

DISTRIBUTED SYSTEMS

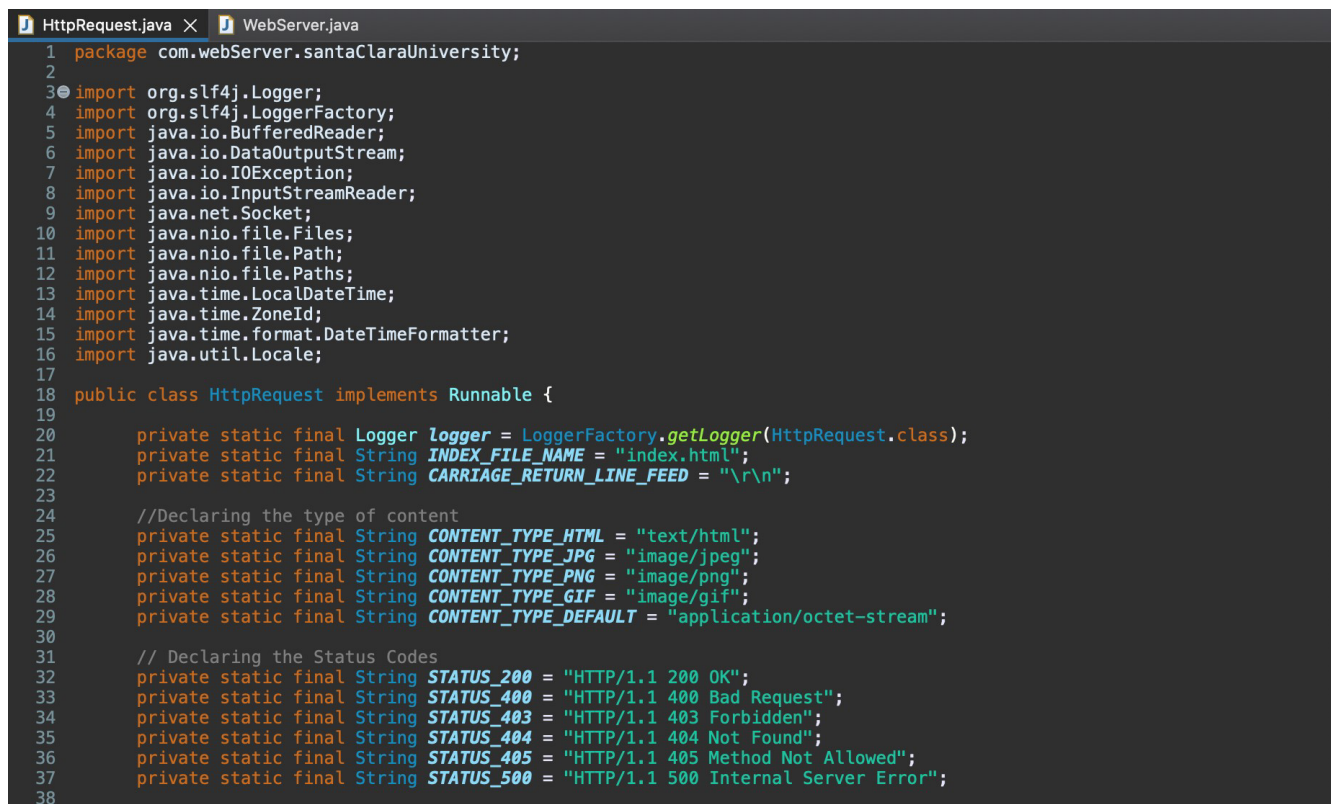
Web Server - Demo SCREENSHOTS

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This document contains the screenshots of the assignment depicting the different scenarios:-

1. HTTP version v1.1 - HTTP/1.1



```
1 package com.webServer.santaClaraUniversity;
2
3 import org.slf4j.Logger;
4 import org.slf4j.LoggerFactory;
5 import java.io.BufferedReader;
6 import java.io.DataOutputStream;
7 import java.io.IOException;
8 import java.io.InputStreamReader;
9 import java.net.Socket;
10 import java.nio.file.Files;
11 import java.nio.file.Path;
12 import java.nio.file.Paths;
13 import java.time.LocalDateTime;
14 import java.time.ZoneId;
15 import java.time.format.DateTimeFormatter;
16 import java.util.Locale;
17
18 public class HttpRequest implements Runnable {
19
20     private static final Logger logger = LoggerFactory.getLogger(HttpRequest.class);
21     private static final String INDEX_FILE_NAME = "index.html";
22     private static final String CARRIAGE_RETURN_LINE_FEED = "\r\n";
23
24     //Declaring the type of content
25     private static final String CONTENT_TYPE_HTML = "text/html";
26     private static final String CONTENT_TYPE_JPG = "image/jpeg";
27     private static final String CONTENT_TYPE_PNG = "image/png";
28     private static final String CONTENT_TYPE_GIF = "image/gif";
29     private static final String CONTENT_TYPE_DEFAULT = "application/octet-stream";
30
31     // Declaring the Status Codes
32     private static final String STATUS_200 = "HTTP/1.1 200 OK";
33     private static final String STATUS_400 = "HTTP/1.1 400 Bad Request";
34     private static final String STATUS_403 = "HTTP/1.1 403 Forbidden";
35     private static final String STATUS_404 = "HTTP/1.1 404 Not Found";
36     private static final String STATUS_405 = "HTTP/1.1 405 Method Not Allowed";
37     private static final String STATUS_500 = "HTTP/1.1 500 Internal Server Error";
38 }
```

The above snippet is the declaration of the different variables used in the code. I have declared them as static and final because the values in these variables need not be changed, they just need to be used to build response from the server.

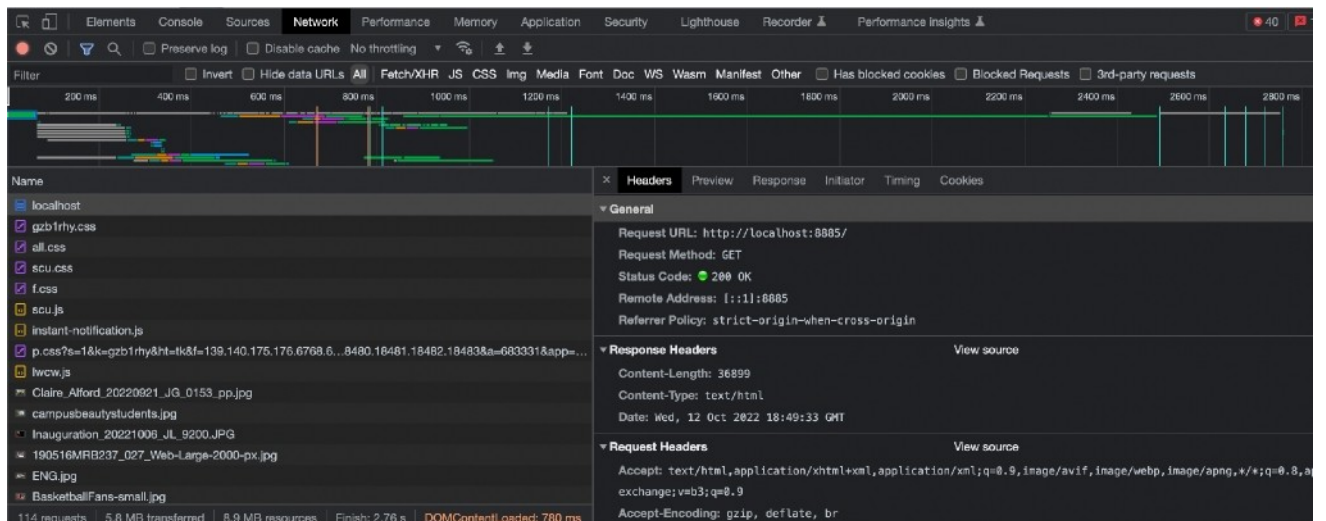
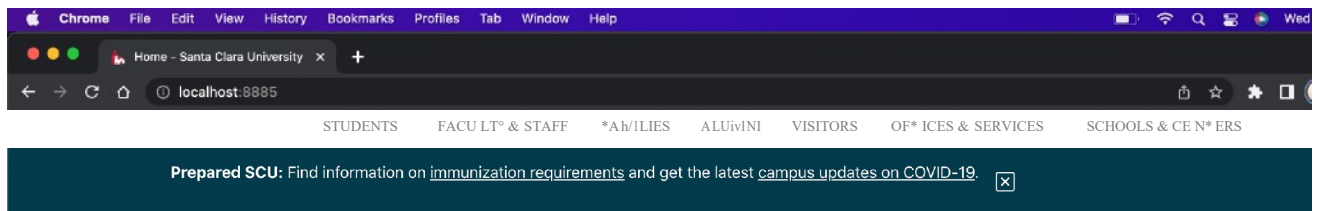
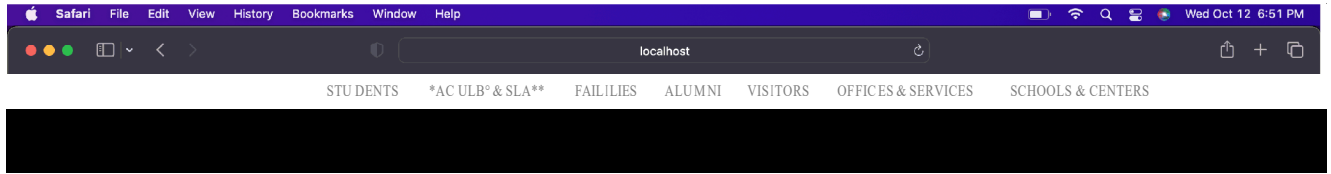
I have also declared the header details above; the type of content which the server is sending back to the client.

2. Documenting the different HTTP Status Codes below -

i) 200 OK :

200 - OK is the HTTP Status Code for a successful request. When the server is able to fetch the desired file it sends a response to the client along with this HTTP Status Code stating that the file was fetched successfully.

Displaying 3 screenshots for the same below -



```
Terminal Shell Edit View Window Help
ronnie — zsh — 204x55

ronnie@Rohits-MacBook-Air ~ % curl -X GET http://localhost:8886/index.html -v
Note: Unnecessary use of -X or --request, GET is already inferred.
* Trying 127.0.0.1:8886...
* Connected to localhost (127.0.0.1) port 8886 (#0)
> GET /index.html HTTP/1.1
> Host: localhost:8886
> User-Agent: curl/7.79.1
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 200 OK
< Date: Wed, 12 Oct 2022 20:35:01 GMT
< Content-Type: text/html
< Content-Length: 36899
<

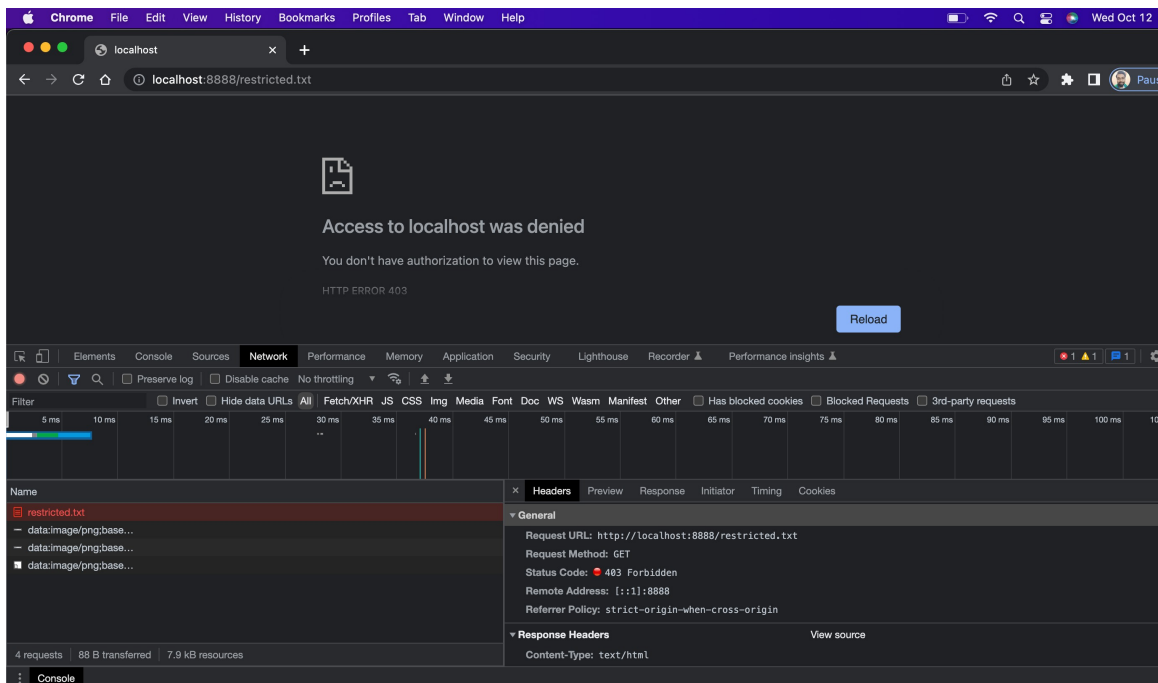
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Home - Santa Clara University</title>
  <meta name="description" content="Santa Clara University - The Jesuit University in Silicon Valley">
  <meta name="keywords" content="Santa Clara, University, Jesuit, School">
  <meta name="author" content="Santa Clara University">
  <meta name="generator" content="T4 Site Core Full">
  <link rel="apple-touch-icon" sizes="57x57" href="/assets/images/favicons/apple-touch-icon-57x57.png">
  <link rel="apple-touch-icon" sizes="60x60" href="/assets/images/favicons/apple-touch-icon-60x60.png">
  <link rel="apple-touch-icon" sizes="72x72" href="/assets/images/favicons/apple-touch-icon-72x72.png">
  <link rel="apple-touch-icon" sizes="76x76" href="/assets/images/favicons/apple-touch-icon-76x76.png">
  <link rel="apple-touch-icon" sizes="114x114" href="/assets/images/favicons/apple-touch-icon-114x114.png">
  <link rel="apple-touch-icon" sizes="120x120" href="/assets/images/favicons/apple-touch-icon-120x120.png">
  <link rel="apple-touch-icon" sizes="144x144" href="/assets/images/favicons/apple-touch-icon-144x144.png">
  <link rel="apple-touch-icon" sizes="152x152" href="/assets/images/favicons/apple-touch-icon-152x152.png">
  <link rel="apple-touch-icon" sizes="180x180" href="/assets/images/favicons/apple-touch-icon-180x180.png">
  <link rel="icon" type="image/png" href="/assets/images/favicons/favicon-32x32.png" sizes="32x32">
  <link rel="icon" type="image/png" href="/assets/images/favicons/android-chrome-192x192.png" sizes="192x192">
  <link rel="icon" type="image/png" href="/assets/images/favicons/favicon-96x96.png" sizes="96x96">
  <link rel="icon" type="image/png" href="/assets/images/favicons/favicon-16x16.png" sizes="16x16">
  <link rel="manifest" href="/assets/images/favicons/manifest.json">
  <link rel="mask-icon" href="/assets/images/favicons/safari-pinned-tab.svg" color="#5bbad5">
  <meta name="msapplication-TileColor" content="#da532c">
  <meta name="msapplication-TileImage" content="/assets/images/favicons/mstile-144x144.png">
  <meta name="theme-color" content="#ffffff">
  <meta name="pageID" content="1127"/>

  <link rel="canonical" href="https://www.scu.edu/">

<!--[if lte IE 9]>
<script src="https://cdnjs.cloudflare.com/ajax/libs/html5shiv/3.7.3/html5shiv.min.js" async></script>
<![endif]-->
```

ii) 403 - Restricted Access :

403 - Restricted Access is the HTTP Status Code for a request to a file that is not readable and hence is not accessible.



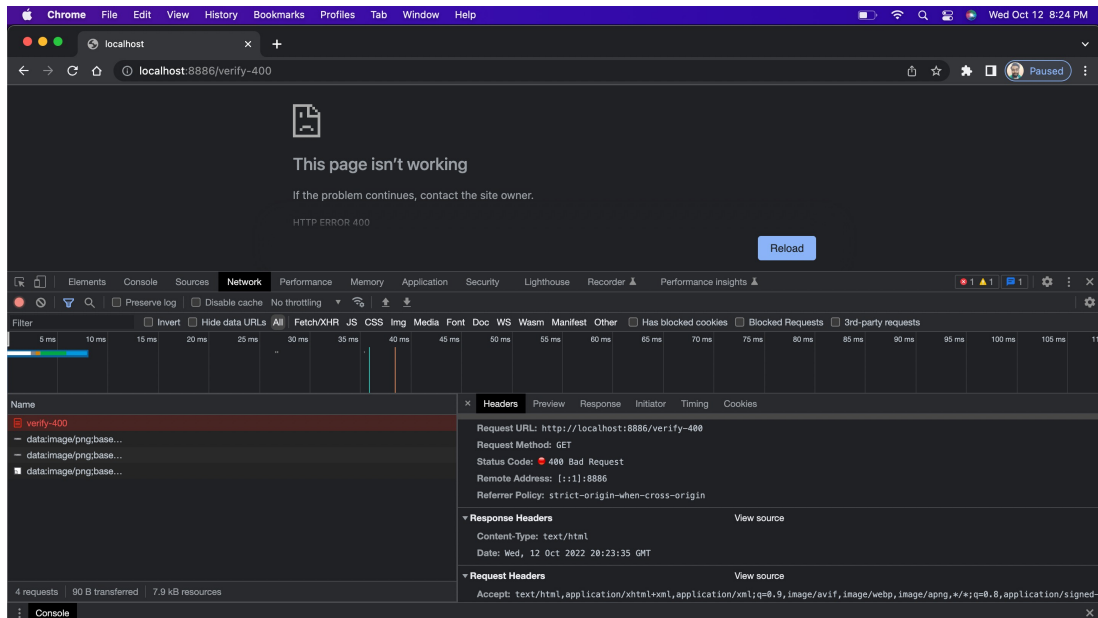
Displaying the command line output -

```
Terminal  Shell  Edit  View  Window  Help

ronnie@Rohits-MacBook-Air ~ % curl -X GET http://localhost:8886/restricted.txt -
Note: Unnecessary use of -X or --request, GET is already inferred.
* Trying 127.0.0.1:8886...
* Connected to localhost (127.0.0.1) port 8886 (#0)
> GET /restricted.txt HTTP/1.1
> Host: localhost:8886
> User-Agent: curl/7.79.1
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 403 Forbidden
< Date: Wed, 12 Oct 2022 20:42:32 GMT
< Content-Type: text/html
* no chunk, no close, no size. Assume close to signal end
<
* Closing connection 0
ronnie@Rohits-MacBook-Air ~ %
```

iii) 400 - Bad Request

400 - Bad Request is the HTTP Status Code for a request that is not formed properly.



```
Terminal  Shell  Edit  View  Window  Help

[ronnie@Rohits-MacBook-Air ~ % curl -X GET http://localhost:8886/verify-400
Note: Unnecessary use of -X or --request, GET is already inferred.
* Trying 127.0.0.1:8886...
* Connected to localhost (127.0.0.1) port 8886 (#0)
> GET /verify-400 HTTP/1.1
> Host: localhost:8886
> User-Agent: curl/7.79.1
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 400 Bad Request
< Date: Wed, 12 Oct 2022 20:47:05 GMT
< Content-Type: text/html
* no chunk, no close, no size. Assume close to signal end
<
* Closing connection 0
ronnie@Rohits-MacBook-Air ~ %
```

iv) 405 - Method not allowed

405 - Method Not Allowed is the HTTP Status Code for a request that is not formed using a different HTTP method which is not supported by the Web Server.

```
[ronnie@Rohits-MacBook-Air ~ % curl -X POST http://localhost:8886/index.html -v
* Trying 127.0.0.1:8886...
* Connected to localhost (127.0.0.1) port 8886 (#0)
> POST /index.html HTTP/1.1
> Host: localhost:8886
> User-Agent: curl/7.79.1
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 405 Method Not Allowed
< Date: Wed, 12 Oct 2022 20:33:09 GMT
< Content-Type: text/html
< Allow: GET
* no chunk, no close, no size. Assume close to signal end
<
* Closing connection 0
ronnie@Rohits-MacBook-Air ~ %
```