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CN Lab ~~test~~ -2

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

Soln. tcp_student.py

```
import socket, AF_INET, SOCK_STREAM

def main():
    s = socket(AF_INET, SOCK_STREAM)
    print("TCP SOCKET : STUDENT")
    HEADERSIZE = 10
    ip = '43.247.156.76'
    port = 1234
    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
    fullmsg = ''
```

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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 Recieved ")
                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")
 HEADESIZE = 10
 ip = '43.247.156.76'
  port = 1234
   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
                        exists"
             print(" Request cannot be fulfilled.
```

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```
msg = f"{len(contents):<{HEADER SIZE}}" + contents
 client socket.send(bytes(msg,'utf-8'))
   print(f"Response sent to {client addr}")
    print("-"*10)
```

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