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COMPUTER NETWORKS LAB

FILE TRANSFER PROTOCOL IMPLEMENTATION

Client:

```
import socket import os
class Client:     def
__init__(self):        self.s =
socket.socket(socket.AF_INET,socket.SOCK_STREAM)
self.connect_to_server()

   def connect_to_server(self):        self.target_ip =
input('Enter ip --> ')        self.target_port = input('Enter
port --> ')
self.s.connect((self.target_ip,int(self.target_port)))
self.main()
   def reconnect(self):
      self.s =
socket.socket(socket.AF_INET,socket.SOCK_STREAM)
self.s.connect((self.target_ip,int(self.target_port)))

   def main(self):        while 1:            file_name = input('Enter file name on server
--> ')           self.s.send(file_name.encode())
```

```
        confirmation = self.s.recv(1024)        if confirmation.decode() ==
"file-doesn't-exist":            print("File doesn't exist on server.")

            self.s.shutdown(socket.SHUT_RDWR)
self.s.close()            self.reconnect()

        else:                write_name = 'from_server '+file_name
if os.path.exists(write_name): os.remove(write_name)

            with open(write_name,'wb') as file:                while 1:
data = self.s.recv(1024)

                if not data:                    break

file.write(data)            print(file_name,'successfully downloaded.')

            self.s.shutdown(socket.SHUT_RDWR)            self.s.close()
            self.reconnect()            client =
```

Client() Server:

```
import socket

import threading

import os class

Server:
```

```
    def __init__(self):        self.s =
socket.socket(socket.AF_INET,socket.SOCK_STREAM)
self.accept_connections()

    def accept_connections(self):        ip =
socket.gethostbyname(socket.gethostname())        port =
int(input('Enter desired port --> '))

        self.s.bind((ip,port))        self.s.listen(100)

        print('Running on IP: '+ip)        print('Running on port:
'+str(port))

        while 1:            c, addr = self.s.accept()
print(c)



threading.Thread(target=self.handle_client,args=(c,addr,)).start()

    def handle_client(self,c,addr):        data =
c.recv(1024).decode()
            if not os.path.exists(data):

            c.send("file-doesn't-exist".encode())

        else:
```

```
        c.send("file-exists".encode())
print('Sending',data)          if data != '':
file = open(data,'rb')              data =
file.read(1024)              while data:
            c.send(data)                data =
file.read(1024)

            c.shutdown(socket.SHUT_RDWR)
            c.close()             server = Server()
```

Output:

```
Enter desired port --> 1540
Running on IP: 127.0.1.1
Running on port: 1540
<socket.socket fd=4, family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM,
proto=0, laddr=('127.0.1.1', 1540), raddr=('127.0.0.1', 46268)>
Sending spriha.txt
<socket.socket fd=5, family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM,
proto=0, laddr=('127.0.1.1', 1540), raddr=('127.0.0.1', 48132)>
```

```
Enter ip --> 127.0.1.1
Enter port --> 1540
Enter file name on server --> spriha.txt
spriha.txt successfully downloaded.
Enter file name on server -->
```