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DEPARTMENT OF INFORMATION TECHNOLOGY

19CSB302 – COMPUTER NETWORKS

III YEAR V SEM

UNIT 5 – APPLICATION LAYER

WWW

*ertext Transfer Protocol (HTTP) is a protocol
inly to access data on the World Wide Web.
TP functions as a combination of
and SMTP*

discussed in this section:

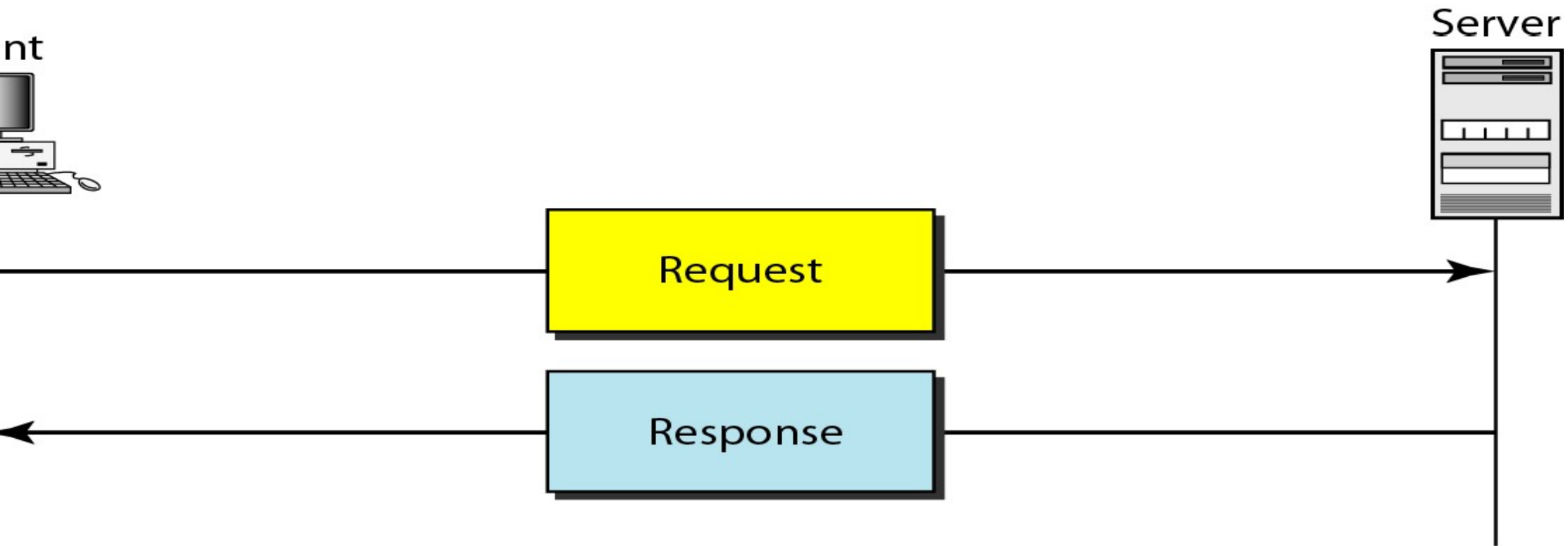
Transaction

Versus Nonpersistent Connection

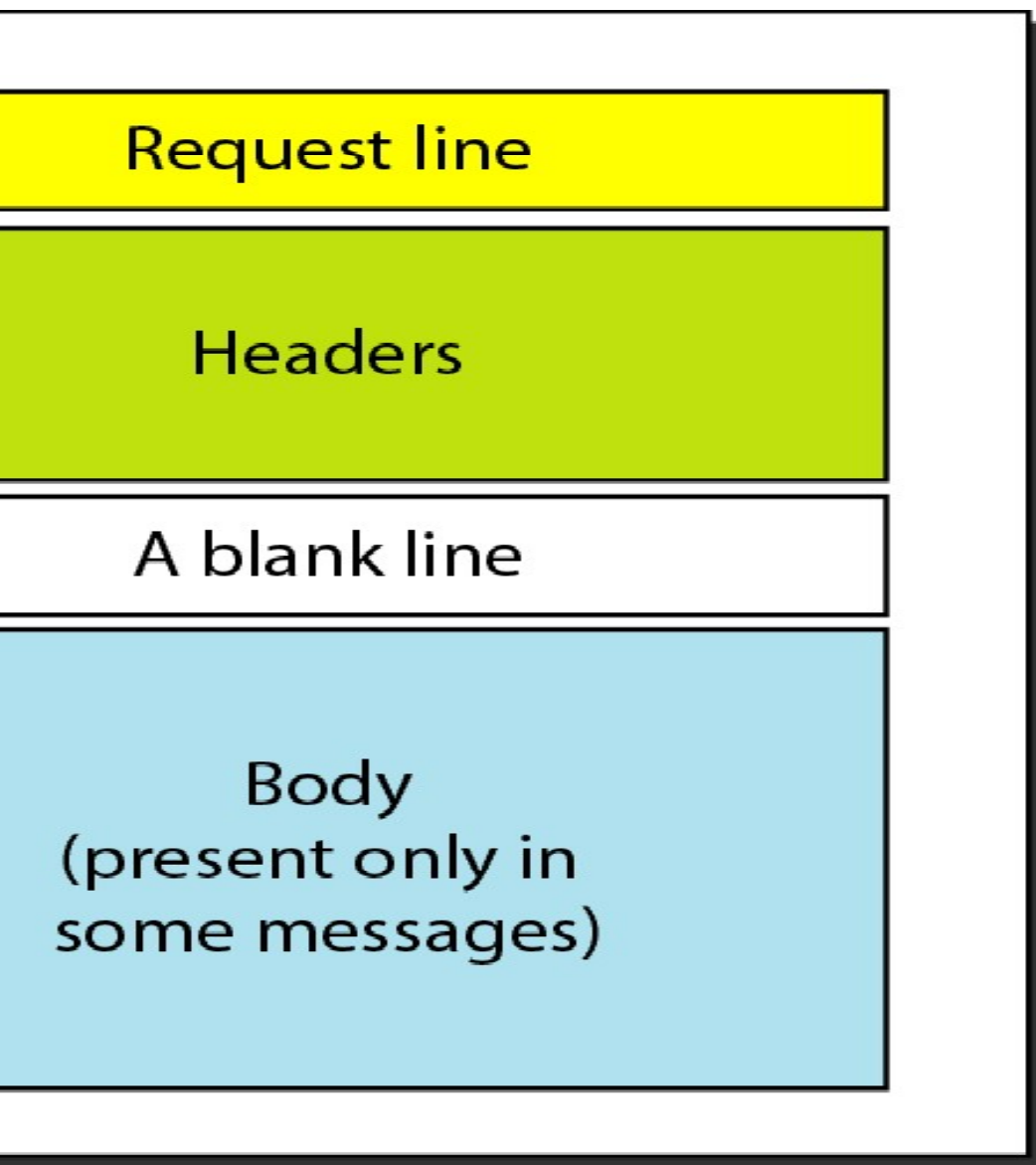


P uses the services of TCP on well-known port 80.

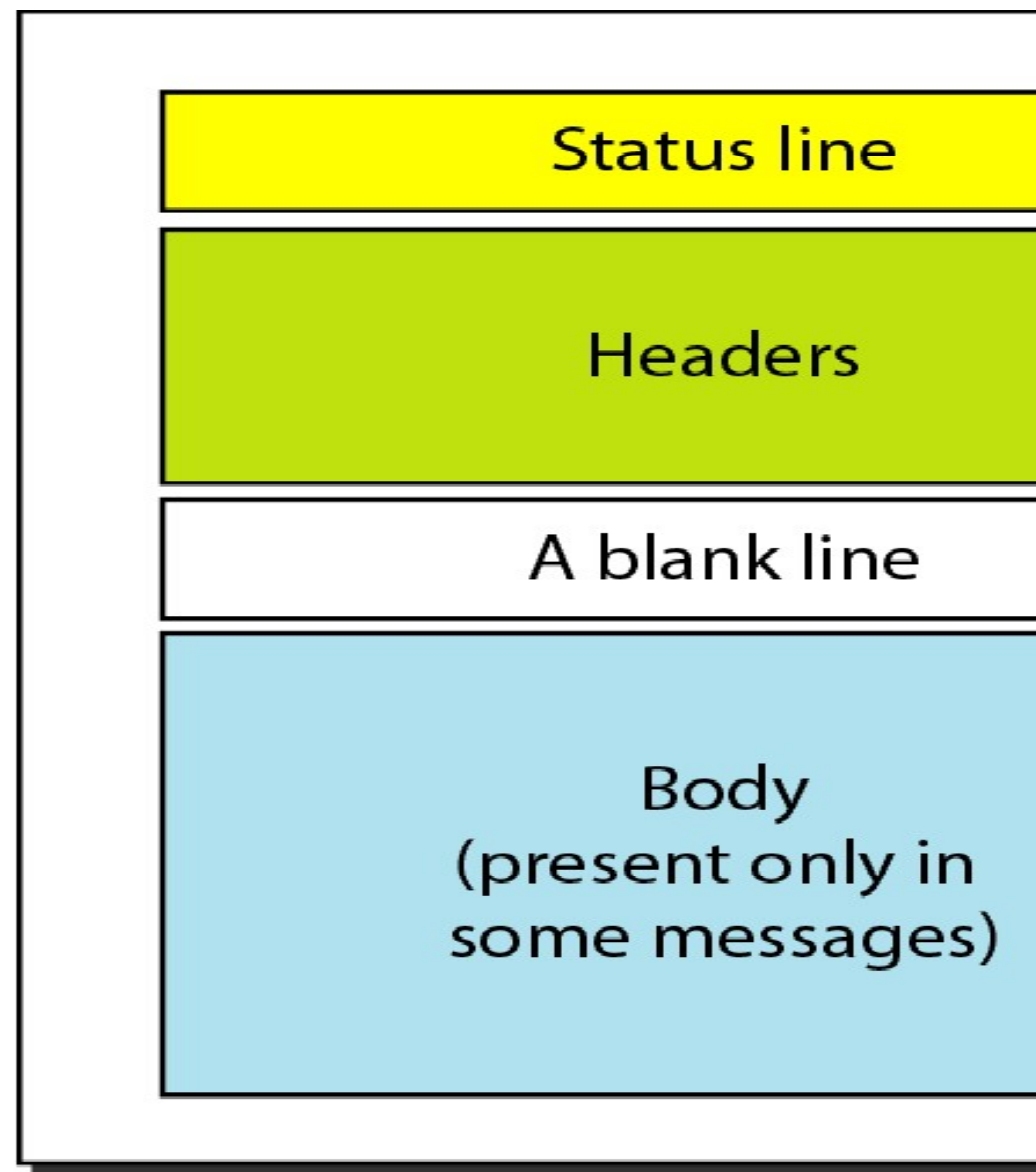
27.12 *HTTP transaction*



27.13 *Request and response messages*



Request message



Response message

27.14 *Request and status lines*

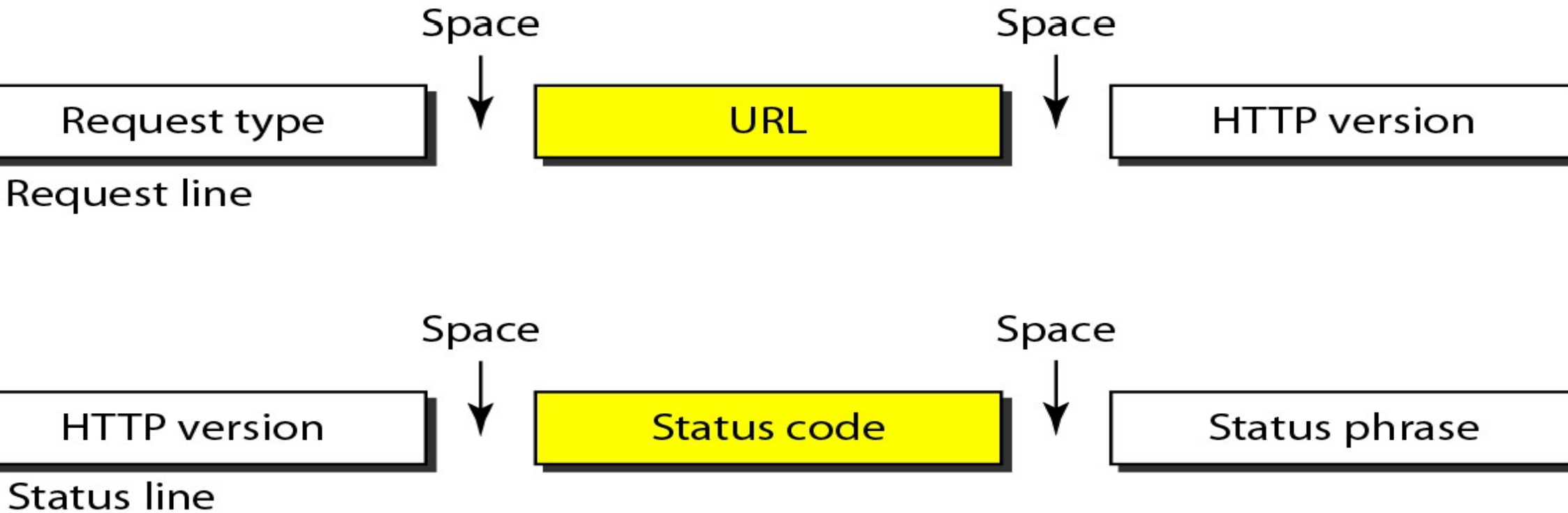


Table 27.1 *Methods*

<i>Method</i>	<i>Action</i>
	Requests a document from the server
	Requests information about a document but not the document
	<i>Sends some information from the client to the server</i>
	Sends a document from the server to the client
HEAD	Echoes the incoming request
CONNECT	Reserved
OPTIONS	Inquires about available options

Table 27.2 *Status codes*

<i>Phrase</i>	<i>Description</i>
Informational	
Continue	The initial part of the request has been received, and the client may continue with its request.
Switching	The server is complying with a client request to switch protocols defined in the upgrade header.
Success	
OK	The request is successful.
Created	A new URL is created.
Accepted	The request is accepted, but it is not immediately acted upon.
No content	There is no content in the body.

	<i>Phrase</i>	<i>Description</i>
Redirection		
	Moved permanently	The requested URL is no longer used by the server.
	Moved temporarily	The requested URL has moved temporarily.
	Not modified	The document has not been modified.
Client Error		
	Bad request	There is a syntax error in the request.
	Unauthorized	The request lacks proper authorization.
	Forbidden	Service is denied.
	Not found	The document is not found.
	Method not allowed	The method is not supported in this URL.
	Not acceptable	The format requested is not acceptable.
Server Error		
	Internal server error	There is an error, such as a crash, at the server site.
	Not implemented	The action requested cannot be performed.
	Service unavailable	The service is temporarily unavailable, but may be re- in the future.

27.15 *Header format*

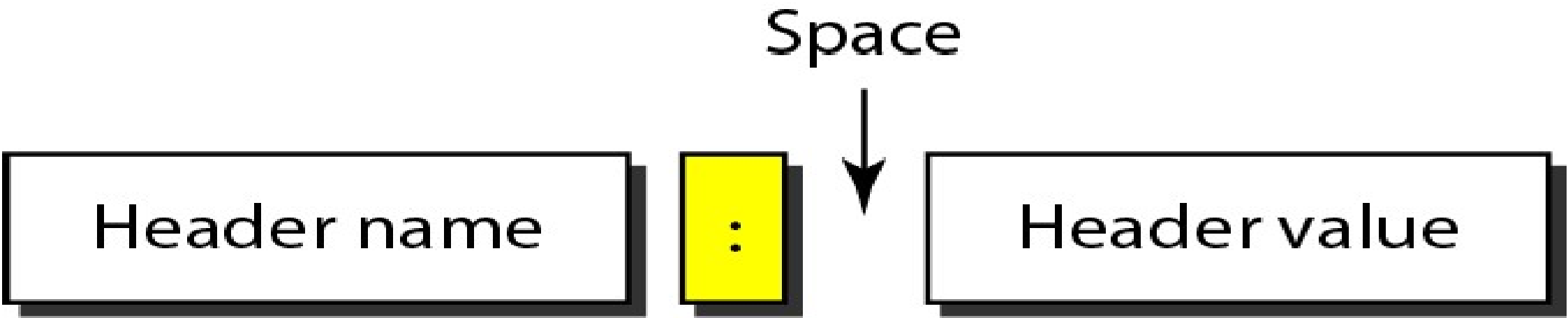


Table 27.3 General headers

<i>Header</i>	<i>Description</i>
Cache-control	Specifies information about caching
Connection	Shows whether the connection should be closed or not
Date	Shows the current date
MIME-version	Shows the MIME version used
Upgrade	Specifies the preferred communication protocol

Table 27.4 Request headers

<i>Header</i>	<i>Description</i>
accept	Shows the medium format the client can accept
accept-charset	Shows the character set the client can handle
accept-encoding	Shows the encoding scheme the client can handle
accept-language	Shows the language the client can accept
authorization	Shows what permissions the client has
from	Shows the e-mail address of the user
host	Shows the host and port number of the server
if-modified-since	Sends the document if newer than specified date
if-match	Sends the document only if it matches given tag
if-non-match	Sends the document only if it does not match given
if-range	Sends only the portion of the document that is mis
if-unmodified-since	Sends the document if not changed since specified
referer	Specifies the URL of the linked document
user-agent	Identifies the client program

Table 27 5 *Response headers*

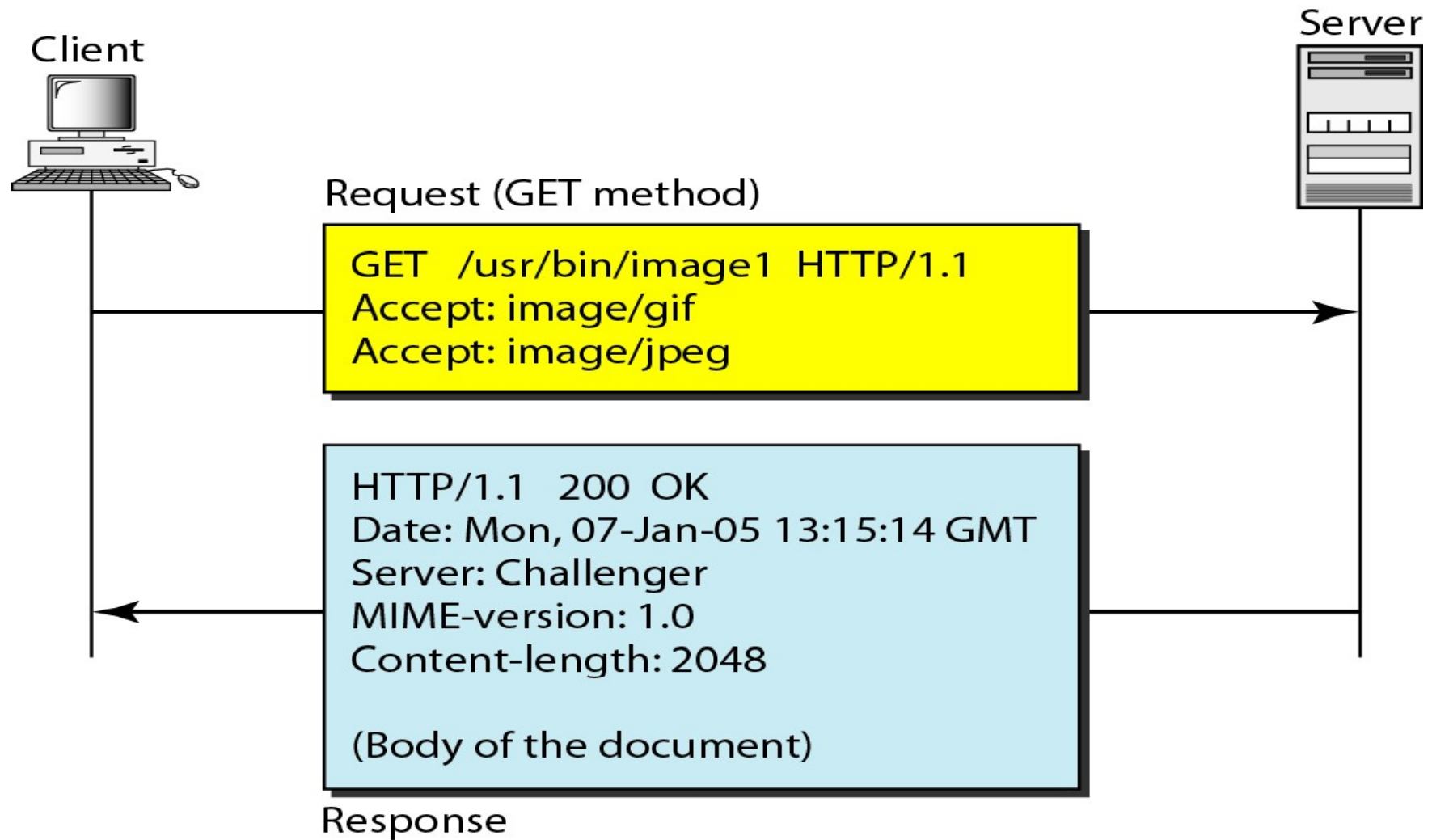
<i>Header</i>	<i>Description</i>
Accept-range	Shows if server accepts the range requested by client
Age	Shows the age of the document
Public	Shows the supported list of methods
Retry-after	Specifies the date after which the server is available
Server	Shows the server name and version number

Table 27.6 *Entity headers*

<i>Header</i>	<i>Description</i>
allow	Lists valid methods that can be used with a URL
content-encoding	Specifies the encoding scheme
content-language	Specifies the language
content-length	Shows the length of the document
content-range	Specifies the range of the document
content-type	Specifies the medium type
etag	Gives an entity tag
expires	Gives the date and time when contents may change
last-modified	Gives the date and time of the last change
location	Specifies the location of the created or moved document

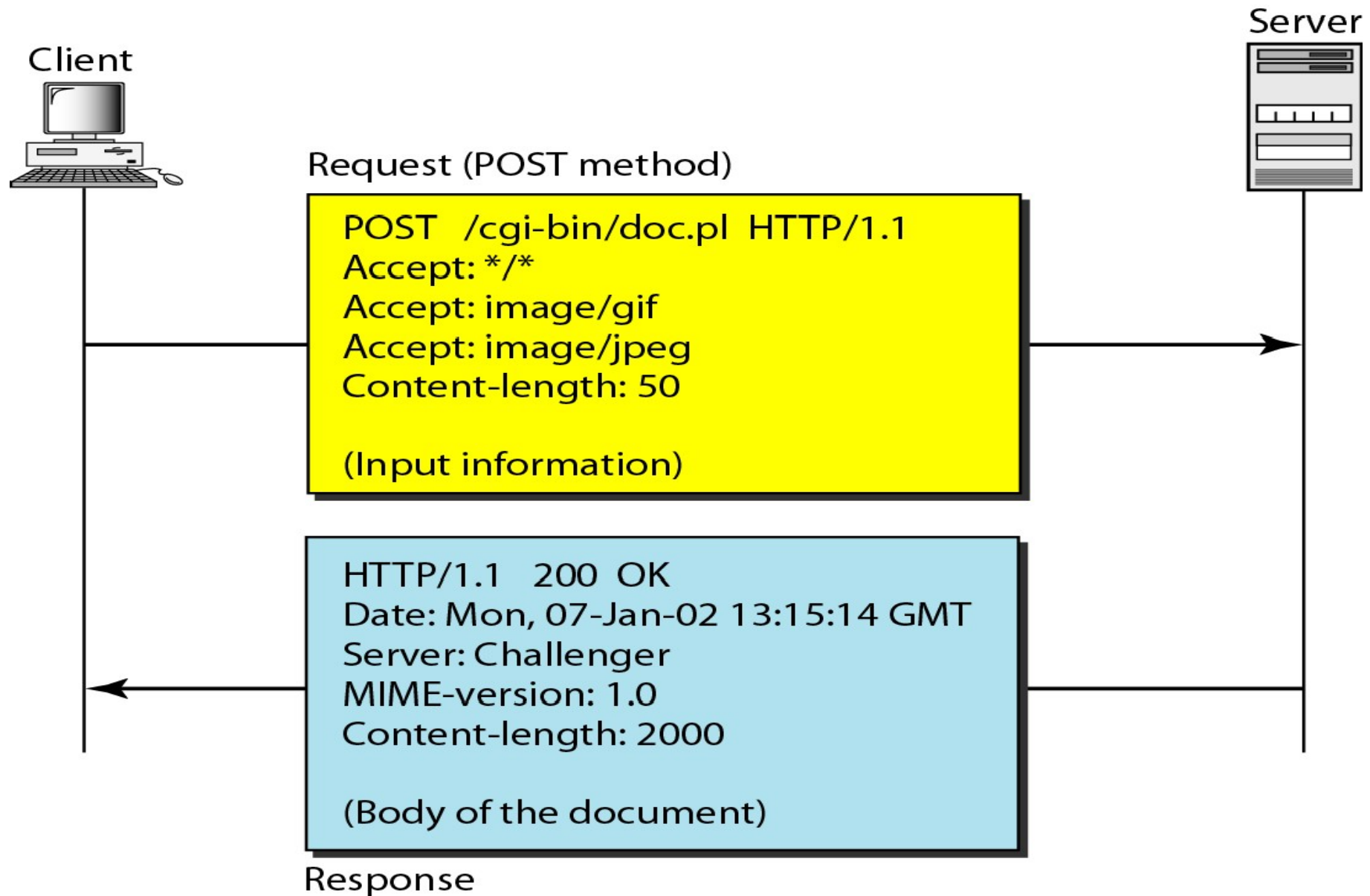
Example retrieves a document. We use the GET method to retrieve an image with the path /usr/bin/image1. The request message shows the method (GET), the URL, and the HTTP version. The header has two lines that show that the client wants images in the GIF or JPEG format. The request message has a body. The response message contains the status code and four lines of header. The header lines define the status code, MIME version, and length of the document. The document follows the header (see Figure 27.16).

27.16 Example 27.1



example, the client wants to send data to the server using the POST method. The request line shows the request method, the URL, and HTTP version (1.1). There are four header lines. The request body contains the input information. The response message contains the status line and four header lines. The response body contains the HTML document, which is a CGI document, as the body (see Figure 27.17).

27.17 Example 27.2



uses ASCII characters. A client can directly connect to the server using TELNET, which logs into port 80 (the default port for HTTP). The next three lines show that the connection is successful. We then type three lines. The first shows the request method (GET method), the second is the header (Host: www.python.org), the third is a blank line, terminating the request. The response is seven lines starting with the status line (200 OK) and ending with the blank line at the end terminates the server response. A total of 14,230 lines is received after the blank line (shown here). The last line is the output by the client.

www.mhhe.com 80

198.45.24.104 . . .

connected to www.mhhe.com (198.45.24.104).

The character is '^]'.
^]_

ngcs/compsci/forouzan HTTP/1.1

forouzanbehrouz@fhda.edu

HTTP/1.1 200 OK

Mon, 28 Oct 2004 16:27:46 GMT

Server: Apache/1.3.9 (Unix) ApacheJServ/1.1.2 PHP/4.1.2 PHP

version:1.0

Content-Type: text/html



FTP version 1.1 specifies a persistent connection by default.

Thank You