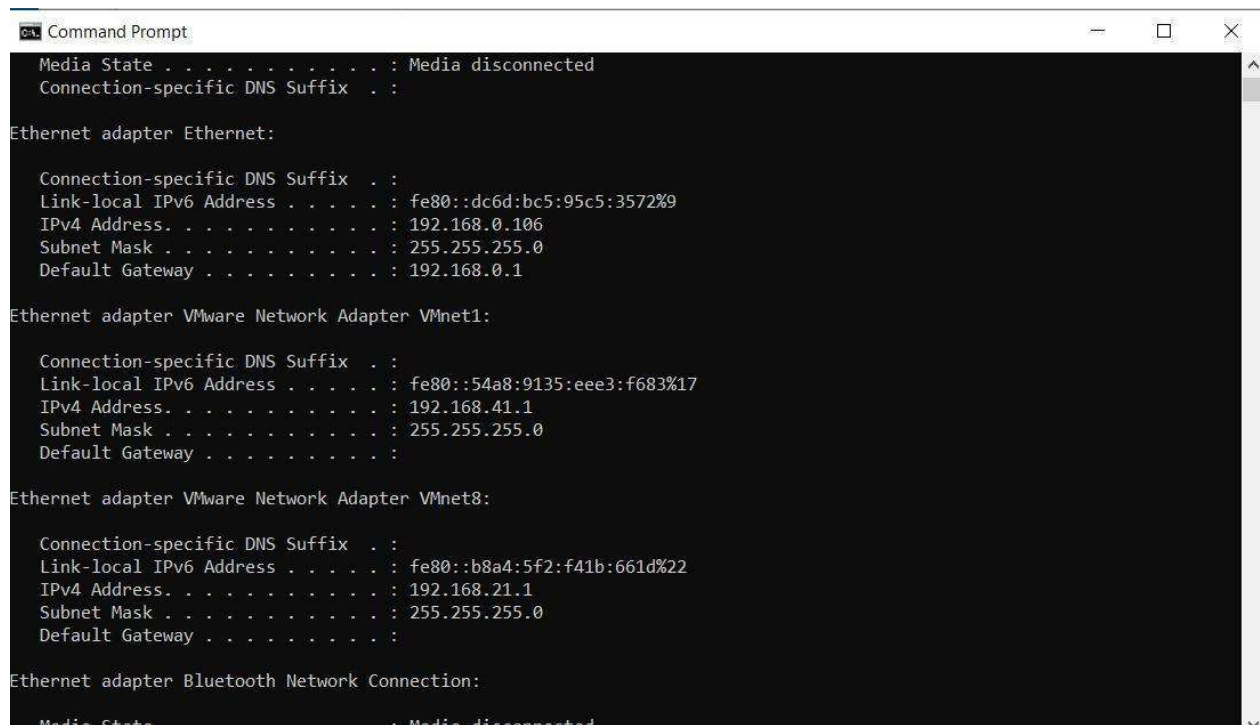
If you are connecting to the FTP server using **Active mode** of connection you must set your firewall to accept connections to the port that your FTP client will open. However, many Internet service providers block incoming connections to all ports above 1024. Active FTP servers generally use port 20 as their data port.

IMPLEMENTATION:

Implementing FTP server on <u>Windows Machine</u>:

1. **Step-1:** Open Command Prompt (**cmd**)

   Execute *"ipconfig"* command in cmd and **note down** the **local *IP address*** of your system Command: ***ipconfig***
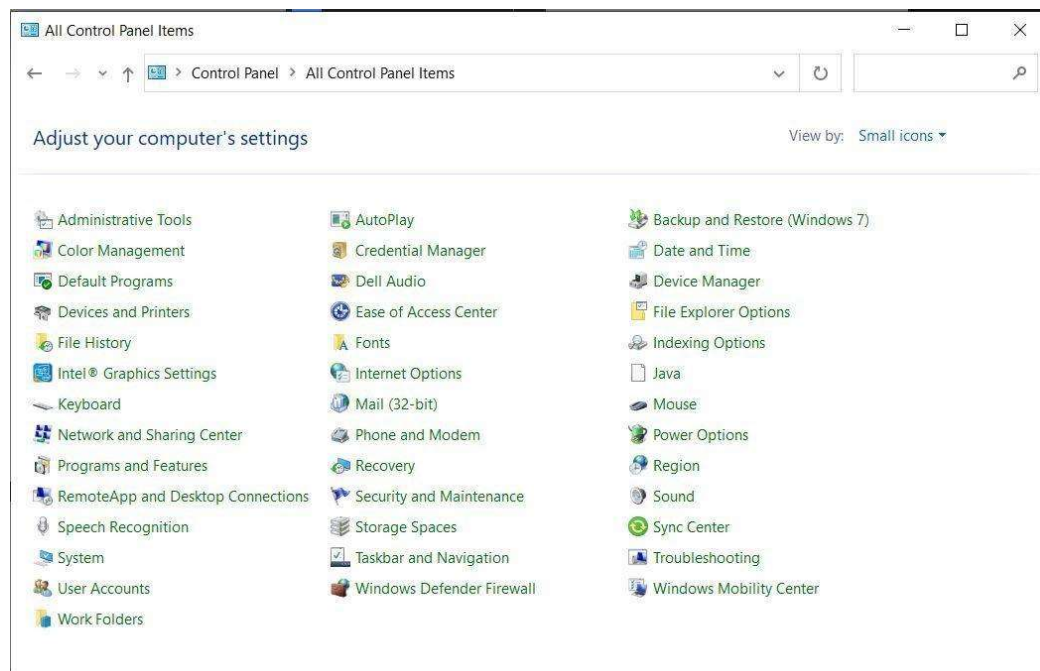
2. Step-2: Go to **Control Panel** > **Programs and Features > Turn windows features on or off**
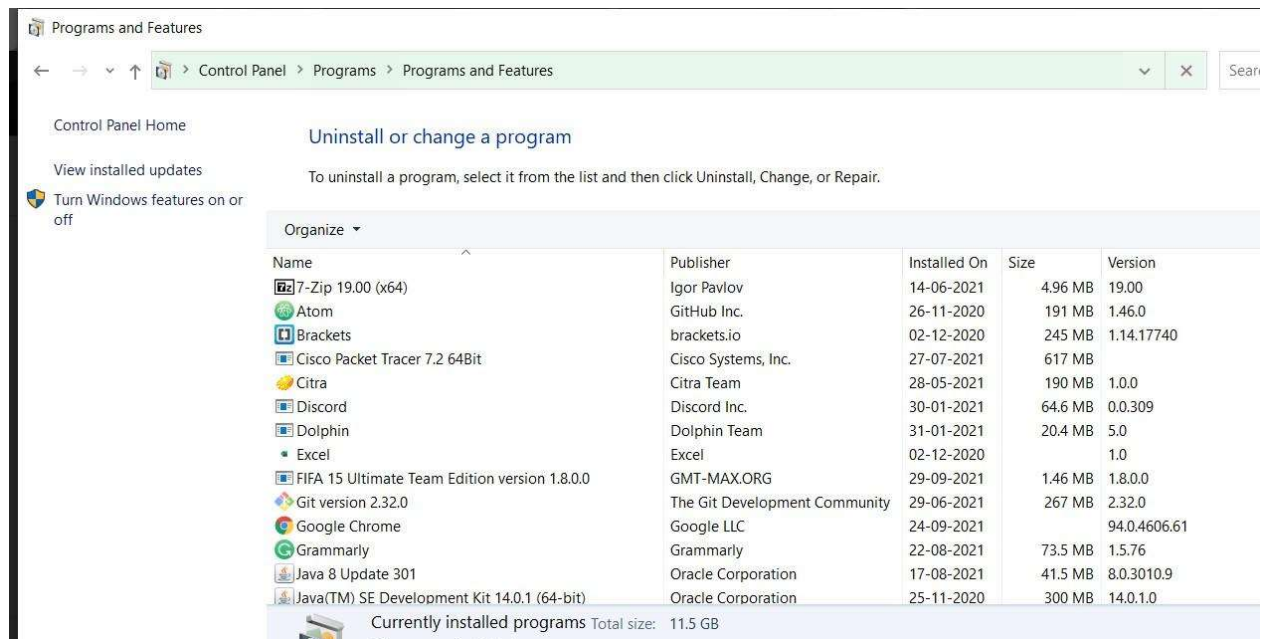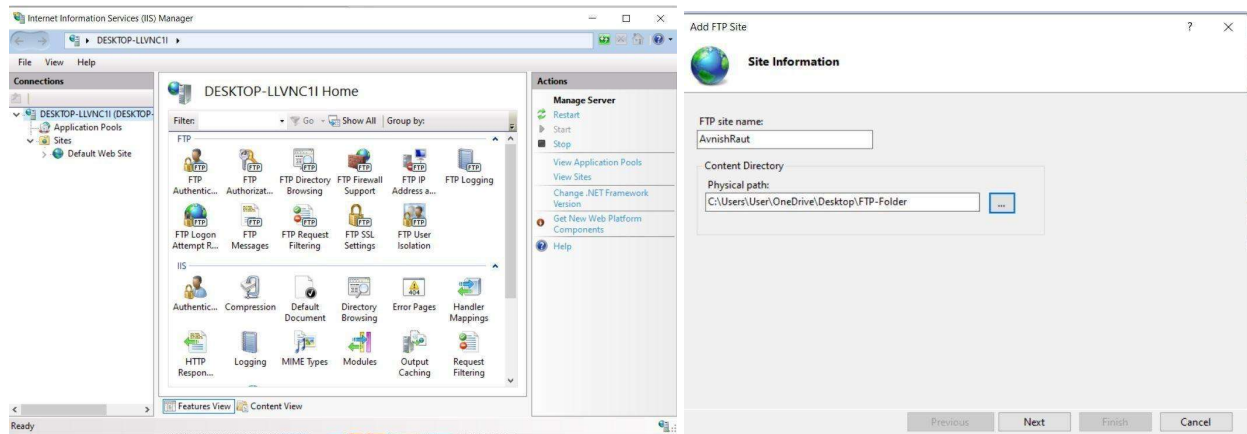

3.Step-3: Check **Internet Information Services >** Expand it and > Check *F*TP Server, Web Management Tools and World Wide Web Services > OK
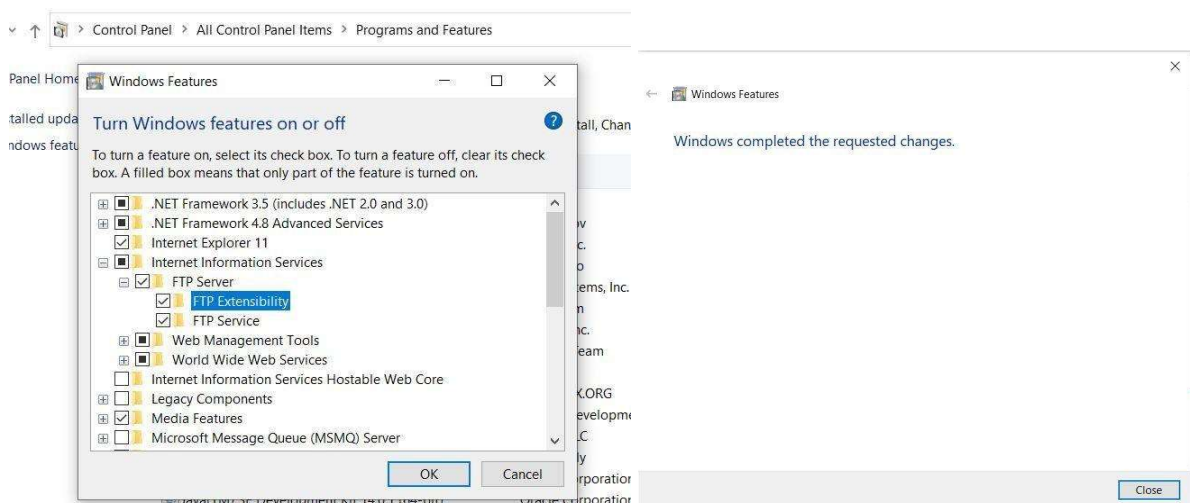
4. Step-4: Control Panel > Administrative Tools > Internet Information Services (IIS)
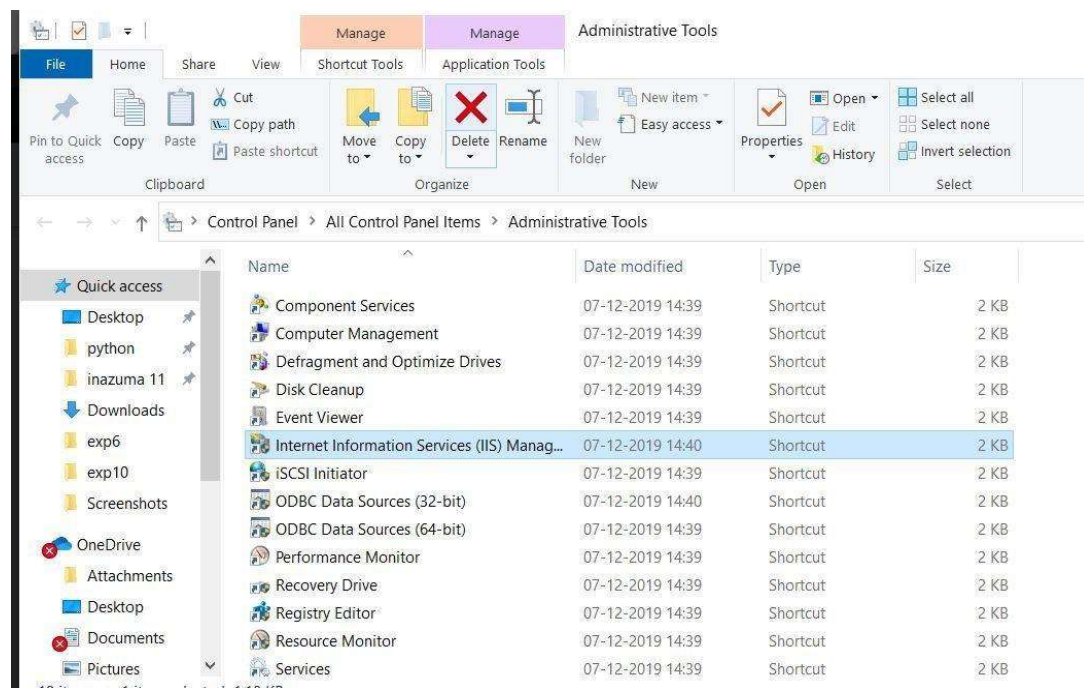
5. **Step-5:** In Left Panel **Right Click on Sites > Add FTP Site >** Pop will open; Fill **FTP Site Name** and **local FTP Folder Path**

6. **Step-6:** After filling Physical Path; **Next >** Binding and SSL popup window will appear; Fill **Local IP Address** and **Port Number i.e., 21** under Binding > Check **Start FTP Site Automatically >** Select **No SSL** under SSL > **Next**
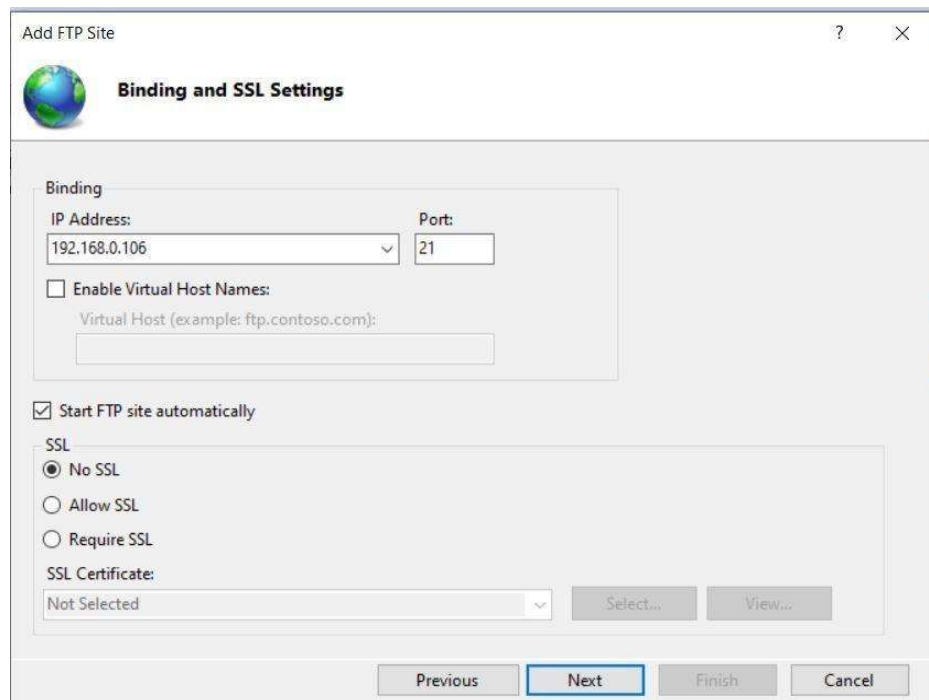
7. **Step-7:** After filling previous details; **Authentication and Authorization** pop up window will appear; Check **Basic** under Authentication **>** For Authorization select **Specified Users** > and fill current admin user **Username >** check both **Read** and **Write** permissions **> Finis**

8. **Step-8:** Open **Control Panel** > **Windows Defender Firewall >** click on **Allow and app or feature through firewall**
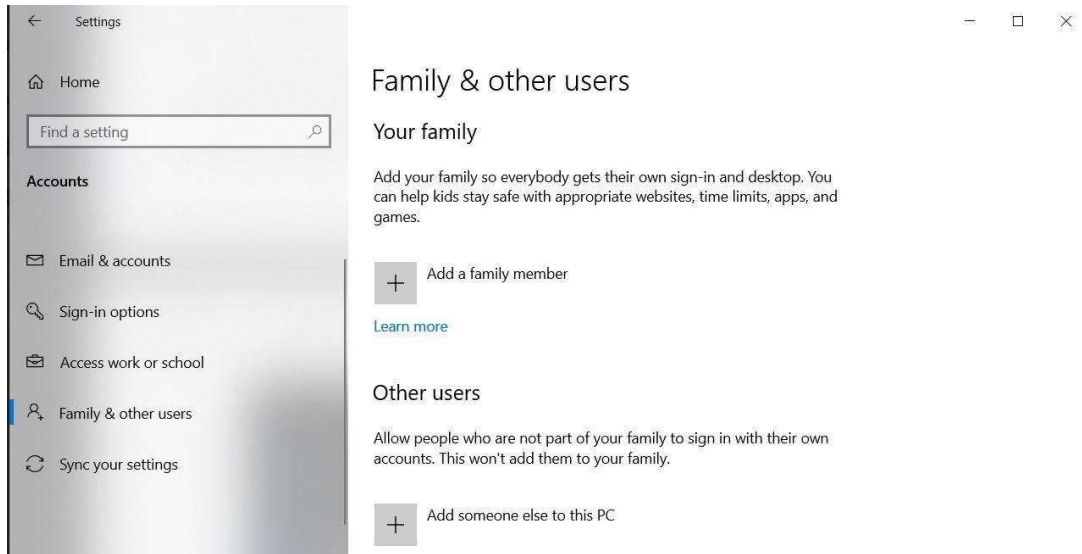
Click on **Change Settings** > **Check Private and Public** for **FTP-Server**
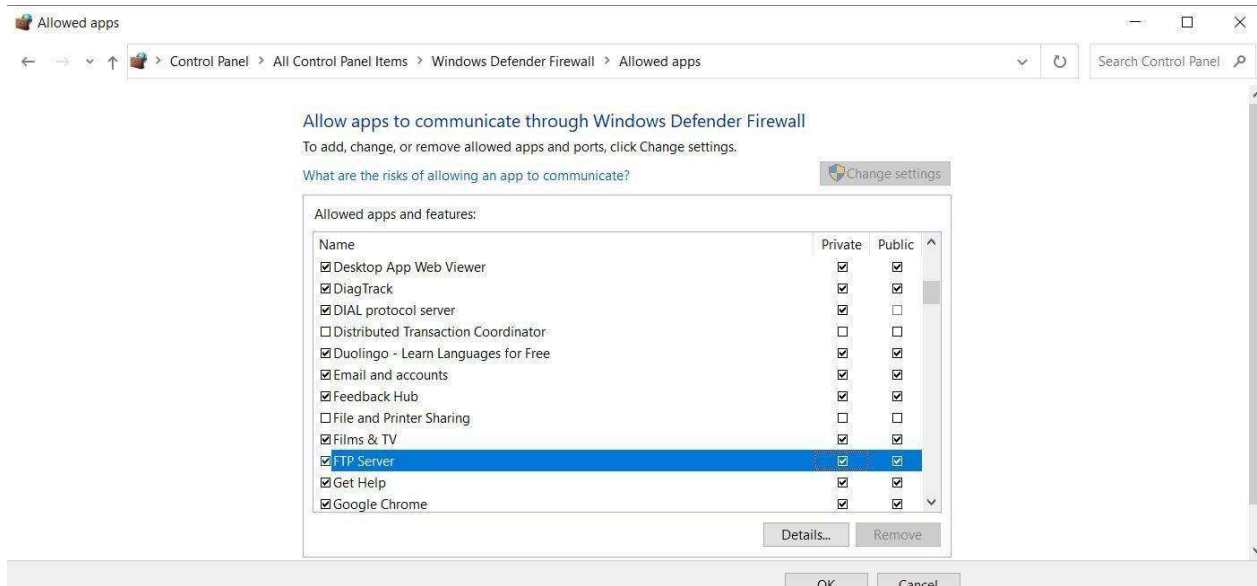
9. **Step-9: Turn OFF windows firewall** for both **Public** and **Private** networks**:**
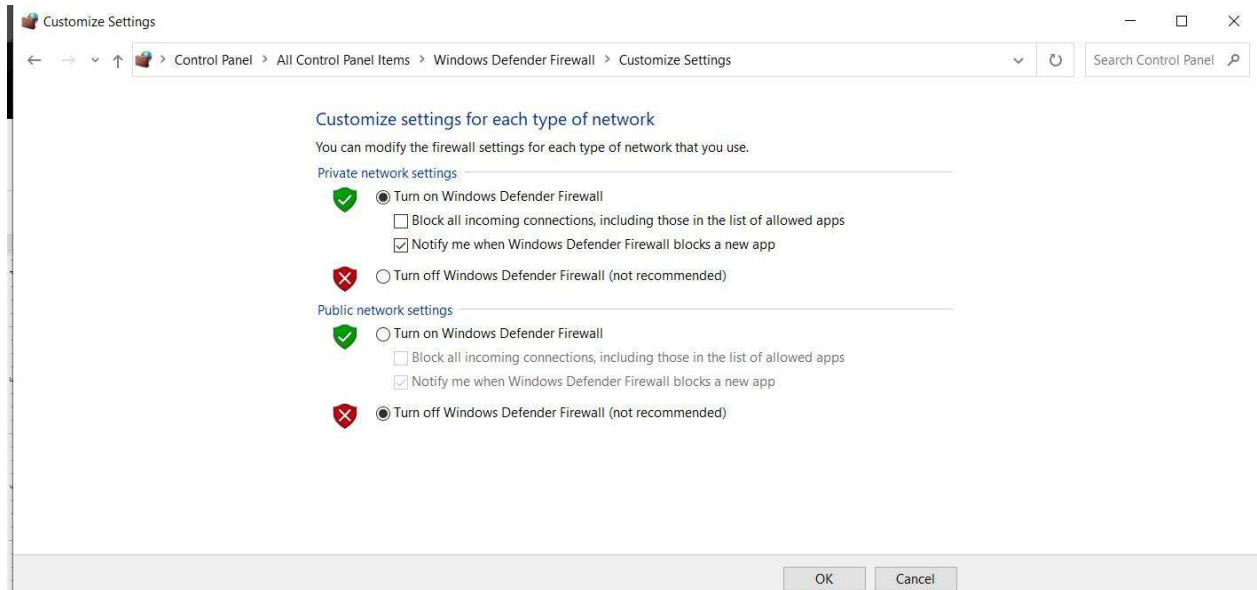
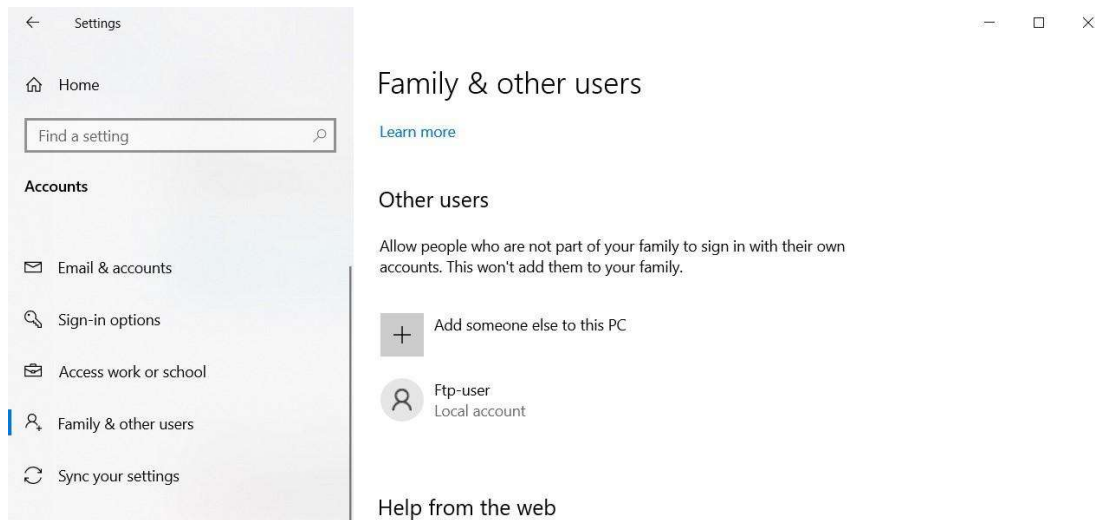**10.   Step-10:** Go to **Settings** > **Accounts >Family and Other Users** > **Add someone else to this PC:**

Another popup window will open; Click on **I don't have this person's sign-in information** > **Add a user without a Microsoft account**
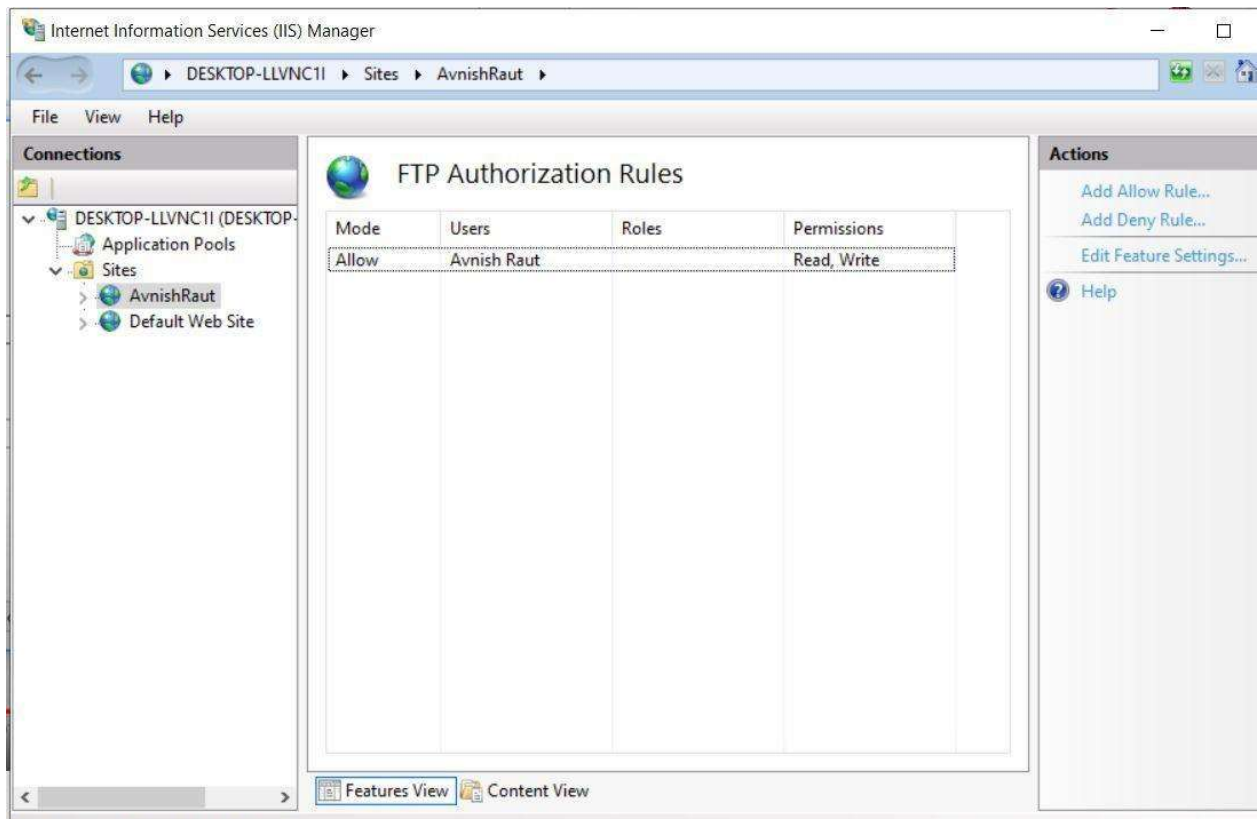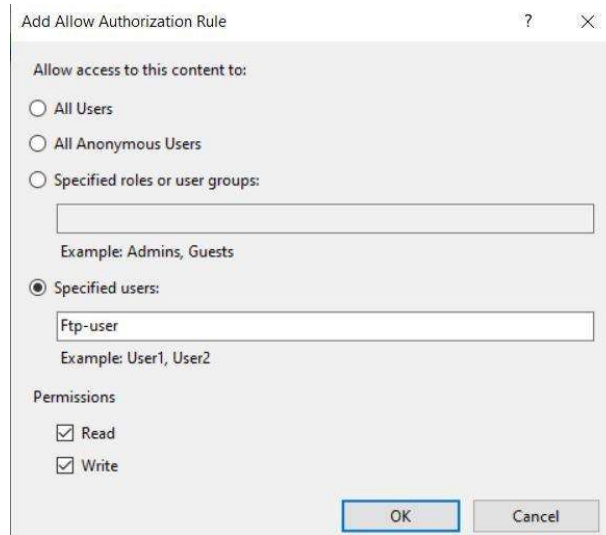
Confirm that the new FTP-User is added under other users:

Go to **Windows administrative tools > IIS >** click on FTP Site Name that we created> right click **FTPAuthorization Rules** In empty space right click > **Add Allow Rule…**

A window will appear; **Select Specified Users >** fill **FTP Username >** check both **Read** and **Write** permissions

Open the **Properties** of local FTP Folder > Switch to **Security** tab> **Edit** > **Add**   **User**
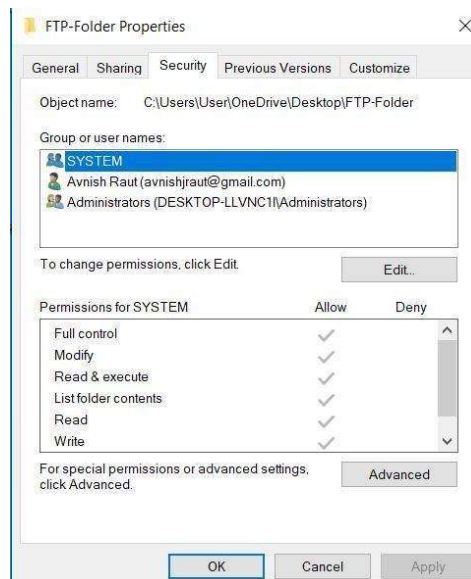
Enter the **FTP Username** under objects names to select > **Check Names** > OK

Click on **FTP-User** > **Check** *Full Control* **Allow** > **Apply** > OK

● **Accessing the ftp server from browser:**

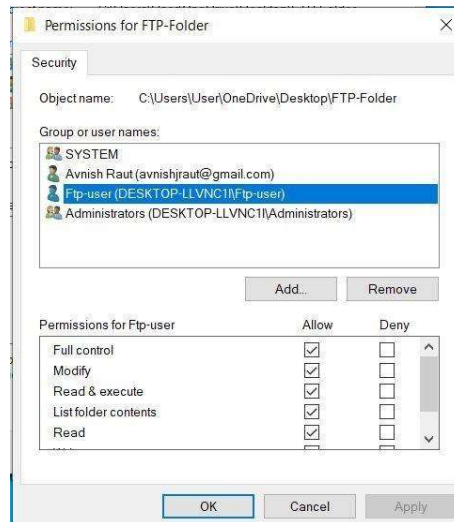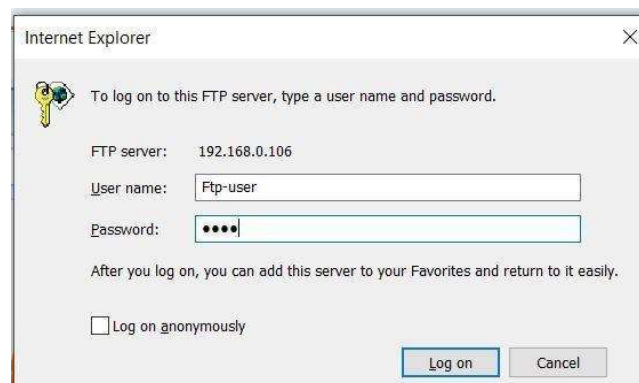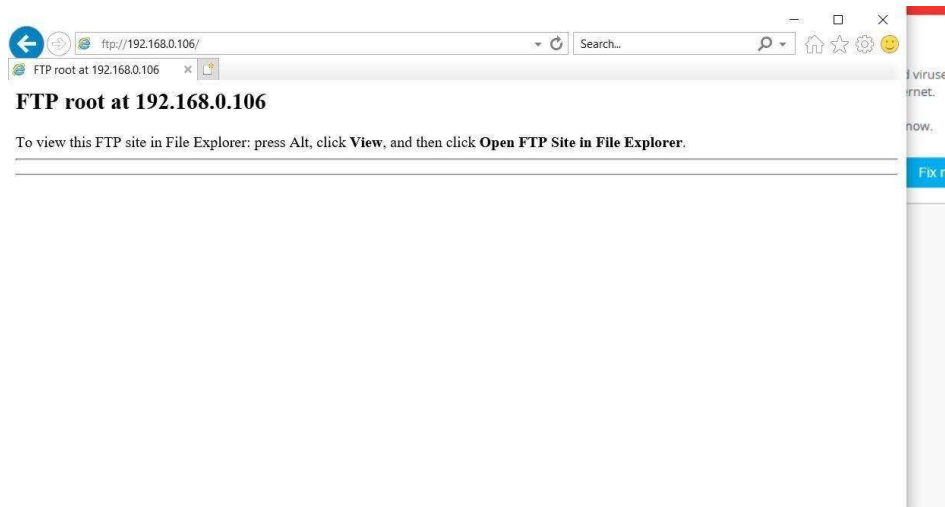As most of the modern browsers have deprecated the feature/support to access the FTP. So, access the ftp server using "*Internet Explorer*"

Open Internet Explorer > In address bar type: *ftp://192.168.0.106/* > Enter

A popup window will open; Enter your *FTP Username* and *Password* respectively > Click **Logon**

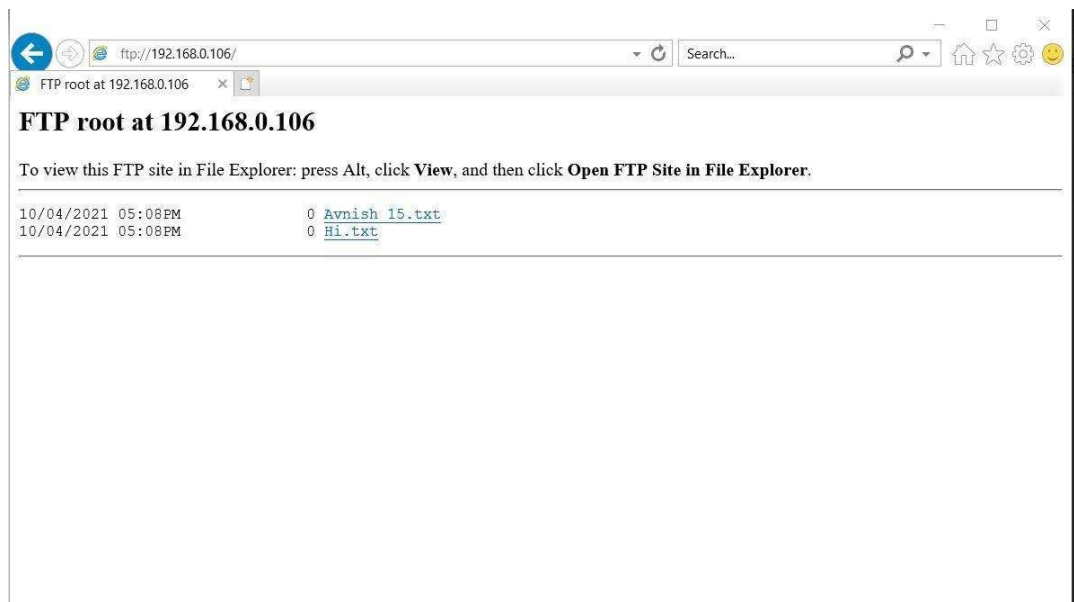As there are **no files in that folder** so it's not showing any files.

Let's **add some files in that local ftp folder:**
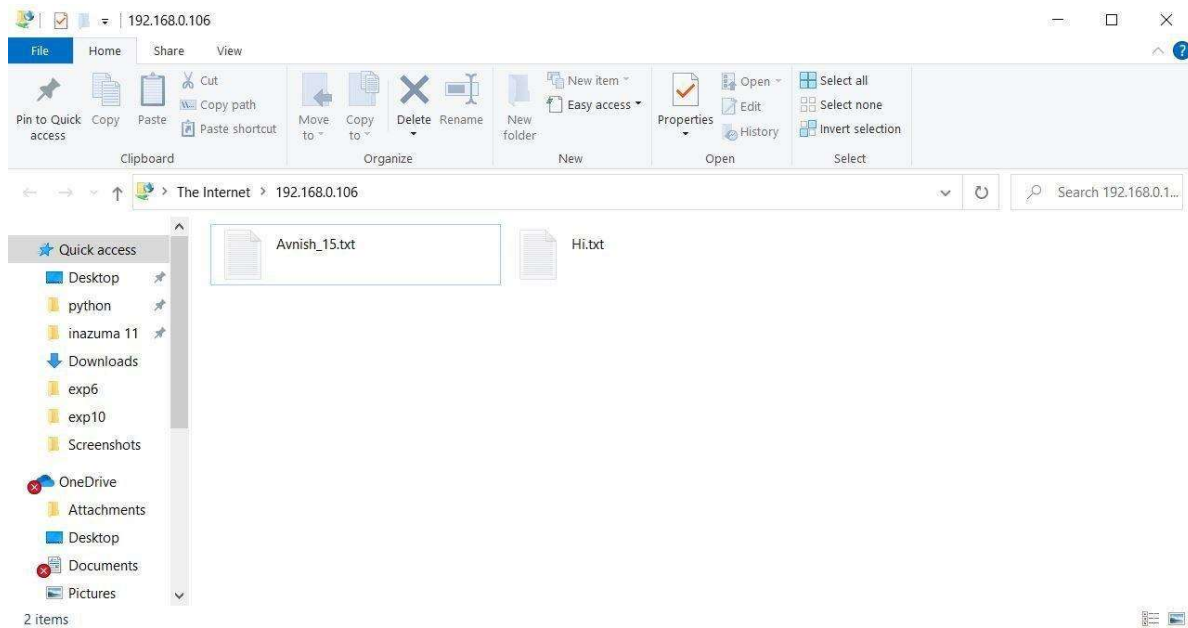
E.g: *Hi.txt*

Avnish_15.txt

After adding files to local ftp folder **refresh** the **browser page**

As we can see that files in local ftp folder are accessible over FTP

● **Accessing the ftp server from File Manager:**

Go to file manager > click in address(path) bar >put your ftp address e.g.: *ftp://192.168.0.106/* > Enter

As we can see that the FTP folder is successfully accessible over FTP through; both Internet Browser as well as the File Manager.

Conclusion:

The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and the server.

During the Anonymous access of FTP server default location of FTP data will be pub directory. However during user specific access default location of ftp data will be user directory in /home on serve.