# CMPT 371 : Mini Project HTTP Protocol(Option One) Test Procedure

Keenan Byun
Yuzhen Mao

**Step 3(Testing Various Scenarios)**:
Client code sends request messages sequentially to the server in order to induce various code responses.
Request list:

1. **TEST 200 code**, Message: GET /test.html HTTP/1.1\r\n\r\n
2. **TEST 304 code (induce code 200)**, Message: GET /test.html HTTP/1.1\r\nIf-Modified-Since: Wed, 21 Oct 2015 07:28:00 GMT\r\n\r\n
3. **TEST 304 code**, Message: GET /test.html HTTP/1.1\r\nIf-Modified-Since: Mon, 08 Apr 2021 07:28:00 GMT\r\n\r\n
4. **TEST 400 code(lack of elements)**, Message: /test.html /1.1\r\n\r\n
5. **TEST 400 code(wrong method name),** Message: GT /test.html HTTP/1.1\r\n\r\n
6. **TEST 400 code(no '/' before the file name),** Message: GET test.html HTTP/1.1\r\n\r\n
7. **TEST 400 code(wrong version),** Message: GET /test.html HTTP/1.3\r\n\r\n
8. **TEST 400 code(method not supported by version),** Message: PUT /test.html HTTP/1.0\r\n\r\n
9. **TEST 404 code,** Message: GET /tst.html HTTP/1.1\r\n\r\n
10. **TEST 408 code,** Message: GET /test.html HTTP/1.1\r\n\r\n

For the **TEST 408 code** the message was sent after 10 seconds from connecting to the server while the timeout is set to 5 seconds.

output:

```
------------------------------------------------------------------
Test 1, Expected code: 200, Message: GET /test.html HTTP/1.1

From Server: HTTP/1.1 200 OK




<!DOCTYPE html>
<html>

<head>
  <meta charset="utf-8">
  <title></title>
  <meta name="author" content="">
  <meta name="description" content="">
  <meta name="viewport" content="width=device-width, initial-scale=1">
```

```
</head>

<body>

  <p>Congratulations! Your Web Server is Working!</p>

</body>

</html>

----------------------------------------------------------------------
----------------------------------------------------------------------
Test 2, Expected code: 200, Message: GET /test.html HTTP/1.1

If-Modified-Since: Wed, 21 Oct 2015 07:28:00 GMT

From Server: HTTP/1.1 200 OK



<!DOCTYPE html>
<html>

<head>
  <meta charset="utf-8">
  <title></title>
  <meta name="author" content="">
  <meta name="description" content="">
  <meta name="viewport" content="width=device-width, initial-scale=1">

</head>

<body>

  <p>Congratulations! Your Web Server is Working!</p>

</body>

</html>

----------------------------------------------------------------------
----------------------------------------------------------------------
Test 3, Expected code: 304, Message: GET /test.html HTTP/1.1
```

```
If-Modified-Since: Mon, 08 Apr 2021 07:28:00 GMT

From Server: HTTP/1.1 304 Not Modified


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 4, Expected code: 400, Message: /test.html /1.1

From Server: HTTP/? 400 Bad Request


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 5, Expected code: 400, Message: GT /test.html HTTP/1.1

From Server: HTTP/1.1 400 Bad Request


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 6, Expected code: 400, Message: GET test.html HTTP/1.1

From Server: HTTP/1.1 400 Bad Request


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 7, Expected code: 400, Message: GET /test.html HTTP/1.3

From Server: HTTP/1.3 400 Bad Request


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 8, Expected code: 400, Message: PUT /test.html HTTP/1.0

From Server: HTTP/1.0 400 Bad Request


----------------------------------------------------------------------
----------------------------------------------------------------------
Test 9, Expected code: 404, Message: GET /tst.html HTTP/1.1
```

From Server: HTTP/1.1 404 Not Found

-------------------------------------------------------------------
-------------------------------------------------------------------
Test 10, Expected code: 408, Message: GET /test.html HTTP/1.1

From Server: HTTP/? 408 Request Timeout

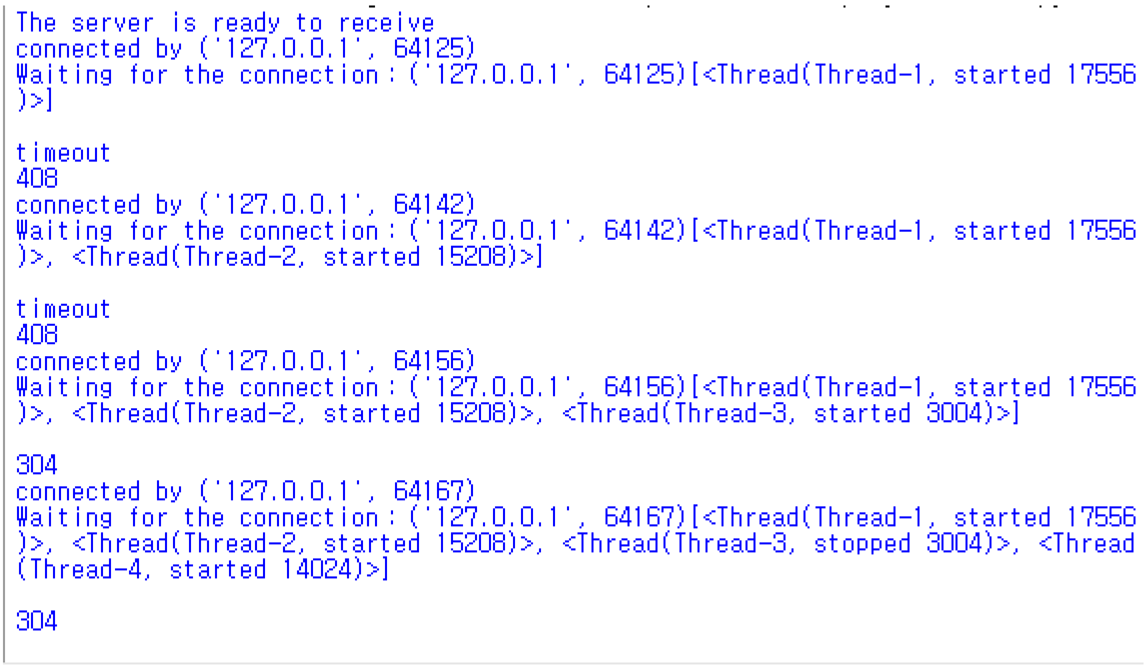
-------------------------------------------------------------------

**Step 5(Testing Multithreading)**:
Client code uses time.sleep() between connecting to the server and sending the request in order to check multiple sockets are working at the same time.

**Procedure:**

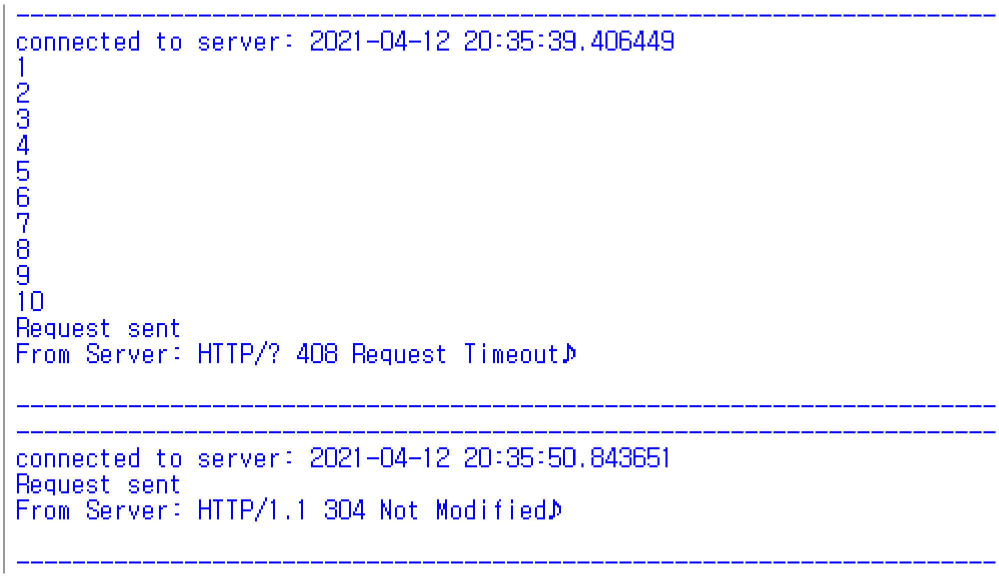
1. Prepare two client codes to run it at the same time.
2. Initiate a client code ‘A’ sending a request after 10 seconds from connecting to the server.
3. After 5 seconds, Initiate another client code ‘B’ sending a request after 10 seconds from connecting to the server.
4. Client code ‘A’ sends another request without time.sleep.
5. Client code ‘B’ sends another request without time.sleep.

output:
HTTP Protocol Server:



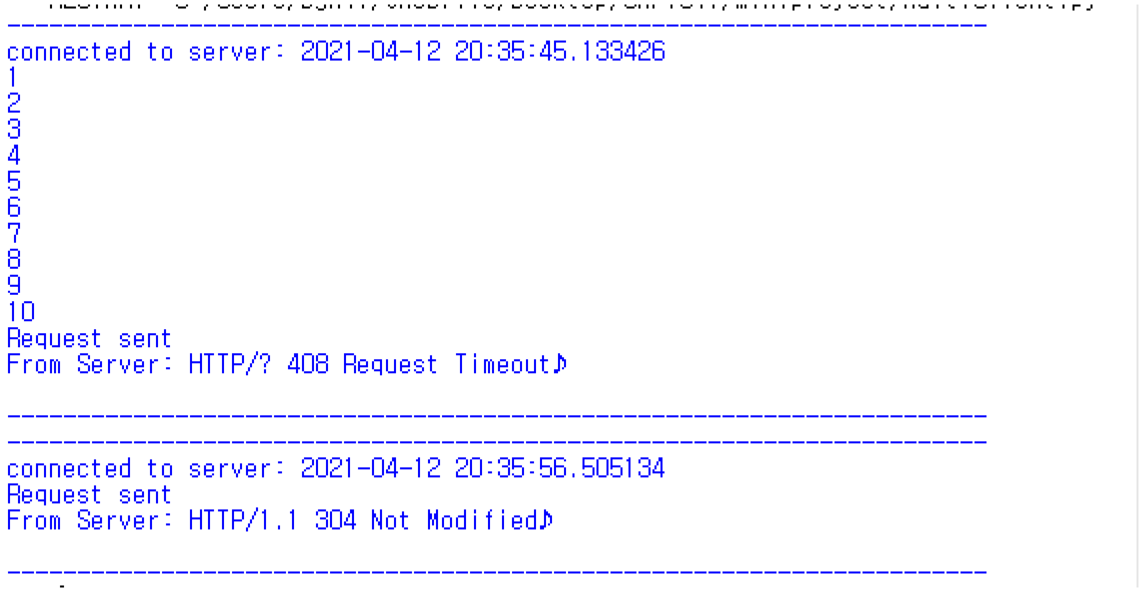
```
The server is ready to receive
connected by ('127.0.0.1', 64125)
Waiting for the connection : ('127.0.0.1', 64125)[<Thread(Thread-1, started 17556
)>]

timeout
408
connected by ('127.0.0.1', 64142)
Waiting for the connection : ('127.0.0.1', 64142)[<Thread(Thread-1, started 17556
)>, <Thread(Thread-2, started 15208)>]

timeout
408
connected by ('127.0.0.1', 64156)
Waiting for the connection : ('127.0.0.1', 64156)[<Thread(Thread-1, started 17556
)>, <Thread(Thread-2, started 15208)>, <Thread(Thread-3, started 3004)>]

304
connected by ('127.0.0.1', 64167)
Waiting for the connection : ('127.0.0.1', 64167)[<Thread(Thread-1, started 17556
)>, <Thread(Thread-2, started 15208)>, <Thread(Thread-3, stopped 3004)>, <Thread
(Thread-4, started 14024)>]

304
```

Client Code ‘A’:



```
----------------------------------------------------------------------
connected to server: 2021-04-12 20:35:39.406449
1
2
3
4
5
6
7
8
9
10
Request sent
From Server: HTTP/? 408 Request Timeout♪

----------------------------------------------------------------------
----------------------------------------------------------------------
connected to server: 2021-04-12 20:35:50.843651
Request sent
From Server: HTTP/1.1 304 Not Modified♪

----------------------------------------------------------------------
```

Client Code ‘B’:



```
----------------------------------------------------------------------
connected to server: 2021-04-12 20:35:45.133426
1
2
3
4
5
6
7
8
9
10
Request sent
From Server: HTTP/? 408 Request Timeout♪

----------------------------------------------------------------------
----------------------------------------------------------------------
connected to server: 2021-04-12 20:35:56.505134
Request sent
From Server: HTTP/1.1 304 Not Modified♪

----------------------------------------------------------------------
```

Every client code got proper responses, and each job processed separately. On the server side, we could check some threads which handle timeout response still alive while finished threads are closed.(Timeout is set to 30seconds for a thread)