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## Lab 1: Web Server Lab

### Python Code (`main.py`)

```
# Import socket module
from os import environ
from socket import *
import sys # In order to terminate the program

# Constants
HOST = environ.get('HOST', '127.0.0.1')
PORT = environ.get('PORT', 8080)
DEBUG = environ.get('DEBUG', True) # Change this to False to disable debug output
HTTP_OK = 'HTTP/1.1 200 OK\r\n\r\n'
HTTP_NOT_FOUND = 'HTTP/1.1 404 Not Found\r\n\r\n'

serverSocket = socket(AF_INET, SOCK_STREAM)

# Prepare a server socket
serverSocket.bind((HOST, PORT))
serverSocket.listen(1)

while True:
    # Establish the connection
    print('Ready to serve...')
    connectionSocket, addr = serverSocket.accept()
    if DEBUG:
        print('Client: {}'.format(addr[0]))
    try:
        message = connectionSocket.recv(1024)
        if DEBUG:
            print('Message: {}'.format(message))
        filename = message.split()[1]
        f = open(filename[1:])
        outputdata = f.readlines()
        if DEBUG:
            print("OutputData: {}".format(outputdata=outputdata))

        # Send one HTTP header line into socket
        connectionSocket.send(HTTP_OK.encode())

        # Send the content of the requested file to the client
        for i in range(0, len(outputdata)):
            connectionSocket.send(outputdata[i].encode())

    except IOError:
        # Send response message for file not found
```

```
connectionSocket.send(HTTP_NOT_FOUND.encode())

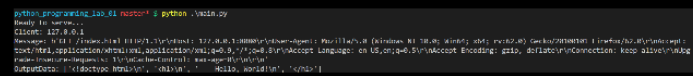
finally:
    # Close client socket
    connectionSocket.close()

serverSocket.close()
# Terminate the program after sending the corresponding data
sys.exit()
```

## HTML File (`index.html`)

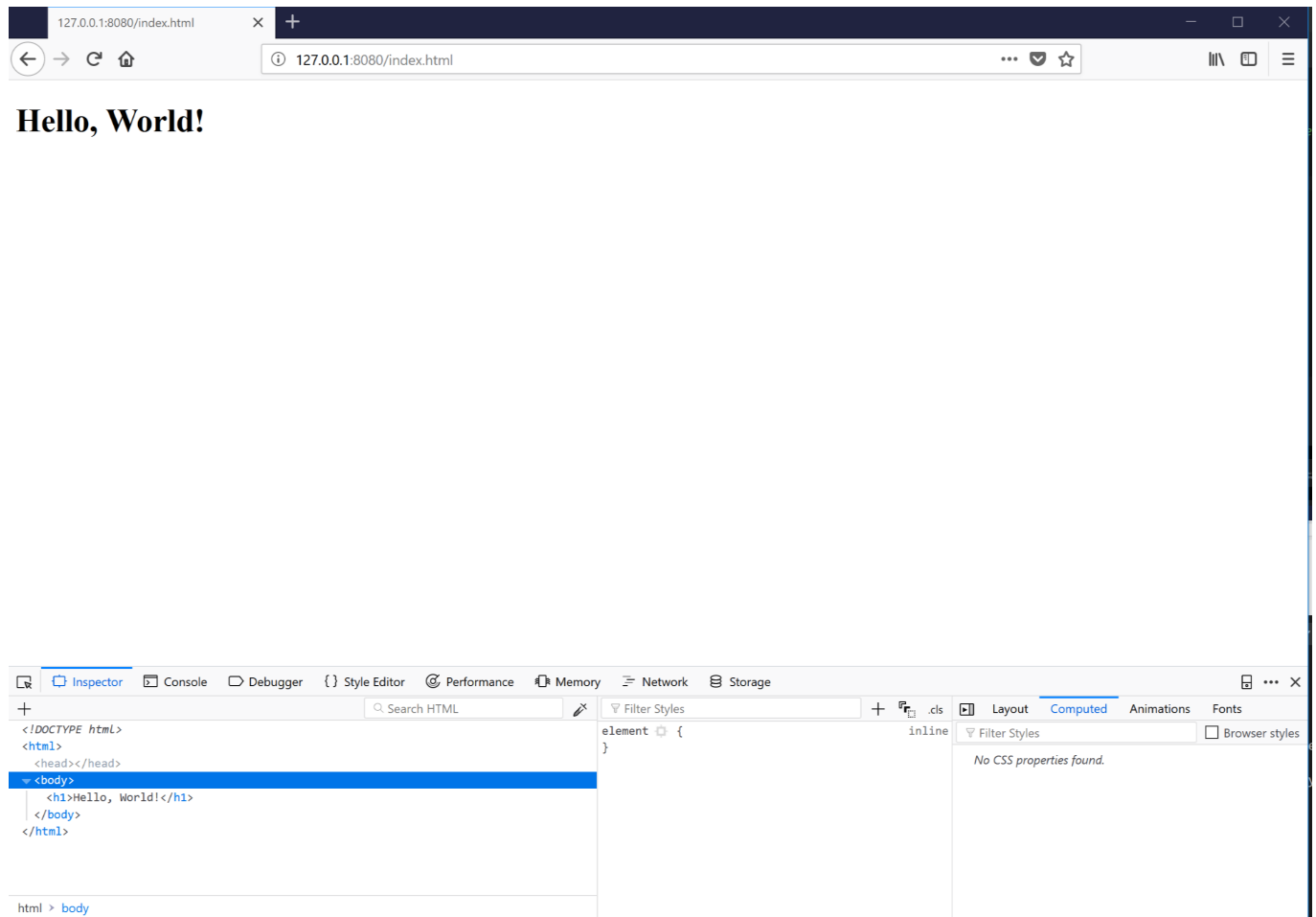
```
<!doctype html>
<html>
  <body>
    <h1>
      Hello, World!
    </h1>
  </body>
</html>
```

## Screenshots



```
python_programing_lab_1_webserver.py
Ready to serve...
Client: 127.0.0.1
Message: GET /index.html HTTP/1.1
Outputs: <!doctype html>
<html>
  <body>
    <h1>
      Hello, World!
    </h1>
  </body>
</html>
```

## Debug output for webserver



## Firefox client