Computer Networking MCIS 6163

Project 1: Simple Web Server & Client

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This project is made following all the below rules

- The server works correctly with requests from a Web browser (3.5 points)
- The server can serve multiple requests at the same time (multithreaded implementation) (4 points)
- The client sends/receives messages to/from the server correctly (5 points)
- The client extracts the status and content of messages from the server correctly (4 points)
- Extracting and displaying connection parameters (1.5 points)
- Calculate and Display Round Trip Time (RTT). (2.5 points)
- Proper closing of the ports with exception handling. (2 points)
- Display/log of proper messages on the server as well as on the client. (1.5 points)
- Code documentation and Readme file. (1 points)

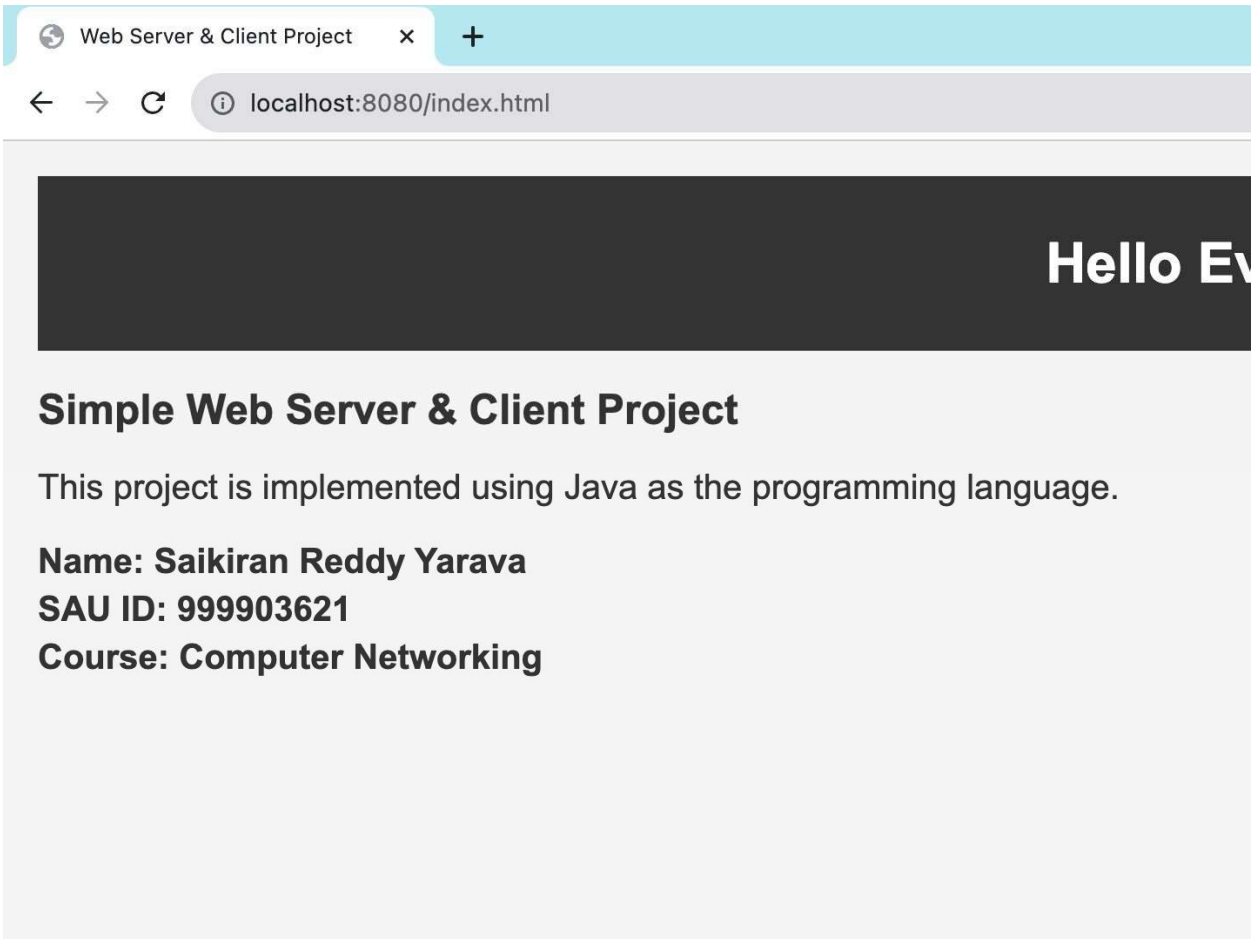
As mentioned in readme.txt, we first run WebServer.java file on terminal. After we see the server is ready, we then run the client file.

```
/Users/saikiranreddyyarava
saikiranreddyyarava@Sais-Air ~ % cd desktop
saikiranreddyyarava@Sais-Air desktop % javac WebServer.java
saikiranreddyyarava@Sais-Air desktop % java WebServer
Server is ready to receive
Connection from /127.0.0.1
Request Line: GET /index.html HTTP/1.1
Filename: /index.html
Round Trip Time (RTT): 15 ms
Connection from /0:0:0:0:0:0:0:1
Connection from /0:0:0:0:0:0:0:1
Request Line: GET /index.html HTTP/1.1
Filename: /index.html
Round Trip Time (RTT): 1 ms
Request Line: GET /favicon.ico HTTP/1.1
Filename: /favicon.ico
```

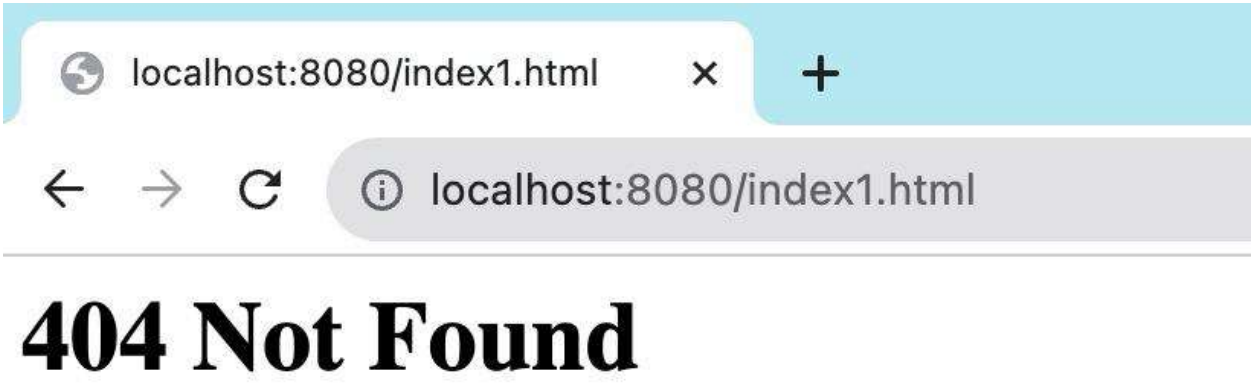
Now that the server is up and ready, we try to make a connection running the client file as shown below. As the connection is successful, we can see the HTTP response as "**200 OK**" and the contents of HTML are fetched.

```
saikiranreddyyarava@Sais-Air desktop % javac WebClient.java
saikiranreddyyarava@Sais-Air desktop % java WebClient
HTTP/1.1 200 OK

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Web Server & Client Project</title>
    <style>
        body {
            font-family: 'Arial', sans-serif;
            background-color: #f4f4f4;
            margin: 0;
            padding: 20px;
        }

        header {
            background-color: #333;
            color: #fff;
            text-align: center;
            padding: 10px;
        }

        section {
            margin-top: 20px;
        }

        section h1 {
            color: #333;
        }

        section p {
            color: #333;
                    font-size: 20px;
        }

        section ul {
            list-style-type: none;
            padding: 0;
            margin: 0;
            color: #777;
        }

        section li {
                        color: #333;
            margin-bottom: 5px;
            font-weight: bold;
            font-size: 20px;
        }
    </style>
</head>
<body>
    <header>
        <h1>Hello Everyone!</h1>
    </header>

    <section>
        <h1>Simple Web Server & Client Project</h1>
        <p>This project is implemented using Java as the programming language.</p>

        <ul>
```

We can make a connection request from browser too and when the file **“index.html”** is accessed through chrome we can see the contents of HTML file in the below screenshot. I have used some styling parameters to make the HTML content look better with my previous experience.



But when we try to access the file index1.html we can see the HTTP response as "**404 Not Found**" as seen in the screenshot below.



Here we are running the server on port 8080 and on the local, so we can access the index.html file directly by adding the extension **/index.html** to **http://localhost:8080**.