PYTHON PROXY SERVER CCPS706

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WEB PROXY SERVER

- Web proxy server acts as a gateway between the user and the internet.
- At the core of it is an another device that has its own IP address
- Proxy server catches all the responses from the web server
- A proxy server can also change the IP address

PROXY SERVER PYTHON CODE PART-I

```
from socket import *
import sys
import string

#port = 8888
#max_connections = 1

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(("192.168.56.1",80))
tcpSerSock.listen(10)

while 1:

  # Start receiving data from the client
  print ('Ready to serve...')

  #print (addr)
  tcpCliSock, addr = tcpSerSock.accept()
  print ('Received a connection from:', addr)

  message = tcpCliSock.recv(1024)
  print ("Message", message)

  # Extract the filename from the given message
  print ("Message 1", message.decode().split()[1])
  filename = message.decode().split()[1].partition("/")[2]
  print ("File Name is" ,filename)
```

CODE CONTINUED PART-2

```
fileExist = "false"
filetouse = "/" + filename.replace("/","")

print ("File to Use is ", filetouse)

try:
  # Check whether 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
  resp = ""
  for s in outputdata:
    resp += s

  tcpCliSock.send(resp)

  print ('Read from cache')

# Error handling for file not found in cache
except IOError:
  if fileExist == "false":
    # Create a socket on the proxyserver
    print("hi")
    c = socket(AF_INET, SOCK_STREAM)
    hostn = filename.split('/')[0].replace("www.","",1)
    print ("Host n", hostn)
    try:
      # Connect to the socket to port 80
      print("inside try")
      c.connect((hostn, 80))
```

CODE CONTINUED PART-3

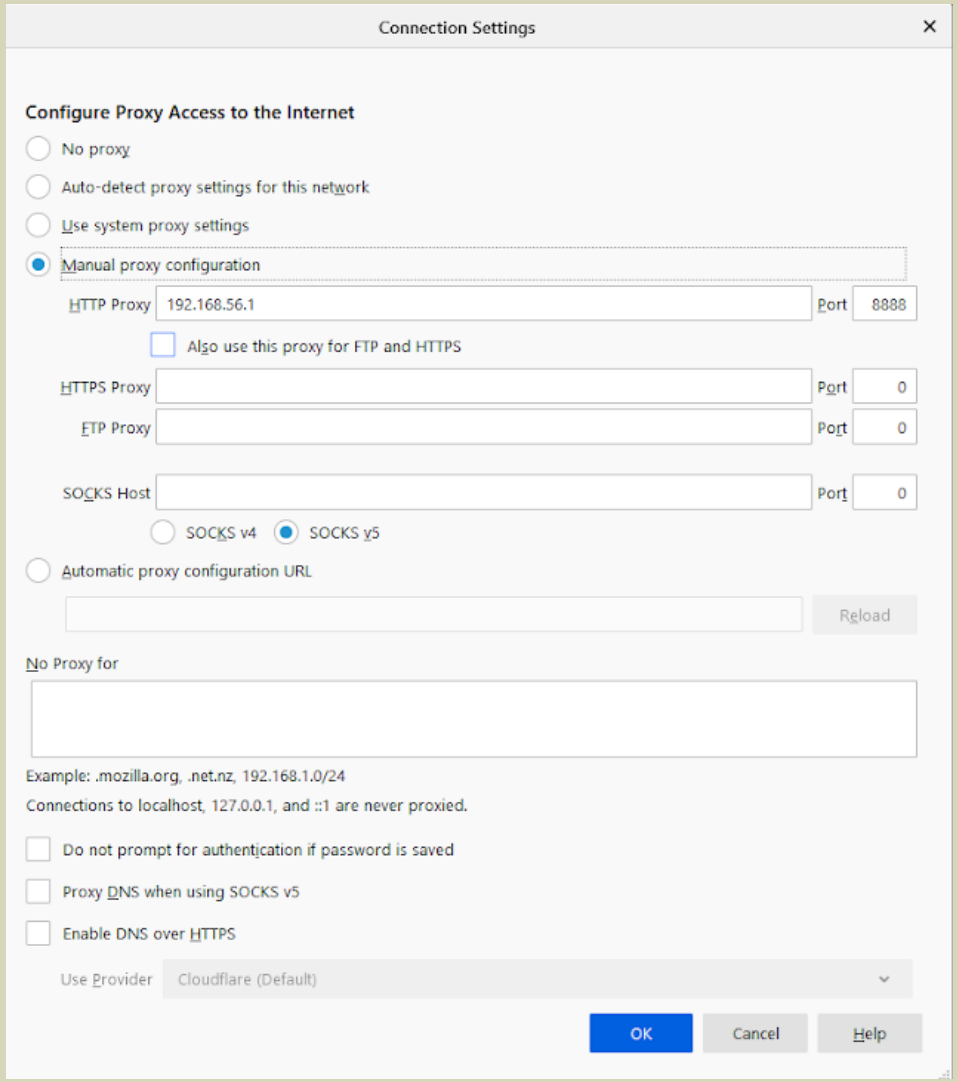
```
# Create a temporary file on this socket and ask port 80 for the file requested by the client
        print("connected")
        fileobj = c.makefile('rb', 0)
        #fileobj = io.BytesIO(fileobj)
        #fileobj = open(fileobj,'w')
        fileobj.write("GET"+"http://" + filename + "HTTP/1.0\n\n")

        # Show what request was made
        print ("GET "+"http://" + filename + " HTTP/1.0")

        # Read the response into buffer
        resp = c.recv(4096)
        response = ""
        while resp:
          response += resp
          resp = c.recv(4096)

        # 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
        if(filename[-1:] == '/'):
          filename = filename[:-1]

        tmpFile = open("./" + filename.replace("/","") ,"wb")
        tmpFile.write(response)
        tmpFile.close()

        tcpCliSock.send(response)
      except Exception as e:
        print (str(e))
        print ("Illegal request")
    else:
      # HTTP response message for file not found
      pass

# Close the client and the server sockets
tcpCliSock.close()
```

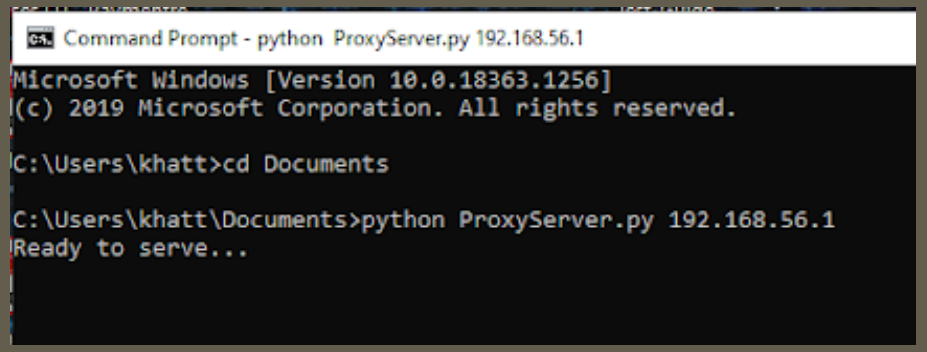
WORKING OF A PROXY SERVER

- Proxy server is a computer that have its own IP address
- When we send a request on a browser it goes through the proxy server first
- When data is transferred the server works as a firewall
- Here in this basic python program when the server is running through cmd you can listen to the fetched web pages.

CONFIGURING MOZILLA FOR PROXY

WE NEED TO CHANGE IT TO MANUAL NOT THE OTHER FOUR OPTIONS TO SET CUSTOM PROXY SETTINGS. AS NO PROXY WILL CHOSE LOCALHOST. AUTO-DETECT WILL USE WPAD TO DETECT WHICH WOULD NOT WORK IN THIS CASE AND SYSTEM PROXY SETTING WILL USE THE PROXY THAT IS CONGIGURED ON YOUR SYSTEM IF NONE THEN IT USES LOCALHOST.

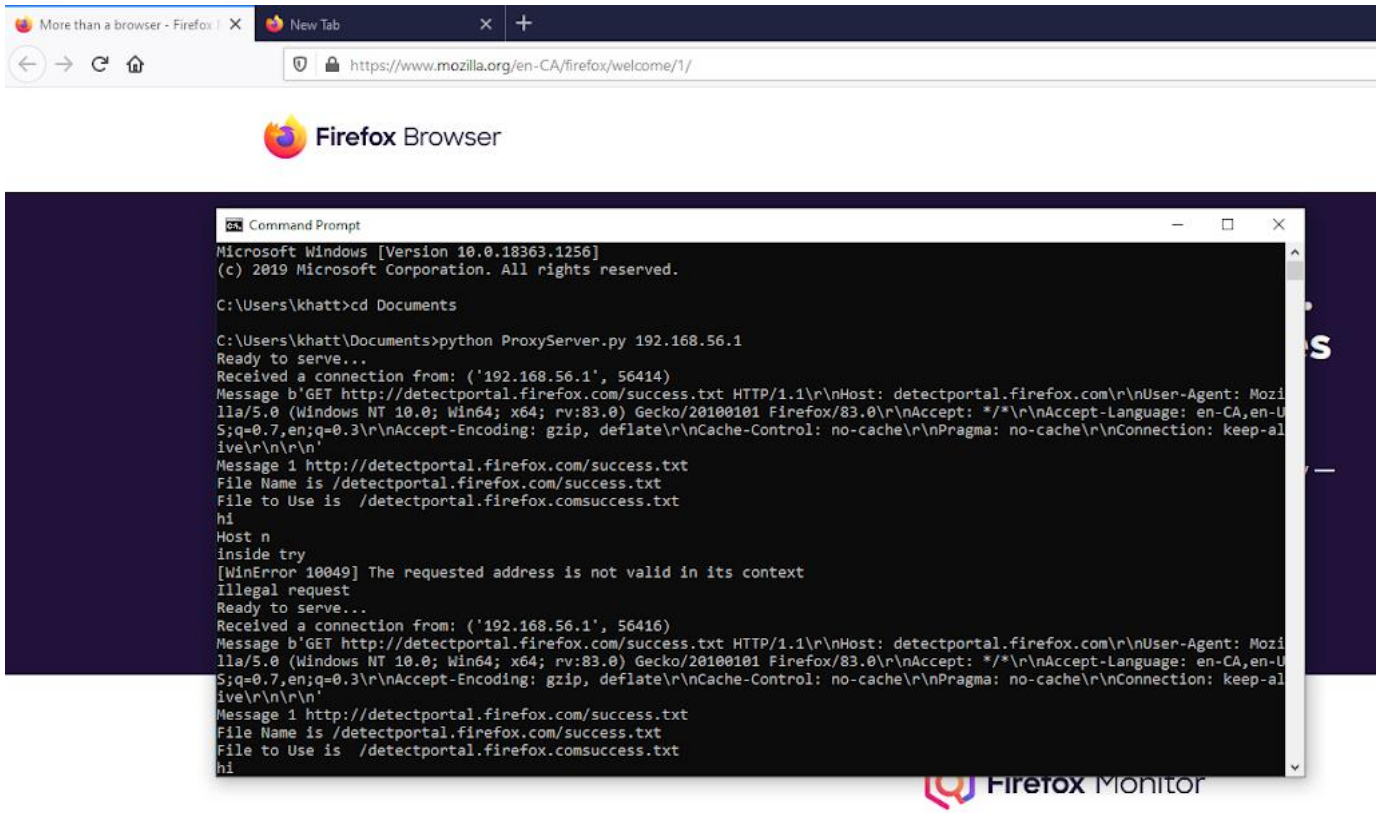




RUNNING THE SERVER WITH CMD

RUNNING OF THE PROGRAM

- FIRST THE PROGRAM IMPORT SOCKET MODULE
- THEN WE CREATE A SERVER SOCKET TO ATTACH TO THE SOCKET SO WE CAN LISTEN
- THEN WE EXTRACT THE FILENAME FROM THE MESSAGE THAT WE RECEIVE
- THEN WE CHECK FOR THE FILE IN THE CACHE
- THEN DISLPAYS THE HTTP RESPONSE IF THERE IS ANY AFTER WE RUN THE SERVER.



CACHING A FIREFOX WEB PAGE

THE END
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