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3.1

Q1: The request specified has the type of a GET request.
Q2: HTTP/1.1
Q3:

```
PS C:\dev\DT113G\lab_3> python .\Server_basic.py
Waiting for requests ...
A new request has been received...
GET /some_dir/page_name.html HTTP/1.1
Host: 127.0.0.1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:92.0) Gecko/20100101 Firefox/92.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
DNT: 1
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1
Sec-GPC: 1
```

Q4:

```
Hello world!
```

In the browser we can see a simple Hello world text.

3.2

Q1:

```
PS C:\Users\an_de> cd C:\dev\DT113G\lab_3
PS C:\dev\DT113G\lab_3> python3 .\Server_3.2.py
Waiting for requests ...
b'GET /some_dir/page_name.html HTTP/1.1'
b'Host: 127.0.0.1'
b'User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:93.0) Gecko/20100101 Firefox/93.0'
b'Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8'
b'Accept-Language: en-US,en;q=0.5'
b'Accept-Encoding: gzip, deflate'
b'DNT: 1'
b'Connection: keep-alive'
b'Upgrade-Insecure-Requests: 1'
b'Sec-Fetch-Dest: document'
b'Sec-Fetch-Mode: navigate'
b'Sec-Fetch-Site: none'
b'Sec-Fetch-User: ?1'
b'Sec-GPC: 1'
b''
b''
```

Q2: Done (look code)

```
requested_resource = str(data_received[0]).split(' ')[1]
print(requested_resource)
```

Q3:

```
PS C:\dev\DT113G\lab_3> python3 .\Server_3.2.py
Waiting for requests ...
/text_only.html
Waiting for requests ...
/favicon.ico
Waiting for requests ...
/favicon.ico
Waiting for requests ...
```

The client sends 3 requests

Q4:

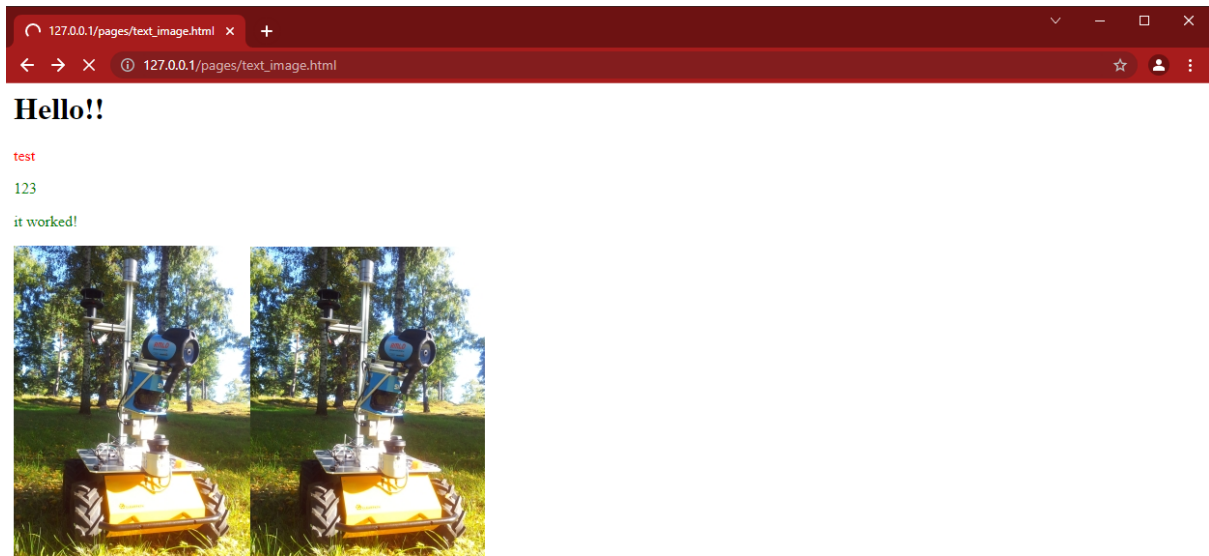Yes the HTML file does show in the browser.

Hello!!

test

123
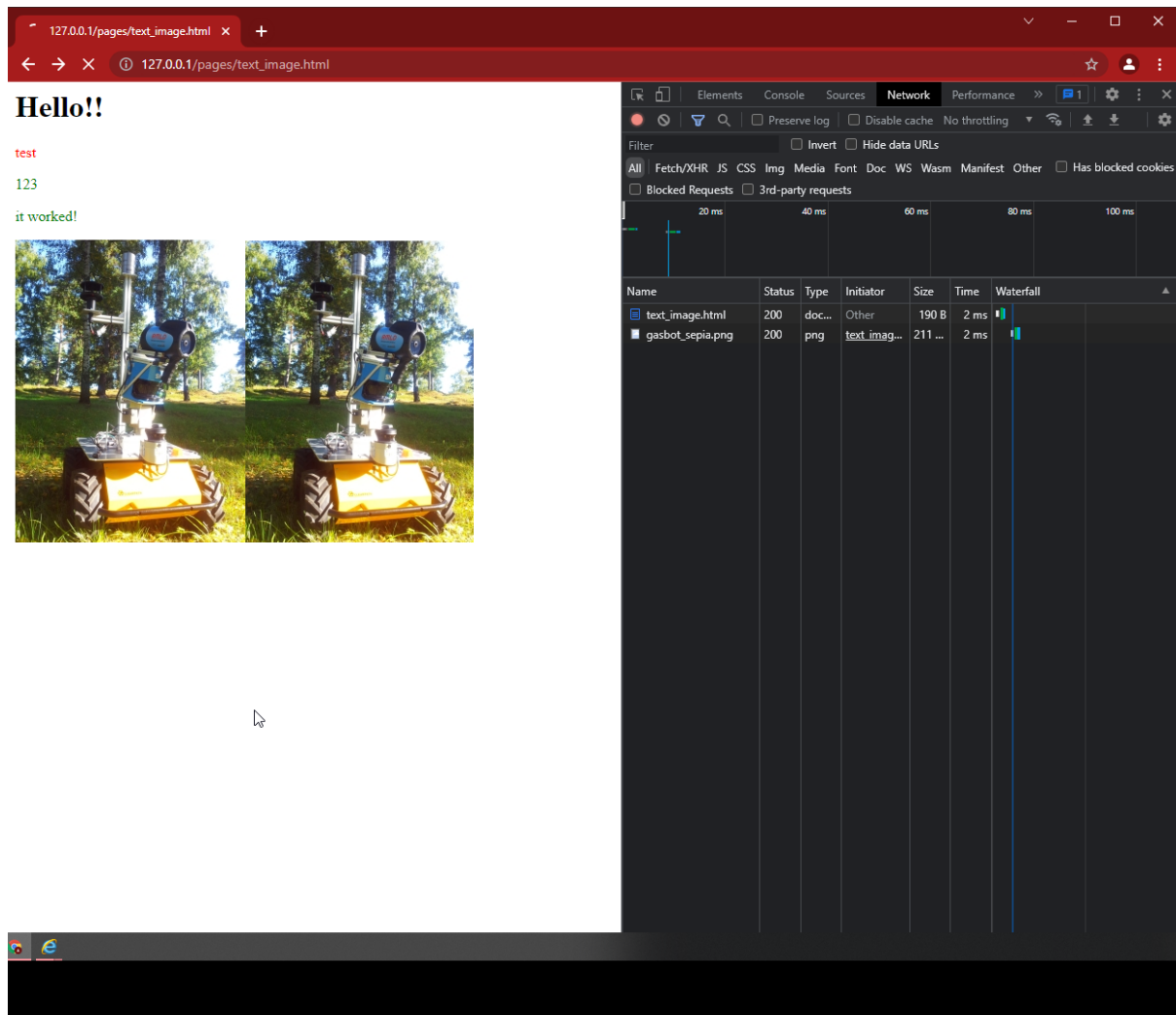
it worked!

Q5:

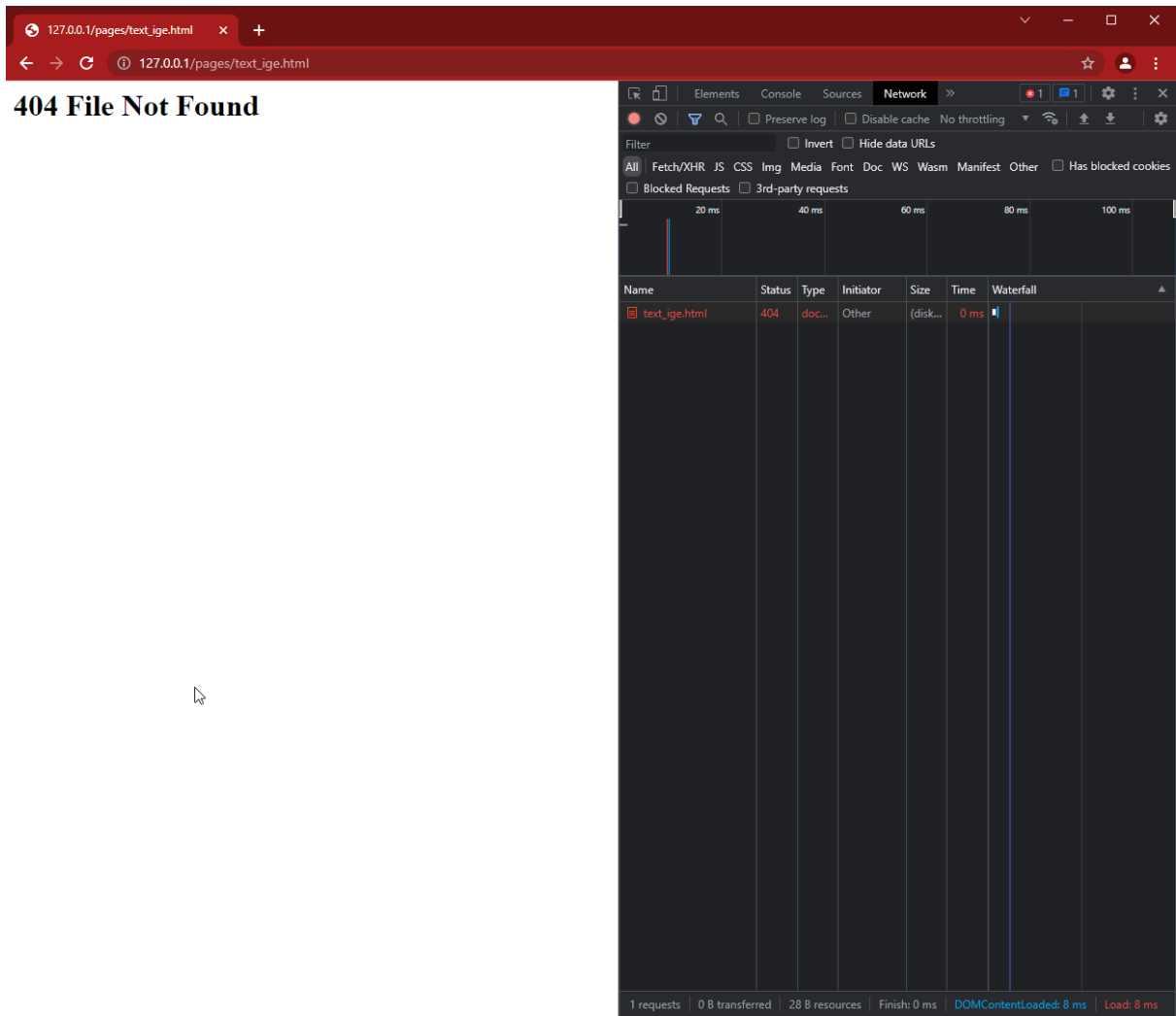Yes the page is displayed as it should.

Q6:

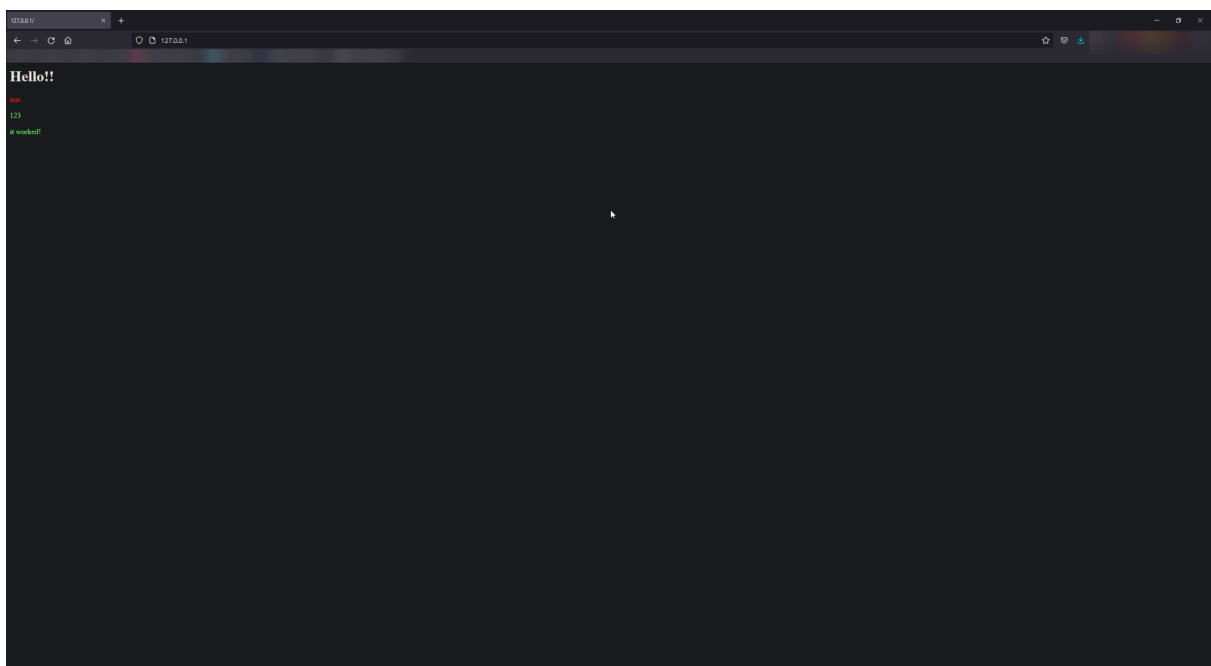

2 requests were received.

3.3

Q1:

When a page is found the html file is sent through the socket together with a 200 ok status code, when a file path that does not exist gets requested we get the following page and header:

404 File Not Found

Which displays a 404 error message and also sends a 404 status code in the headers.

Q2:

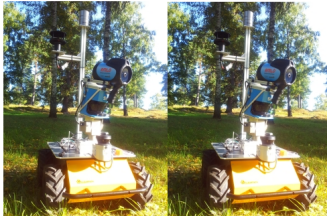Hello!!

test
123
it worked!

When the site is visited from firefox it sends the text only html file, meanwhile if you go to the local ip in internet explorer

Hello!!

test

123

it worked!

we get the html file including an image, this is done by checking if the line either contains trident or firefox since those are two unique identifiers for each browser.

```python
try:
    for row in rows:
        if not row:
            continue

        if "Firefox" in row:
            f = open("./pages/text_only.html", 'rb')
            outputdata = f.read()
            f.close()
            connectionSocket.sendall(outputdata)

        elif "Trident" in row:
            f = open("./pages/text_image.html", 'rb')
            outputdata = f.read()
            f.close()
            connectionSocket.sendall(outputdata)
```

sometimes the image doesn't display in internet explorer but the file is getting sent with a 200 OK status code so it is probably on my end with my internet explorer browser.

Q3: The page won't be accessed anywhere else in the local internet, this is because we need to forward the port inside our router. This makes NAT reroute the traffic to a specific local ip and port.