**BN232 Advanced Network programming**

**Week 9 Laboratory**

**Laboratory Activity:**

**9.1 Implement a Simple FTP Client using Python sockets to download a file from an FTP server.**

**9.2 Create a Simple File Transfer Client-Server Application Using FTP.**

End of laboratory class, submit the file on Moodle at least 10 minutes before the end of laboratory class.

Note: The **dlpuser** and the **password rNrKYTX9g7z3RgJRmxWuGHbeu** belong to a **public FTP test server** called **DLPTest (**[**ftp.dlptest.com**](ftp://ftp.dlptest.com)**)**. The DLP test for FTP is an open FTP server provided for testing purposes.

**Total Marks** = 10 marks for 10 weeks.

**Hands-on:**

In this lab we are going demonstrate FTP for project simulation.

**9.1 Step-by-Step guide to set-up the environment:**

**Sample reference code:**

**from ftplib import FTP**

**ftp = FTP("ftp.dlptest.com")**

**ftp.login("dlpuser", "rNrKYTX9g7z3RgJRmxWuGHbeu")**

**print("Connected to FTP server")**



**ftp.retrlines("LIST")**

A computer screen shot of a computer program

AI-generated content may be incorrect.

**with open("sample.txt", "wb") as f:**

**ftp.retrbinary("RETR Test.txt", f.write)**

**print("File downloaded successfully.")**

[**ftp.quit()**](ftp://ftp.quit())

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AI-generated content may be incorrect.

Key\_checks:

* Run in terminal: python ftp\_client.py
* Check if sample.txt is downloaded locally.
  1. **Step-By-Step Illustration**

1. Install vsftpd server:

* sudo apt update
* sudo apt install vsftpd

1. Start and enable FTP service:

* sudo systemctl start vsftpd
* sudo systemctl enable vsftpd

1. Create a test user:

* sudo adduser ftpuser
* sudo passwd ftpuser
* mkdir /home/ftpuser/ftpfiles
* chmod 755 /home/ftpuser/ftpfiles

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AI-generated content may be incorrect.

1. Create a Python file: ftp\_client.py

from ftplib import FTP

# FTP server details

server = '127.0.0.1' # Localhost

username = 'ftpuser'

password = 'your\_password'

# Connect to FTP server

ftp = FTP(server)

ftp.login(user=username, passwd=password)

print("Connected to FTP Server")

def list\_files():

print("Files on server:")

ftp.retrlines('LIST')

def upload\_file(filename):

with open(filename, 'rb') as file:

ftp.storbinary(f'STOR {filename}', file)

print(f"{filename} uploaded successfully.")

def download\_file(filename):

with open(filename, 'wb') as file:

ftp.retrbinary(f'RETR {filename}', file.write)

print(f"{filename} downloaded successfully.")

while True:

print("\n1. List Files\n2. Upload File\n3. Download File\n4. Exit")

choice = input("Enter your choice: ")

if choice == '1':

list\_files()

elif choice == '2':

fname = input("Enter file name to upload: ")

upload\_file(fname)

elif choice == '3':

fname = input("Enter file name to download: ")

download\_file(fname)

elif choice == '4':

print("Exiting FTP client")

break

else:

print("Invalid choice")

[ftp.quit()](ftp://ftp.quit())

1. Create a sample file to upload and place it in the same directory as ftp\_client:

***echo "This is a test file for FTP demo." > sample.txt***

1. Finally, execute the client using: ***python3 ftp\_client.py***

Output:

Following observations should be recorded:

* List files → should show server files
* Upload sample.txt → file should appear in server directory /home/ftpuser/ftpfiles
* Download the same file → should save locally

**References**

[1] <https://docs.python.org/3/library/ftplib.html>