LAB-4

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1901CS75

- **Server program in Python:**

client.py | server.py | sample1.txt

```
1  from socket import *
2
3  def startServer():
4      #create Server socket
5      serverPort = 8080
6      serverSocket = socket(AF_INET,SOCK_DGRAM)
7      serverSocket.bind(('', serverPort))
8
9      print("The server is ready to receive on PORT",serverPort)
10     while 1:
11         #receive message from client and get the filename
12         message, clientaddr = serverSocket.recvfrom(1024)
13         filename= message.decode().strip()
14         print("Filename received from client: ", filename)
15         print("Client IP: ", clientaddr)
16
17         try:
18             #trying to open the file
19             fin = open('./' + filename)
20
21             #store the file content line by line in Lines
22             Lines = fin.readlines()
23
24             #send one line at a time to the client
25             for line in Lines:
26                 serverSocket.sendto(line.encode(), clientaddr)
27             fin.close()
28             print("File contents successfully sent to client")
29
30         except FileNotFoundError:
31             errmsg = "404"
32             errmsg = errmsg.encode()
33             #send error message if file not found
34             serverSocket.sendto(errmsg, clientaddr)
35             print("Error: File not found")
36
37 if __name__ == '__main__':
38     startServer()
39
```

- **Client program in Python:**

client.py | server.py | sample1.txt

```
from socket import *

def startClient():
    #create client socket
    serverPort = 8080
    serverName= '127.0.0.1'
    clientSocket = socket(AF_INET, SOCK_DGRAM)
    clientSocket.connect((serverName, serverPort))

    #Input filename to fetch contents
    filename = input("Enter the name of the file to get its content:\n")
    filename = filename.encode()

    #send filename to server socket
    clientSocket.sendto(filename, (serverName, serverPort))

    #contents received from server
    linecontent, serveraddr = clientSocket.recvfrom(1024)
    print("Server address: ", serveraddr)
    linecontent = linecontent.decode().strip()

    #check the first response from server to detect errors
    if linecontent == '404':
        print('Error: File not found')
    elif linecontent == 'START':
        #print the contents line by line until FINISH is encountered
        print("Contents of the file:")
        print(linecontent)
        while linecontent != 'FINISH':
            linecontent, serveraddr = clientSocket.recvfrom(1024)
            linecontent = linecontent.decode().strip()
            print(linecontent)
    else:
        print("Error: First line is not START")
    clientSocket.close()

if __name__ == '__main__':
    startClient()
```

- **Sample1.txt file:**

client.py | server.py | sample1.txt

```
START
PACKET
SOCKET PROGRAMMING
TCP
UDP
CLIENT
SERVER
FINISH
```

- **Running Server and client with valid filename:**

  Client side terminal:

```
[03/14/22]seed@VM:~/.../Lab4$ python3.5 client.py
Enter the name of the file to get its content:
sample1.txt
Server address:  ('127.0.0.1', 8080)
Contents of the file:
START
PACKET
SOCKET PROGRAMMING
TCP
UDP
CLIENT
SERVER
FINISH
```

  Server side terminal:

```
[03/14/22]seed@VM:~/.../Lab4$ python3.5 server.py
The server is ready to receive on PORT 8080
Filename received from client:  sample1.txt
Client IP:  ('127.0.0.1', 59588)
File contents successfully sent to client
```

- **Running Server and client with invalid filename:**

  Client side terminal:

```
[03/14/22]seed@VM:~/.../Lab4$ python3.5 client.py
Enter the name of the file to get its content:
xyz
Server address:  ('127.0.0.1', 8080)
Error: File not found
```

  Server side terminal:

```
Filename received from client:  xyz
Client IP:  ('127.0.0.1', 56767)
Error: File not found
```