

Computer Networks Programming Assignment

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[Team](#)

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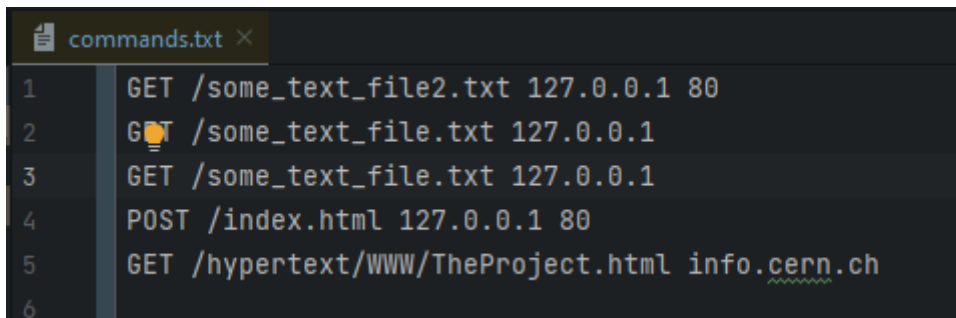
[Heuristic](#)

Team

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Sample Runs

Commands file:



```
1 GET /some_text_file2.txt 127.0.0.1 80
2 GET /some_text_file.txt 127.0.0.1
3 GET /some_text_file.txt 127.0.0.1
4 POST /index.html 127.0.0.1 80
5 GET /hypertext/WWW/TheProject.html info.cern.ch
6
```

Building the project * :

```
gradlew build
```

Running the client *:

```
./gradlew run --args="build/resources/main/commands.txt" -
PchooseMain=client.HttpClient
```

Client Logs

```
May 15, 2022 6:03:12 PM client.HttpClientThread <init>
INFO: <Sending>:
HTTP Request(HTTP/1.1, path="/some_text_file2.txt", headers={accept-language=en-us, host=127.0.0.1, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
May 15, 2022 6:03:12 PM caching.HttpResponseExecutor execute
INFO: <Received>:
HTTP Response (HTTP/1.1, status="{200,'OK'}", headers={date=Sun, 15 May 2022 18:03:12 +0200, server=FileServer/0.0.1, content-length=43, content-type=text/plain})
May 15, 2022 6:03:12 PM client.HttpClientThread <init>
INFO: <Sending>:
HTTP Request(HTTP/1.1, path="/some_text_file.txt", headers={accept-language=en-us, host=127.0.0.1, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
May 15, 2022 6:03:12 PM caching.HttpResponseExecutor execute
INFO: <Received>:
HTTP Response (HTTP/1.1, status="{200,'OK'}", headers={date=Sun, 15 May 2022 18:03:12 +0200, server=FileServer/0.0.1, content-length=41, content-type=text/plain})
May 15, 2022 6:03:12 PM client.HttpClientThread <init>
INFO: <Sending>:
HTTP Request(HTTP/1.1, path="/some_text_file.txt", headers={accept-language=en-us, host=127.0.0.1, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
May 15, 2022 6:03:12 PM caching.ClientCache process
INFO: <Cache HIT> 127.0.0.1/some_text_file.txt
May 15, 2022 6:03:12 PM caching.HttpResponseExecutor execute
INFO: <Received>:
HTTP Response (HTTP/1.1, status="{200,'OK'}", headers={date=Sun, 15 May 2022 18:03:12 +0200, server=FileServer/0.0.1, content-length=41, content-type=text/plain})
May 15, 2022 6:03:12 PM client.HttpClientThread <init>
INFO: <Sending>:
HTTP Request(HTTP/1.1, path="/index.html", headers={content-length=68, accept-language=en-us, host=127.0.0.1, content-type=text/html, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=POST)
May 15, 2022 6:03:12 PM caching.HttpResponseExecutor execute
INFO: <Received>:
HTTP Response (HTTP/1.1, status="{200,'OK'}", headers={date=Sun, 15 May 2022 18:03:12 +0200, server=FileServer/0.0.1, content-length=44, content-type=text/plain})
May 15, 2022 6:03:12 PM client.HttpClientThread <init>
INFO: <Sending>:
HTTP Request(HTTP/1.1, path="/hypertext/www/TheProject.html", headers={accept-language=en-us, host=info.cern.ch, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
May 15, 2022 6:03:13 PM caching.HttpResponseExecutor execute
INFO: <Received>:
HTTP Response (HTTP/1.1, status="{200,'OK'}", headers={date=Sun, 15 May 2022 16:03:15 GMT, server=Apache, last-modified=Thu, 03 Dec 1992 08:37:20 GMT, content-length=2217, content-type=text/html, connection=close, etag="8a9-291e721905000", accept-ranges=bytes})
```

Running the server *:

```
./gradlew run --args="80" -PchooseMain=server.FileServer
```

```
> Task :run
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread run
INFO: input:
GET /some_text_file2.txt HTTP/1.1
accept-language: en-us
host: 127.0.0.1
accept: image/png,text/html,text/plain
user-agent: Mozilla/4.0
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread respond
INFO: parsedMessage: HTTP Request(HTTP/1.1, path="/some_text_file2.txt", headers={accept-language=en-us, host=127.0.0.1, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread run
INFO: input:
GET /some_text_file.txt HTTP/1.1
accept-language: en-us
host: 127.0.0.1
accept: image/png,text/html,text/plain
user-agent: Mozilla/4.0
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread respond
INFO: parsedMessage: HTTP Request(HTTP/1.1, path="/some_text_file.txt", headers={accept-language=en-us, host=127.0.0.1, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=GET)
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread run
INFO: input:
POST /index.html HTTP/1.1
content-length: 68
accept-language: en-us
host: 127.0.0.1
content-type: text/html
accept: image/png,text/html,text/plain
user-agent: Mozilla/4.0
Thread9c4fd5ae-70bf-45cd-ac91-583bc6142aca May 15, 2022 6:03:12 PM server.FileServerThread respond
INFO: parsedMessage: HTTP Request(HTTP/1.1, path="/index.html", headers={content-length=68, accept-language=en-us, host=127.0.0.1, content-type=text/html, accept=image/png,text/html,text/plain, user-agent=Mozilla/4.0}, verb=POST)
```

- when executing any of the above commands in IntelliJ after typing the command press **CTRL+SHIFT+ENTER**.

Heuristic

$$\max(0, 1 - \text{Thread Count} * 1.0 / \text{threshold}) * \text{maxTimeoutMillis})$$