

EECS 489 Discussion 2

Q1 True or False

1. A user requests a Web page that consists of some text and three images. For this page, the client will send one request message and receive four response messages.
2. 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.
3. With nonpersistent connections between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages.

Q1 True or False

1. A user requests a Web page that consists of some text and three images. For this page, the client will send one request message and receive four response messages. **False**
2. 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**
3. With nonpersistent connections between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages. **False**

Q2 True or False

1. The `Date:` header in the HTTP response message indicates when the object in the response was last modified.
2. HTTP response messages never have an empty message body.

Q2 True or False

1. The `Date:` header in the HTTP response message indicates when the object in the response was last modified. **False**
2. HTTP response messages never have an empty message body. **False**

Q3 Consider the Following Request

```
GET /cs453/index.html HTTP/1.1<cr><lf>Host: gai
a.cs.umass.edu<cr><lf>User-Agent: Mozilla/5.0 (
Windows;U; Windows NT 5.1; en-US; rv:1.7.2) Gec
ko/20040804 Netscape/7.2 (ax) <cr><lf>Accept:ex t/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>AcceptEncoding:
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>
```

1. What is the URL of the document requested by the browser?
2. What version of HTTP is the browser running?
3. Does the browser request a persistent or non-persistent connection?

Q3 Consider the Following Request

```
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```

1. What is the URL of the document requested by the browser?
gaia.cs.umass.edu/cs453/index.html
2. What version of HTTP is the browser running?
HTTP 1.1
3. Does the browser request a persistent or non-persistent connection?
Persistent

Q3 Consider the Following Request

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1. What is the IP address of the host on which the browser is running?
2. What type of browser initiates this message? Why is the browser type needed in an HTTP request message?

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```

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

Trick question

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

Mozilla/5.0

Q4 Consider the Following Response

```
HTTP/1.1 200 OK<cr><lf>Last-Modified: Sat, 10 Dec2005
18:27:46 GMT<cr><lf>ETag:
"526c3-f22-a88a4c80"<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 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)>
```

1. Was the server able to successfully find the document?
2. When was the document last modified?
3. How many bytes are being returned in the document?

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HTTP/1.1 200 OK<cr><lf>Last-Modified: Sat, 10 Dec2005
18:27:46 GMT<cr><lf>ETag:
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Netscape]"><lf> <title>CMPSCI 453 / 591 / NTU-ST550A
Spring 2005 homepage</title><lf></head><lf> <much
more document text following here (not shown)>
```

1. Was the server able to successfully find the document? **Yes**
2. When was the document last modified? **10 Dec**
3. How many bytes are being returned in the document? **3874**

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1. What are the first 5 bytes of the document being returned?
2. Did the server agree to a persistent connection?

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HTTP/1.1 200 OK<cr><lf>Last-Modified: Sat, 10 Dec2005
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timeout=max=100<cr><lf>Connection:
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Spring 2005 homepage</title><lf></head><lf> <much
more document text following here (not shown)>
```

1. What are the first 5 bytes of the document being returned? **<!doc**
2. Did the server agree to a persistent connection?
Yes

Q5

Suppose you request a very small HTML file from a server. This server 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?
2. Non-persistent HTTP with the browser configured for 5 parallel connections?
3. Persistent HTTP with pipelining?

Q5

Suppose you request a very small HTML file from a server. This server 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?

$$2X + X = 3X$$