CN Lab test - 2

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Q 1) Consider a student requesting for document from a professor and professor sending the file to student. Professor and student are two different nodes. Write a program to establish connection using TCP protocol

Soln. tcp_student.py

```
import socket, AF_INIET, SOCK_STREAM
[redacted]
[redacted]

def main():
    s = socket(AF_INIET, SOCK_STREAM)
    print("TCP SOCKET : STUDENT")

    HEADERSIZE = 10
    [redacted] ip = [redacted] '192.168.6.107'
    port = [redacted] 1029
    s.connect((ip,port))
    print("Client connected to Server")
    request = input("Enter filename : ")
    s.send(bytes(request, 'utf-8'))
    print(f"Request for contents of file : {request} sent.")
    new_msg = True
    [redacted] full msg = ''
```


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```
while True:
        response = s.recv(50)
        response = response.decode('utf-8')
        if new_msg:
                msg_len = int(response[:HEADERSIZE])
                new_msg = False
        fullmsg += response
        if len(fullmsg) - HEADERSIZE == msg_len:
                print("-"*10)
                print(f"Contents of file {request}:")
                print(fullmsg[HEADERSIZE:])
                print("-"*10)
                print("Content Retrieved")
                s.close()
                print("Connection Terminated.")
                break
```


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TCP_professor.py

```
from socket import socket, AF_INET, SOCK_STREAM

s=socket(AF_INET, SOCK_STREAM)
print("TCP SOCKET: PROFESSOR")
HEADERSIZE = 10
ip= '192.168.0.107'
port= 1029
s.bind(ip,port))
s.listen(4)
print(f"Server is up, listening at port: {port}")
while True:
    client_socket, clientaddr = s.accept()
    print(f"Client with {clientaddr} connected.")
    request=clientsocket.recv(1024)
    request=request.decode('utf-8')
    print(f"Request for file content of :{request} Recieved")
    try:
        with open(request,"r") as fd:
            contents = fd.read
            print("Request Processed")

    except:
        contents = "Request not fulfilled. No file exist-s"
        print("Request cannot be fulfilled.
```


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```
msg = f"{len(contents):<{HEADERSIZE}}" + contents
clientsocket.send(bytes(msg,'utf-8'))
print(f"Response sent to {clientaddr}")
print("-"*10)
```


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