

COPENHAGEN BUSINESS ACADEMY



The HTTP Protocol



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Literature:

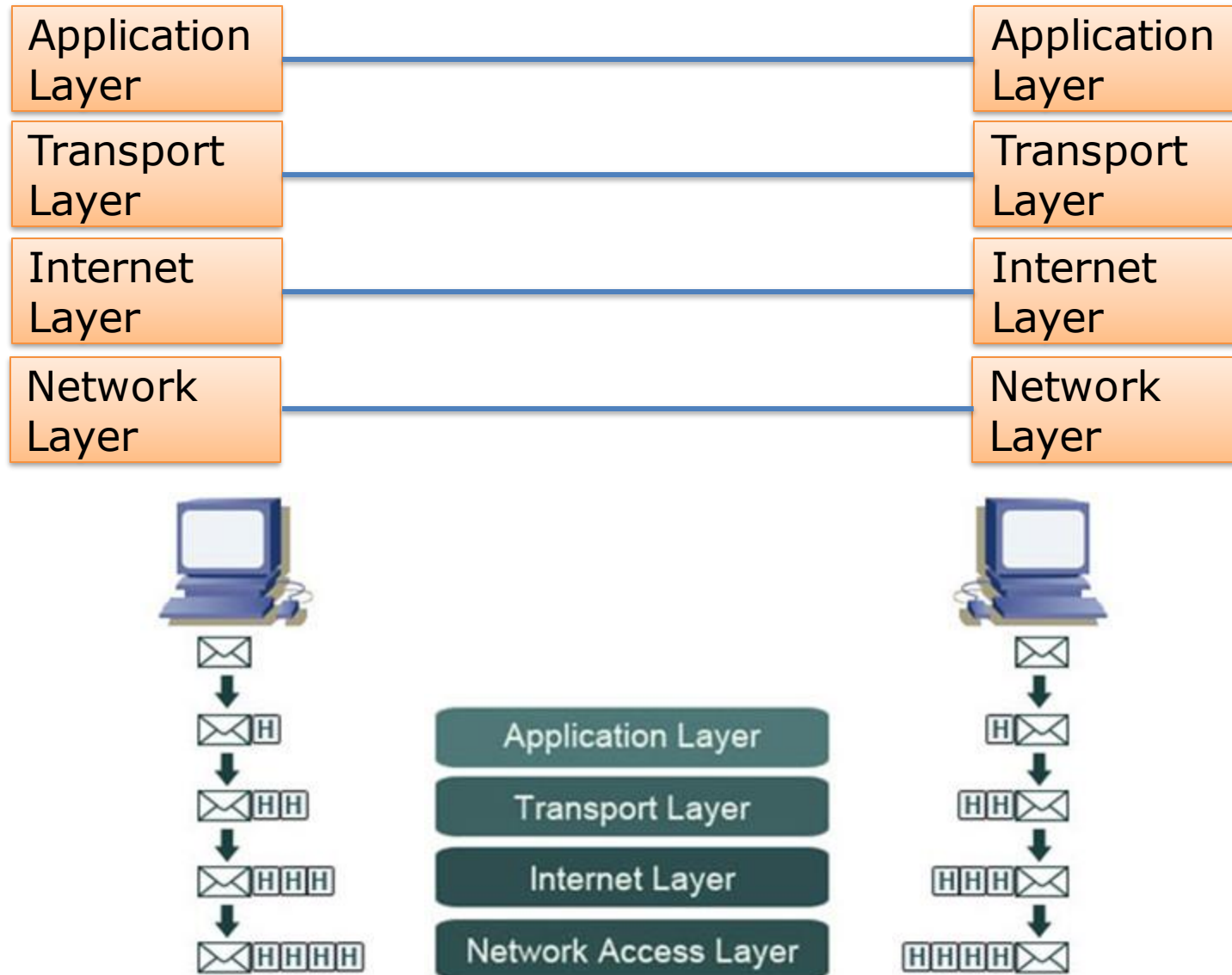
http://www.tutorialspoint.com/http/http_tutorial.pdf

http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol

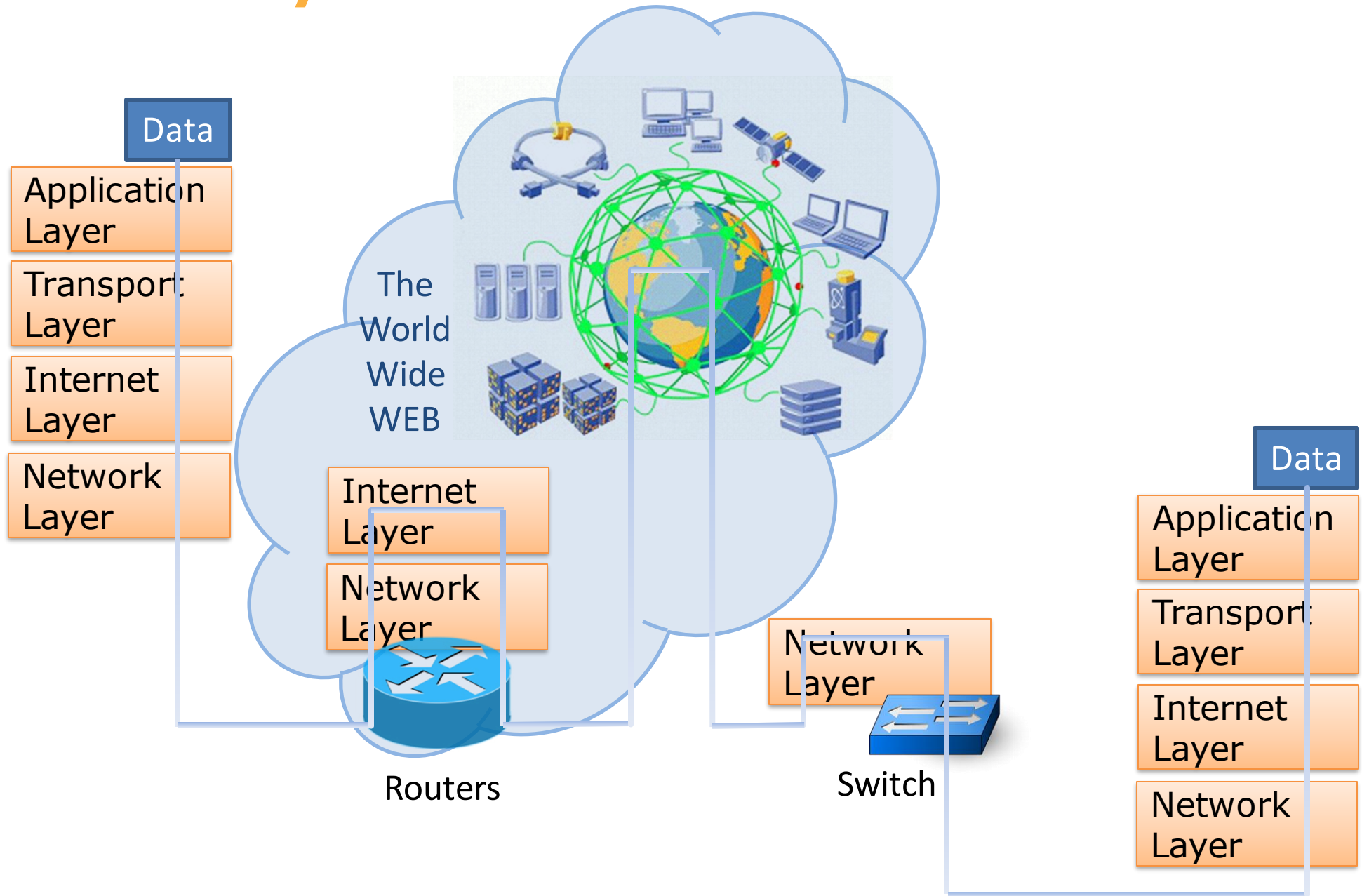
http://en.wikipedia.org/wiki/HTTP_cookie

<http://www.w3.org/Protocols/rfc2616/rfc2616-sec9.html>

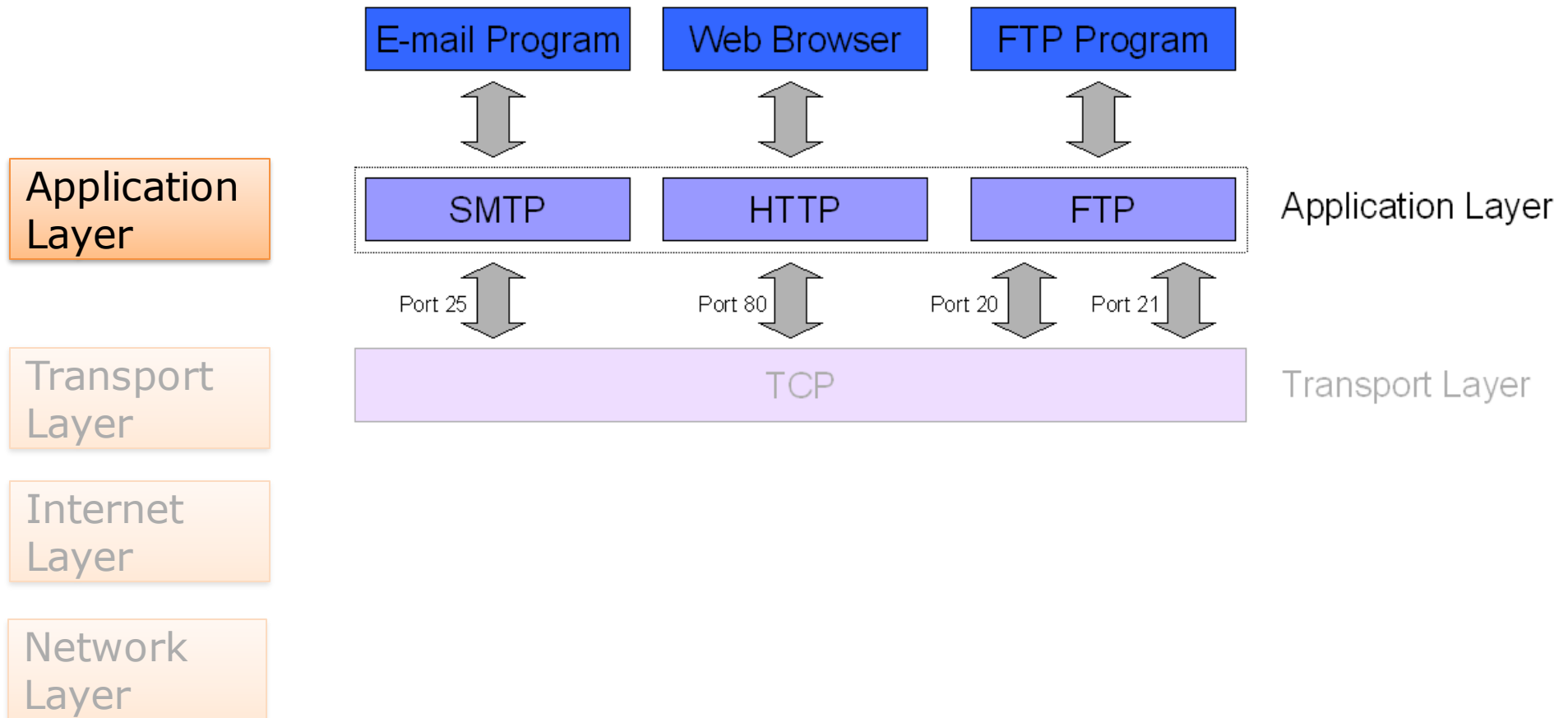
The TCP/IP Protocol Stack-1



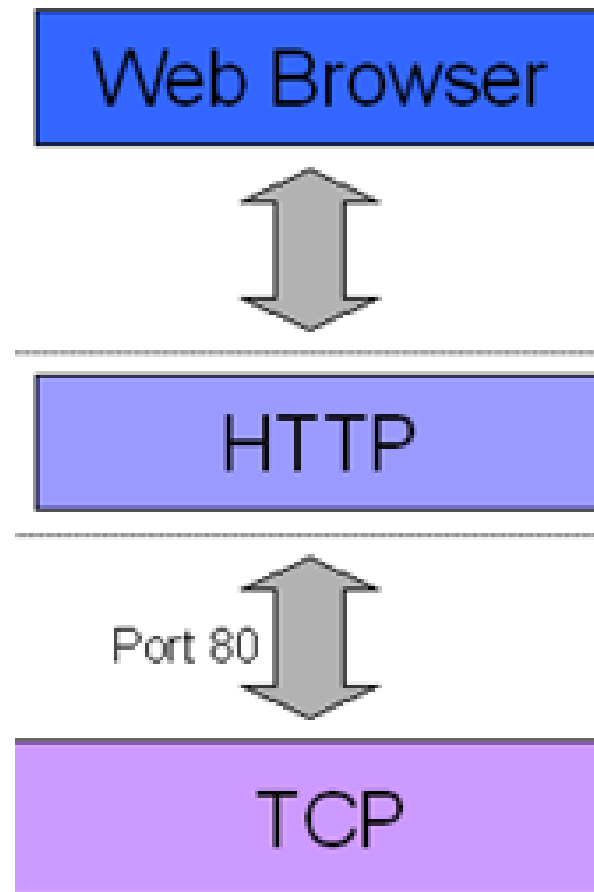
The TCP/IP Protocol Stack-2



Example Application Layer Protocols

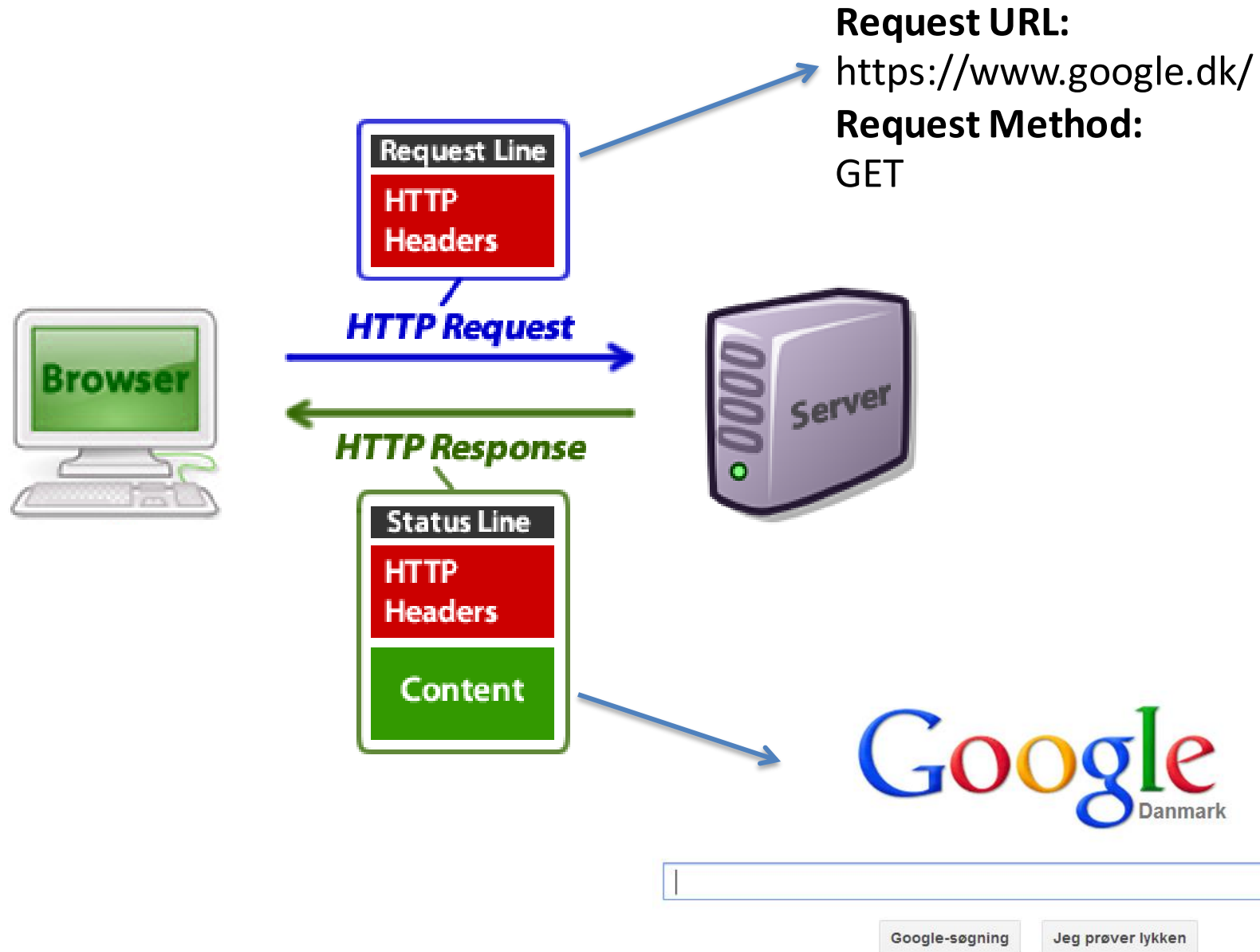


The Hyper Text Transport Protocol



HTTP (HyperText Transfer Protocol), is the underlying protocol used by the World Wide Web. HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

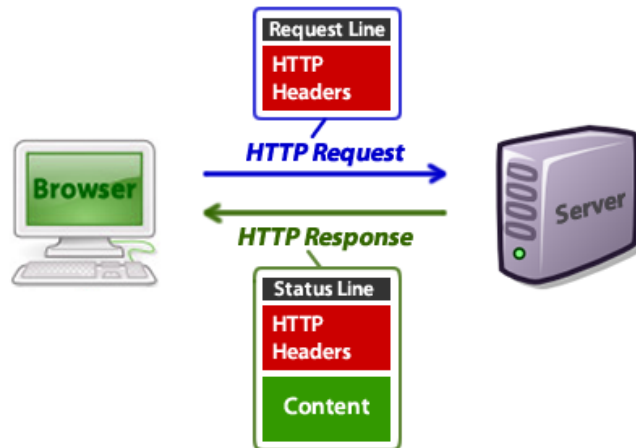
HTTP Request/Response Nature



HTTP Request/Response Nature

Which Objects would you expect to find in any capable Web-server technology

?



HTTP Request

HTTP Response

HTTP Message Format

Response Header Demo

HTTP/1.1 200 OK

X-Powered-By: Servlet/3.0 JSP/2.2 (GlassFish Server Open Source Edition 3.1.2 Java/Oracle Corporation/1.7)

Server: GlassFish Server Open Source Edition 3.1.2

Accept-Ranges: bytes

ETag: W/"197-1359900404442"

Last-Modified: Sun, 03 Feb 2013 14:06:44 GMT

Content-Type: text/html

Content-Length: 197

Date: Sun, 03 Feb 2013 14:06:55 GMT

Body

```
<!DOCTYPE html>
<html>
  <head>
    <title></title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  </head>
  <body>
    <div>HTTP demo </div>
  </body>
</html>
```

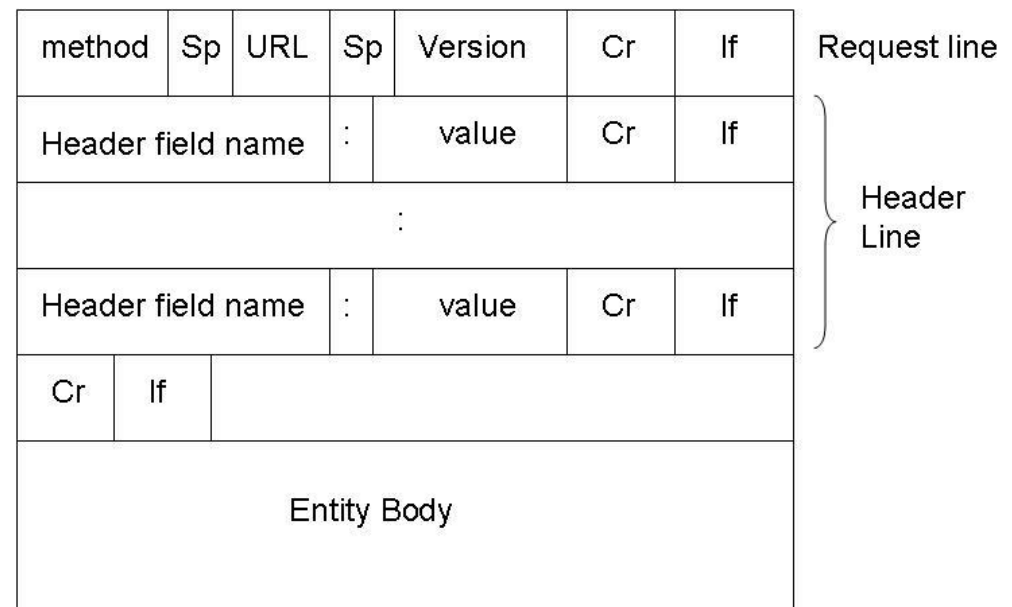
Version	Sp	Status Code	Sp	Phrase	Cr	If	Status Line
Header field name		:	value		Cr	If	Header Line
Header field name		:	value		Cr	If	
Cr	If						
Entity Body							

General (simplified) format of Request-messages

HTTP Message Format

Request Header Demo

```
GET /HTTP-DEMO/index2.html HTTP/1.1
Host: localhost:8080
Connection: keep-alive
Cache-Control: max-age=0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
User-Agent: Mozilla/5.0 (Windows NT 6.1; .....
Accept-Encoding: gzip,deflate,sdch
Accept-Language: da,en;q=0.8,en-GB;q=0.6
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.3
```



General (simplified) format of Request-messages



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200's Successful requests.

300's Redirections.

400's Problem with the request.

500's Problem with the server.



http://en.wikipedia.org/wiki/List_of_HTTP_status_codes

HTTP is Stateless Protocol

HTTP is stateless. Each request for a Web page or URL results in the requested pages being served, but without the Web (HTTP) server remembering the request later. In other words, there is no recorded continuity. Each communication is discrete and unrelated to those that precede or follow



http://www.tutorialspoint.com/http/http_quick_guide.htm

A cookie, also known as an HTTP cookie, web cookie, or browser cookie, is usually a small piece of data sent from a website and stored in a user's web browser while a user is browsing a website. When the user browses the same website in the future, the data stored in the cookie can be retrieved by the website to notify the website of the user's previous activity.

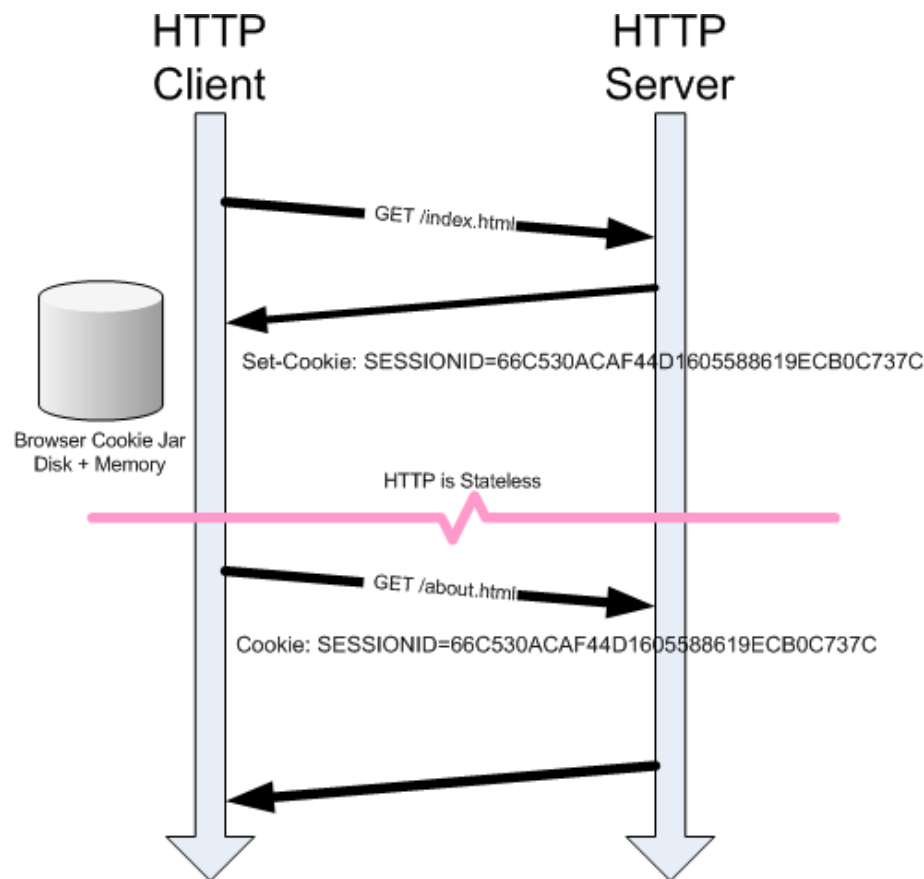
Cookies were designed to be a reliable mechanism for websites to remember the state of the website or activity the user had taken in the past.

Server side technologies can implement state or server side sessions using one or more of the following methods:

- HTTP cookies.
- Query string parameters, for example:
`/index.jsp?session_id=some_unique_session_code.`
- Hidden variables within web forms.

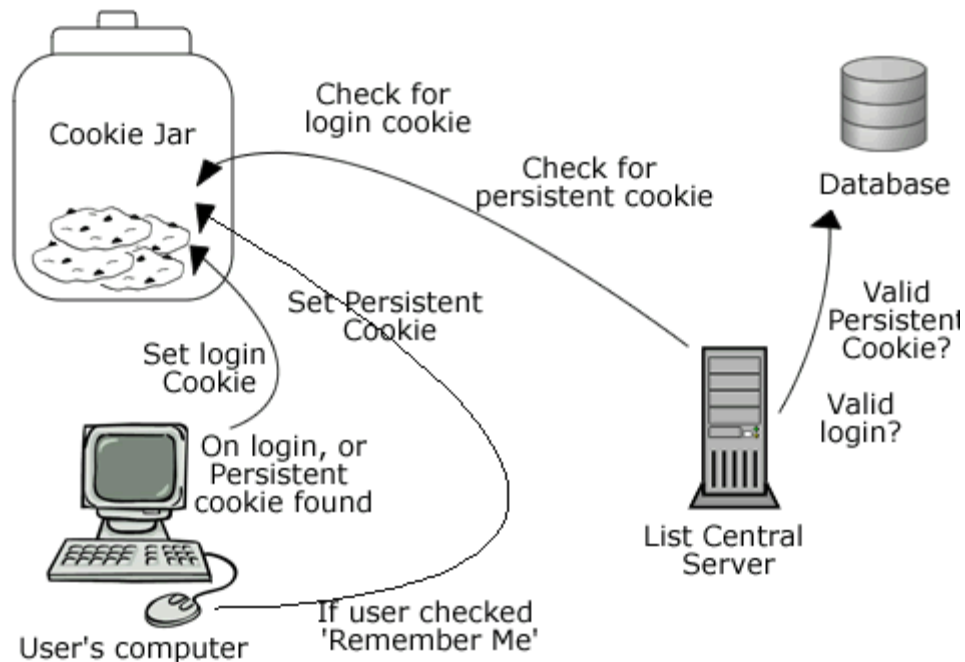
HTTP Session Cookies

A user's session for a website exists in temporary memory only while the user is reading and navigating the website. Web browsers normally delete session cookies when the user closes the browser.



Persistent cookie

A persistent cookie will outlast user sessions. If a persistent cookie has its Max-Age set to 1 year, then, within the year, the initial value set in that cookie would be sent back to the server every time the user visited the server.



Secure cookie

A secure cookie has the secure attribute enabled and is only used via HTTPS, ensuring that the cookie is always encrypted when transmitting from client to server. This makes the cookie less likely to be exposed to cookie theft via eavesdropping.
(Java's Cookie class has a `setSecure(bool flag)` method)

HttpOnly cookie

The HttpOnly cookie is supported by most modern browsers. On a supported browser, an HttpOnly session cookie will be used only when transmitting HTTP (or HTTPS) requests, thus restricting access from other, non-HTTP APIs (such as JavaScript). This feature applies only to session-management cookies, and not other browser cookies.
(Java's Cookie class has a [setHttpOnly](#)(boolean isHttpOnly) method)

Third-party cookie

First-party cookies are cookies set with the same domain (or its subdomain) as your browser's address bar. Third-party cookies are cookies set with domains different from the one shown on the address bar.

The web pages on the first domain may feature content from a third-party domain, images or a banner advert run by www.advexample.com.

Cookies that are set during retrieval of these components are called third-party cookies.

Privacy setting options in most modern browsers allow you to block third-party tracking cookies, but they do allow third-party cookies by default.

New EU Cookie law

Nye regler om lagring af cookies og lignende teknologier



- Session Tracking
- Personalization
- Tracking

