



UNIVERSITAS
GADJAH MADA

HTTP

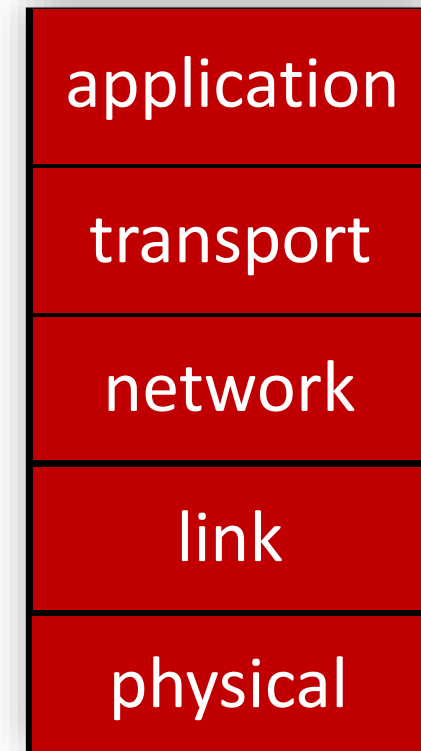
Muhammad Alfian Amrizal

Layered Internet protocol stack



UNIVERSITAS GADJAH MADA

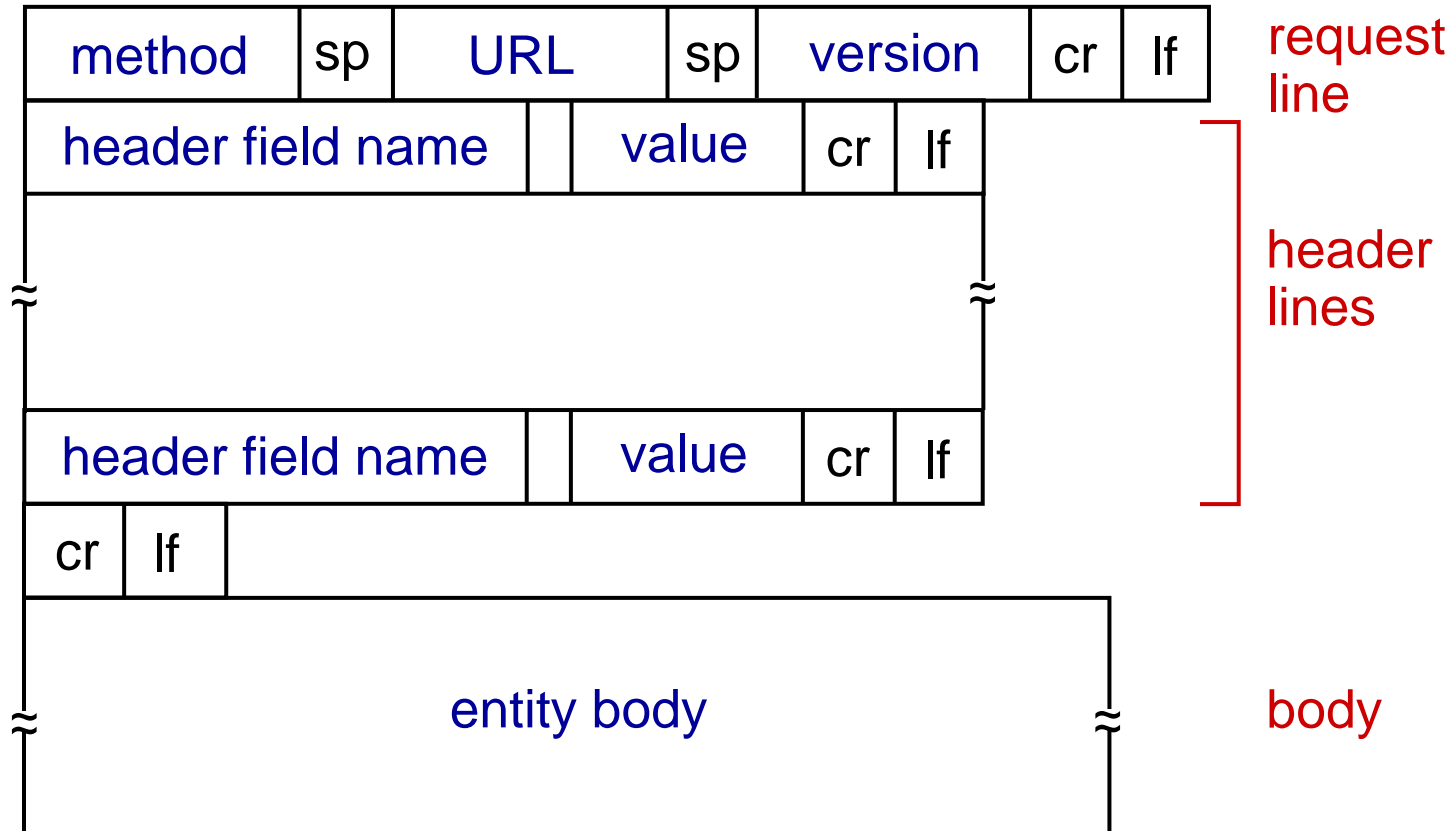
- *application*: supporting network applications
 - HTTP, IMAP, SMTP, DNS
- *transport*: process-process data transfer
 - TCP, UDP
- *network*: routing of datagrams from source to destination
 - IP, routing protocols
- *link*: data transfer between neighboring network elements
 - Ethernet, 802.11 (WiFi), PPP
- *physical*: bits “on the wire”



An application-layer protocol defines:

- types of messages exchanged,
 - e.g., request, response
- message syntax:
 - what fields in messages & how fields are delineated
- message semantics
 - meaning of information in fields
- rules for when and how processes send & respond to messages

HTTP request message: general format



HTTP request message

- two types of HTTP messages: *request, response*
- HTTP request message:
 - ASCII (human-readable format)

request line (GET, POST, HEAD commands) → GET /index.html HTTP/1.1¥r¥n

header lines { Host: www-net.cs.umass.edu¥r¥n
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:80.0) Gecko/20100101 Firefox/80.0 ¥r¥n
Accept: text/html,application/xhtml+xml¥r¥n
Accept-Language: en-us,en;q=0.5¥r¥n
Accept-Encoding: gzip,deflate¥r¥n
Connection: keep-alive¥r¥n
¥r¥n

carriage return, line feed at start of line indicates end of header lines →

carriage return character
line-feed character

Other HTTP request messages

POST method:

- web page often includes form input
- user input sent from client to server in entity body of HTTP POST request message

GET method (for requesting data to server):

- include requested data in URL field of HTTP GET request message:
GET www.someschool.edu/index.html HTTP/1.1

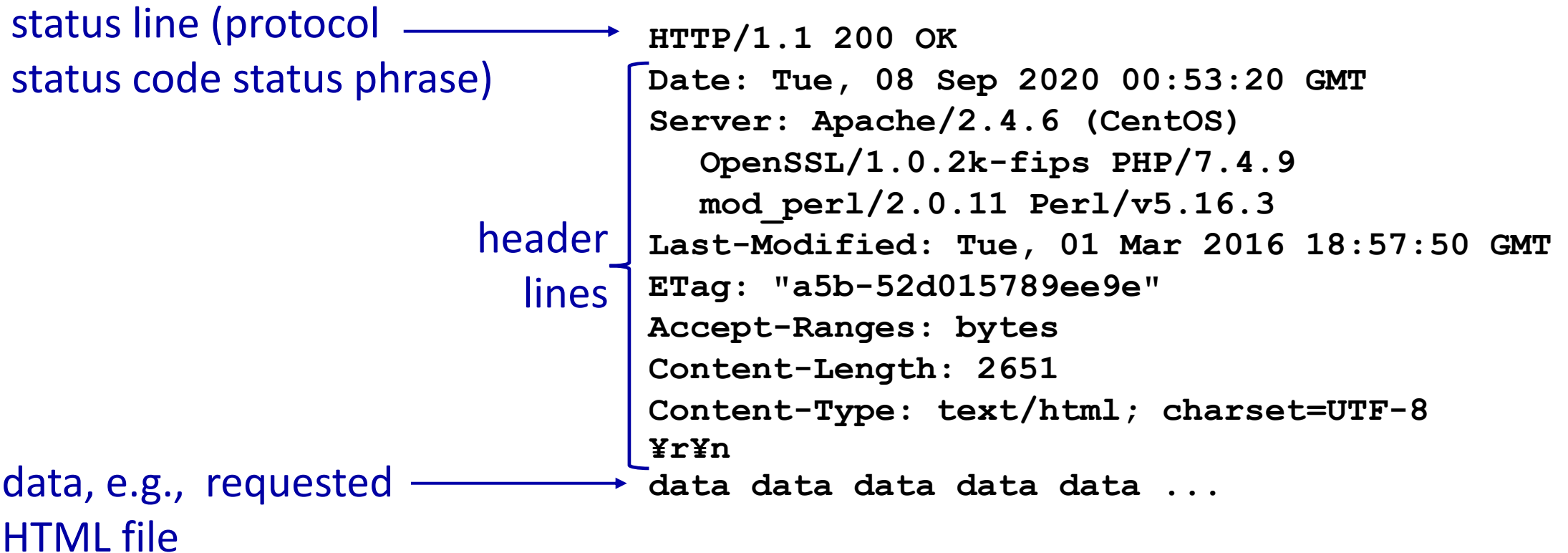
HEAD method:

- requests headers (only) that would be returned *if* specified URL were requested with an HTTP GET method.

PUT method:

- uploads new file (object) to server
- completely replaces file that exists at specified URL with content in entity body of POST HTTP request message

HTTP response message



HTTP response status codes

- status code appears in 1st line in server-to-client response message.
- some sample codes:

200 OK

- request succeeded, requested object later in this message

301 Moved Permanently

- requested object moved, new location specified later in this message (in Location: field)

400 Bad Request

- request msg not understood by server

404 Not Found

- requested document not found on this server

505 HTTP Version Not Supported