Lab 2

Exercise 3

Question 1: What is the status code and phrase returned from the server to the client browser?

```
Status Code: 200
[Status Code Description: OK]
Response Phrase: OK
```

- Status code: 200, phrase: OK

Question 2: When was the HTML file that the browser is retrieving last modified at the server? Does the response also contain a DATE header? How are these two fields different?

- Last modified date is:

```
Last-Modified: Tue, 23 Sep 2003 05:29:00 GMT\r\n
```

- Date header:

```
Date: Tue, 23 Sep 2003 05:29:50 GMT\r\n
```

- Why different?

Last modified date is the last modified date and time of the requested object,

DATE is the date and time the response was originated

Question 3: Is the connection established between the browser and the server persistent or non-persistent? How can you infer this?

- It is persistent. Since the 'connection header' show 'keep-Alive', which means the connection is persistent and not closed.

```
Connection: Keep-Alive\r\n
```

Question 4: How many bytes of content are being returned to the browser?

- 73 bytes

```
File Data: 73 bytes
```

Question 5: What is the data contained inside the HTTP response packet?

- The data is

```
File Data: 73 bytes
∨ Line-based text data: text/html (3 lines)
    <html>\n
    Congratulations.  You've downloaded the file lab2-1.html!\n
    </html>\n
```

Exercise 4

Question 1: Inspect the contents of the first HTTP GET request from the browser to the server. Do you see an "IF-MODIFIED-SINCE" line in the HTTP GET?

- No

Question 2: Does the response indicate the last time that the requested file was modified?

- Yes

```
Server: Apache/2.0.40 (Red Hat Linux)\r\n
Last-Modified: Tue, 23 Sep 2003 05:35:00 GMT\r\n
```

Question 3: Now inspect the contents of the second HTTP GET request from the browser to the server. Do you see an "IF-MODIFIED-SINCE:" and "IF-NONE-MATCH" lines in the HTTP GET? If so, what information is contained in these header lines?

- Yes.
- The information is:

```
If-Modified-Since: Tue, 23 Sep 2003 05:35:00 GMT\r\n
If-None-Match: "1bfef-173-8f4ae900"\r\n
```

Question 4: What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.

- It is 304, Not modified

```
Status Code: 304
[Status Code Description: Not Modified]
Response Phrase: Not Modified
```

- Not, the server did return the content of the file. Status code 304 means there is no need to retransmit the requested resources. It is an implicit redirection to a cached resource. Since we have the header 'IF-modified-Since' and 'If-None-Match' in request, and the conditions is match, so the server just redirection to a cached resource, not need to retransmit.

Question 5: What is the value of the Etag field in the 2nd response message and how it is used? Has this value changed since the 1 st response message was received?

- The ETag is:

```
ETag: "1bfef-173-8f4ae900"\r\n
```

ETag is an identifier for a specific version of a resource. Like ID

- The ETag values in 2nd and 1st response are the same, not change.