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Proxy server

Networks project

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# **Project implementation:**

from socket import \*

import sys

if len(sys.argv ) <= 1:

 print ('Usage : "python ProxyServer.py server\_ip"\n[server\_ip : It is the IP Address Of Proxy Server')

 sys.exit(2)

# Create a server socket, bind it to a port and start listening

tcpSerSock = socket(AF\_INET, SOCK\_STREAM)

tcpSerSock.bind(('', 8888))

tcpSerSock.listen(100)

while 1:

 # Strat receiving data from the client

 print ('Ready to serve...')

 tcpCliSock, addr = tcpSerSock.accept()

 print ('Received a connection from:', addr)

 message = tcpCliSock.recv(1024).decode(encoding='utf8')

 print (message)

 # Extract the filename from the given message

 print (message.split()[1])

 filename = message.split()[1].partition("/")[2]

 print (filename)

 fileExist = "false"

 filetouse = "/" + filename

 print (filetouse)

 try:

  # Check wether the file exist in the cache

  f = open(filetouse[1:], "r")

  outputdata = f.readlines()

  fileExist = "true"

  # ProxyServer finds a cache hit and generates a response message

  tcpCliSock.send("HTTP/1.0 200 OK\r\n")

  tcpCliSock.send("Content-Type:text/html\r\n")

  for i in range(0, len(outputdata)):

   tcpCliSock.send(outputdata[i])

   print ('Read from cache')

 # Error handling for file not found in cache

 except IOError:

  if fileExist == "false":

   # Create a socket on the proxyserver

   c = socket(AF\_INET, SOCK\_STREAM)

   hostn = filename.replace("www.","",1)

   print( hostn )

   try:

    # Connect to the socket to port 80

    c.connect((hostn, 80))

    # Create a temporary file on this socket and ask port 80 for the file requested by the client

    fileobj = c.makefile('r', 0)

    fileobj.write("GET "+"http://" + filename + " HTTP/1.0\n\n")

    # Read the response into buffer

    buff = fileobj.readlines()

    # Create a new file in the cache for the requested file. Also send the response in the buffer to client socket and the corresponding file in the cache

    tmpFile = open("./" + filename,"wb")

    for line in buff:

     tmpFile.write(line);

     tcpCliSock.send(line);

   except:

    print ("Illegal request" )

  else:

   # HTTP response message for file not found

   tcpCliSock.send("HTTP/1.0 404 sendErrorErrorError\r\n")

   tcpCliSock.send("Content-Type:text/html\r\n")

   tcpCliSock.send("\r\n")

 # Close the client and the server sockets

 tcpCliSock.close()

tcpSerSock.close()

A screenshot of a computer program

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Figure code 1

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Figure code 2

# **Test scenarios:**

We have runned the code in terminal (python proxy.py tochid) and then we wrote in the browser localhost:8888/www.facebook.com

8888 is defined in the code as port number.

Facebook or mail.yahoo or gmail.

And these runs created some file in the folder in our PC.

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Figure Files

When we close the server and request the file as shown above it appeared.

When we deleted these files and closed the server these websites did not show up.

A screenshot of a computer

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Figure delete files

And we changed the port number it did not show up.

A screenshot of a computer

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Figure Change port number

# **Screenshots of the code and test runs**

When we request a website, it opens.A screenshot of a computer

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Figure Request Facebook

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Figure Request Yahoo

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Figure Request Gmail