CS 359

COMPUTER NETWORK LAB

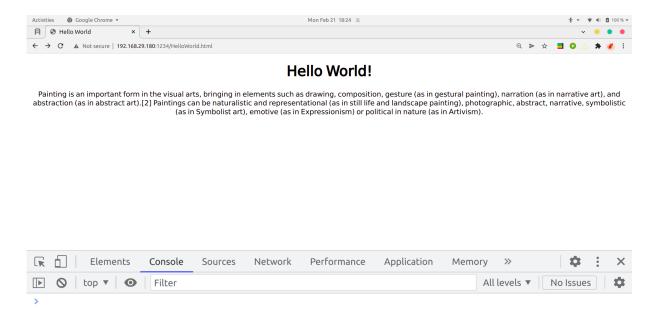
ASSIGNMENT 3

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Single Threaded Server

A web server that handles one HTTP request at a time.

It runs on a docker container and accepts and parses the HTTP request, gets the requested file from the server's file system, creates an HTTP response message consisting of the requested file preceded by header lines, and then sends the response directly to the client.

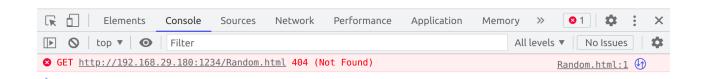


If the requested file is not present in the server, the server sends an HTTP 404 Not Found message back to the client.

404 Not Found

The requested resource could not be found but may be available in the future.

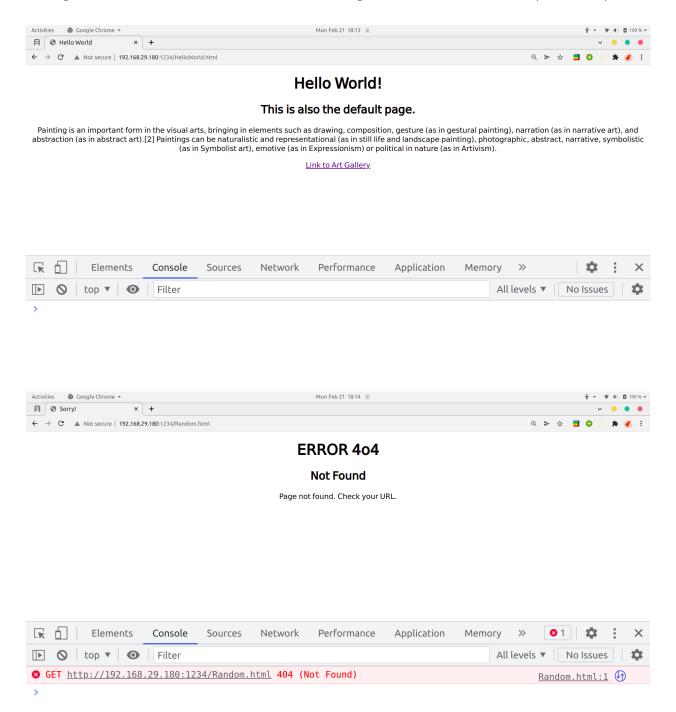




Multi Threaded Server

A multithreaded web server that can open concurrent connections with more than one browser.

For a single connection, it behaves similar to the single threaded server in the previous question.



It also reads a separate configuration file initially to configure itself. THe configuration file includes:

- Maximum number of concurrent requests
- Blocked IP Address
- Default html file

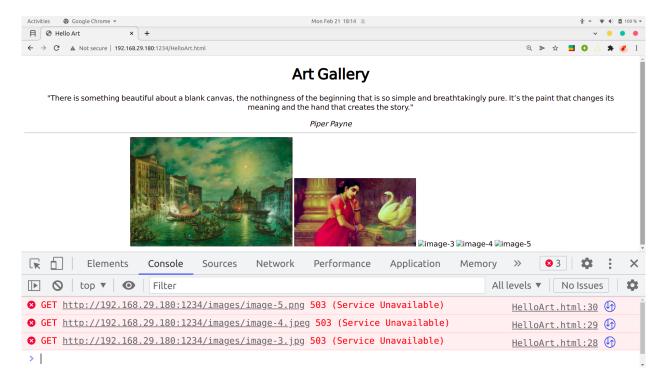
(a) The maximum number of concurrent requests that the server would support.

In the current configuration files, 2 concurrent requests are supported.

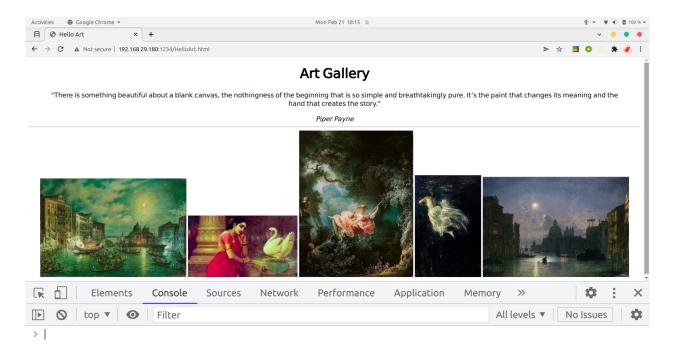
When *HelloArt.html* is loaded, it requests for 5 images from the server one after the other. Sometimes, when images are requested before the previous request are handled, they are dropped and an HTTP 503 Server Unavailable message is sent.

503 Service Unavailable

The server cannot handle the request (because it is overloaded or down for maintenance). Generally, this is a temporary state.



On increasing the maximum number of concurrent requests, images are loaded successfully.

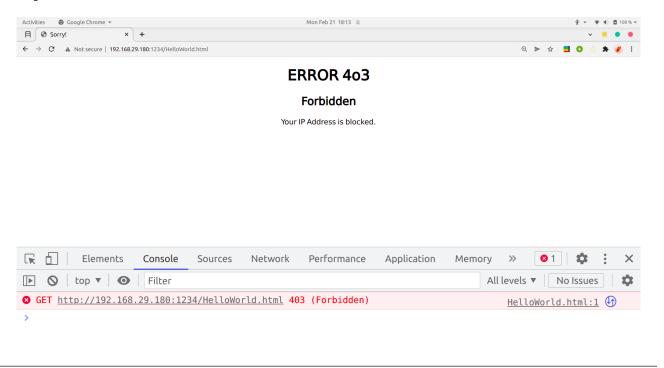


(b) The IP addresses that it would filter, i.e. the IP addresses that the web server would block.

If the current client IP address is added to blocked IPs in configuration files, access is denied and HTTP 403 Forbidden message is sent.

403 Forbidden

The request contained valid data and was understood by the server, but the server is refusing action. Here, it is due to the client IP address being blocked.



(c) The default html file along with its path name, that the webserver would return.

In the current configuration files, the default file is *HelloWorld.html* .

