

EECS 489 Discussion 2

Assignment-1

Due date: **09/23 2018, 11:59 PM**

Please make sure your GitHub is created

Hosted in GitHub under <https://github.com/eecs489>

You should have received invitation via email (email for your GitHub account)

Please use the repo we provide to upload your submission!

Q1 True or False

- HTTP response messages never have an empty message body
- False.
- Some HTTP response messages have an empty message body.
 - HTTP Status-Code of 200 for HEAD request can be sent without message-body
 - HTTP Status-Code of 204 and 304 MUST NOT include a message body. (RFC 2616)

Q2 True or False

- Two distinct Web pages (for example, www.mit.edu/research.html and www.mit.edu/students.html) can be sent over the same persistent connection.
- True.
- It is because both of these web pages are on the same physical server (www.mit.edu).

Q3 True or False

- With nonpersistent connections between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages.
- False.
- In a nonpersistent connection, the connection closes after each request-response. In this case, the connection will close once the first message is received, and there will be a new connection opened to send the second message.

Q4 Consider the Following Request

```
GET /cs453/index.html HTTP/1.1<cr><lf>Host:
gaia.cs.umass.edu<cr><lf>User-Agent:
Mozilla/5.0 (Windows;U; Windows NT 5.1; en-
US; rv:1.7.2) Gecko/20040804 Netscape/7.2
(ax) <cr><lf>Accept:ext/xml, application/xml,
application/xhtml+xml, text/html;q=0.9,
text/plain;q=0.8,image/png,*/*;q=0.5<cr><lf>A
ccept-Language: en-us,en;q=0.5<cr><lf>Accept-
Encoding: zip,deflate<cr><lf>Accept-Charset:
ISO-8859-1,utf-8;q=0.7,*;q=0.7<cr><lf>Keep-
Alive: 300<cr><lf>Connection:keep-
alive<cr><lf><cr><lf>
```

- What is the URL (w/o scheme) of the document requested by the browser?
- Does the browser request a persistent or non-persistent connection?

Persistent

Q4 Consider the Following Request

```
GET /cs453/index.html HTTP/1.1<cr><lf>Host: gaia.cs.umass.edu<cr><lf>User-Agent: Mozilla/5.0 (Windows;U; Windows NT 5.1; en-US; rv:1.7.2) Gecko/20040804 Netscape/7.2 (ax) <cr><lf>Accept:ext/xml, application/xml, application/xhtml+xml, text/html;q=0.9, text/plain;q=0.8,image/png,*/*;q=0.5<cr><lf>Accept-Language: en-us,en;q=0.5<cr><lf>Accept-Encoding: zip,deflate<cr><lf>Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7<cr><lf>Keep-Alive: 300<cr><lf>Connection:keep-alive<cr><lf><cr><lf>
```

What is the IP address of the host on which the browser is running?

Trick question

What type of browser initiates this message?
Why is browser type needed in an HTTP request message?

Mozilla/5.0

Q5 Consider the Following Response

```
HTTP/1.1 200 OK<cr><lf>Date: Tue, 07 Mar 2008
12:39:45GMT<cr><lf>Server: Apache/2.0.52 (Fedora)
<cr><lf>Last-Modified: Sat, 10 Dec2005 18:27:46
GMT<cr><lf>ETag: "526c3-f22-a88a4c80"<cr><lf>Accept-
Ranges: bytes<cr><lf>Content-Length: 3874<cr><lf>
Keep-Alive: timeout=max=100<cr><lf>Connection:
Keep-Alive<cr><lf>Content-Type: text/html; charset=
ISO-8859-1<cr><lf><cr><lf><!doctype html public "-
//w3c//dtd html 4.0 transitional//en"><lf><html><lf>
<head><lf> <meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1"><lf> <meta
name="GENERATOR" content="Mozilla/4.79 [en] (Windows NT
5.0; U) Netscape]"><lf> <title>CMPSCI 453 / 591 /
NTU-ST550A Spring 2005 homepage</title><lf></head><lf>
<much more document text following here (not shown)>
```

- Did the server successfully find the document?

Yes

- How many bytes are being returned in the document?

3874

Q5 Consider the Following Response

```
HTTP/1.1 200 OK<cr><lf>Date: Tue, 07 Mar 2008
12:39:45GMT<cr><lf>Server: Apache/2.0.52 (Fedora)
<cr><lf>Last-Modified: Sat, 10 Dec2005 18:27:46
GMT<cr><lf>ETag: "526c3-f22-a88a4c80"<cr><lf>Accept-
Ranges: bytes<cr><lf>Content-Length: 3874<cr><lf>
Keep-Alive: timeout=max=100<cr><lf>Connection:
Keep-Alive<cr><lf>Content-Type: text/html; charset=
ISO-8859-1<cr><lf><cr><lf><!doctype html public "-//w3c//dtd html 4.0 transitional//en"><lf><html><lf>
<head><lf> <meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1"><lf> <meta
name="GENERATOR" content="Mozilla/4.79 [en] (Windows NT
5.0; U) Netscape]"><lf> <title>CMPSCI 453 / 591 /
NTU-ST550A Spring 2005 homepage</title><lf></head><lf>
<much more document text following here (not shown)>
```

- What are the first 5 bytes of the document being returned?

<!doc

- Did the server agree to a persistent connection?

Yes

Q6

You request a very small HTML file from a server. This HTML references eight other very small images. Let X denote the RTT between the localhost and the server. How much time elapses with:

1. Non-persistent HTTP with no parallel TCP connections $9 * 2X = 18X$
2. Non-persistent HTTP with the browser configured for 5 parallel connections $2X + 2X + 2X = 6X$
3. Persistent HTTP with pipelining $2X + X = 3X$