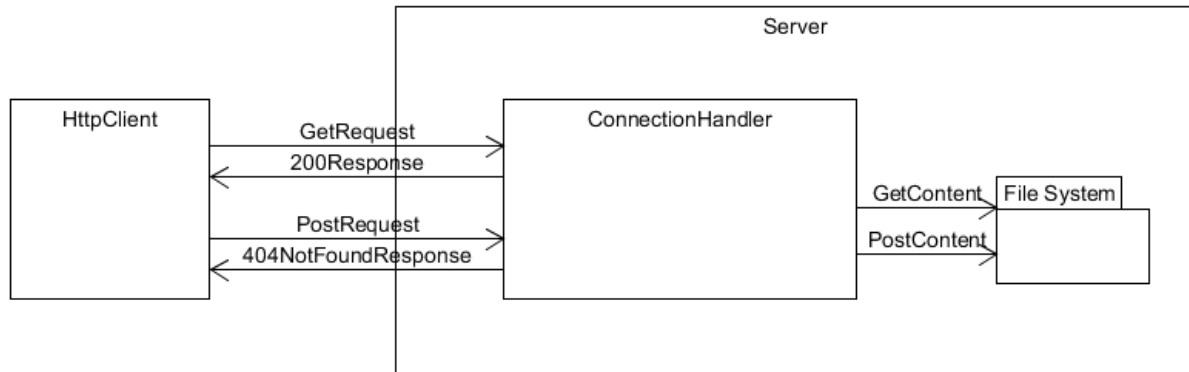Andrew Davidson, Noah Miller

Milestone 1

1.

2.

We used the Strategy pattern to handle requests. The ConnectionHandler has a map of requests containing GET, POST, PUT, and DELETE as the keys and IRequestHandler as the values. The handler delegates the job of each request to an instantiation of IRequestHandler.

We use the singleton pattern for the HttpResponseFactory. This is because the HttpResponseFactory has to initialize a list of response factories before the user tries to create a response. Using getSingleton() will make sure that the list is fully initialized.

We use the abstract factory pattern to create a new response every time the user calls singleton.getResponse(), which takes the type of response the user wants to generate.

3.

Our request handlers contain some duplicated code that we could further extract to increase reusability. We would also like to further refactor our ConnectionHandler's run() method. The logic is unnecessarily complex, and we would like to extract it into several helper methods.

4.

HTTP 1.1 Test Client

Connection Settings

Server Name: localhost

Sleep Time (ms): 100

Port Number: 8080

Requests: 10

[Connect] [Disconnect]

Connection Request

```
DELETE /test.html HTTP/1.1
Host: localhost
Connection: Keep-Alive
User-Agent: HttpTestClient/1.0
Accept: text/html,text/plain,application/xml,application/json
Accept-Language: en-US,en;q=0.8
```

Connection Command

[Generate Persistent Request] [Generate Cache Request] [Start DOS Attack] [Send]

[Generate Bad Request] [Generate Version Request] [Stop DOS Attack] [Clear]

Connection Response

```
Connection Established!
java.net.SocketException: Socket closed
Request Sent. Waiting for response ...
---------- Header ---------------
HTTP/1.1 200 OK
connection : Close
provider : Chandan R. Rupakheti
server : SimpleWebServer(SWS)/1.0.0 (Windows 7/6.1/amd64)
date : Mon Oct 19 01:03:02 EDT 2015
------------- Body ---------------

---------------------------------
Socket Disconnected!
```

HTTP 1.1 Test Client

Connection Settings

Server Name	localhost	Port Number	8080	Connect
Sleep Time (ms)	100	Requests	10	Disconnect

Connection Request

```
POST /test.html HTTP/1.1
Host: localhost
Connection: Keep-Alive
User-Agent: HttpTestClient/1.0
Content-Length: 15
Accept: text/html,text/plain,application/xml,application/json
Accept-Language: en-US,en;q=0.8

test
```

Connection Command

| Generate Persistent Request | Generate Cache Request | Start DOS Attack | Send |
| Generate Bad Request | Generate Version Request | Stop DOS Attack | Clear |

Connection Response

```
Connection Established!
Request Sent. Waiting for response ...
----------- Header ----------------
HTTP/1.1 200 OK
content-type : text/html
connection : Close
last-modified : Mon Oct 19 01:02:25 EDT 2015
content-length : 25
provider : Chandan R. Rupakheti
server : SimpleWebServer(SWS)/1.0.0 (Windows 7/6.1/amd64)
date : Mon Oct 19 01:02:25 EDT 2015
------------ Body ---------------
testtest
test


--------------------------------
Socket Disconnected!
```

HTTP 1.1 Test Client

Connection Settings

Server Name	localhost	Port Number 8080 — Connect
Sleep Time (ms)	100	Requests 10 — Disconnect

Connection Request

```
PUT /test.html HTTP/1.1
Host: localhost
Connection: Keep-Alive
User-Agent: HttpTestClient/1.0
Content-Length: 10
Accept: text/html,text/plain,application/xml,application/json
Accept-Language: en-US,en;q=0.8

testtest
```

Connection Command

Generate Persistent Request	Generate Cache Request	Start DOS Attack	Send
Generate Bad Request	Generate Version Request	Stop DOS Attack	Clear

Connection Response

```
Connection Established!
Request Sent. Waiting for response ...
---------- Header ----------------
HTTP/1.1 200 OK
content-type : text/html
connection : Close
last-modified : Mon Oct 19 01:01:46 EDT 2015
content-length : 10
provider : Chandan R. Rupakheti
server : SimpleWebServer(SWS)/1.0.0 (Windows 7/6.1/amd64)
date : Mon Oct 19 01:01:46 EDT 2015
------------- Body --------------
testtest

-------------------------------
Socket Disconnected!
```

HTTP 1.1 Test Client

Connection Settings

Server Name: localhost
Sleep Time (ms): 100
Port Number: 8080
Requests: 10

Connect
Disconnect

Connection Request

```
GET /index.html HTTP/1.1
Host: localhost
Connection: Keep-Alive
User-Agent: HttpTestClient/1.0
Accept: text/html,text/plain,application/xml,application/json
Accept-Language: en-US,en;q=0.8
```

Connection Command

Generate Persistent Request | Generate Cache Request | Start DOS Attack | Send
Generate Bad Request | Generate Version Request | Stop DOS Attack | Clear

Connection Response

```
HTTP 1.1 Test Client by C.R. Rupakheti
-------------------------------------------------
Connection Established!
Request Sent. Waiting for response ...
---------- Header ----------------
HTTP/1.1 200 OK
content-type : text/html
connection : Close
last-modified : Sun Oct 18 23:04:08 EDT 2015
content-length : 107
provider : Chandan R. Rupakheti
server : SimpleWebServer(SWS)/1.0.0 (Windows 7/6.1/amd64)
date : Mon Oct 19 01:00:38 EDT 2015
------------ Body ---------------
<html>
<head>
                <title>Test Page</title>
</head>
<body>
```


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Test Page

localhost:8080/index.html

Test Page Successful!