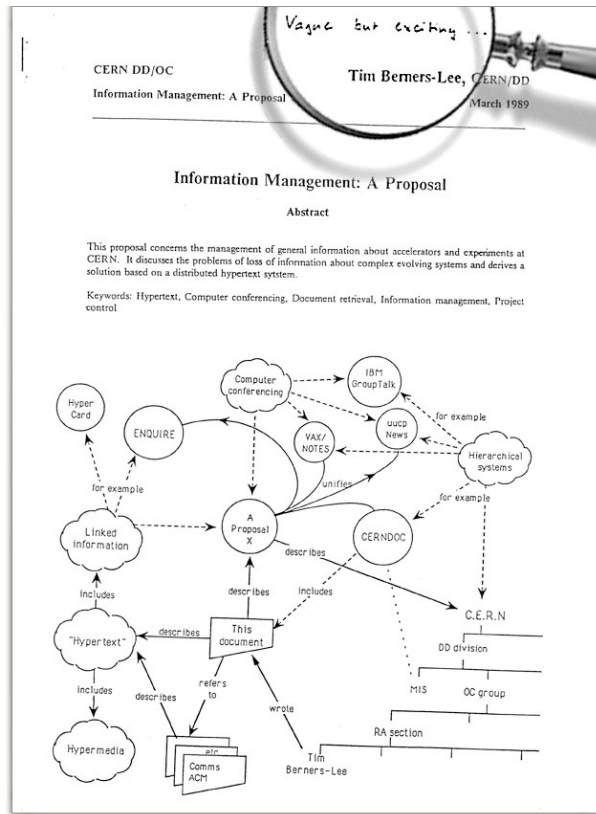# HTML
http Uvod

The Web: origins

Tim Berners-Lee: a way to manage and access documents at CERN research lab

Info containing links to other info, accessible remotely, through a standardized mechanism.

Web and HTTP: Some terms

- HTTP stands for "HyperText Transfer Protocol"
- A web page consists of many objects
- Object can be HTML file, JPEG image, video stream chunk, audio file,…
- Web page consists of base HTML-file which includes several referenced objects.
- Each object is addressable by a uniform resource locator (URL)
  - sometimes also referred to as uniform resource identifier (URI)
- Example URL:
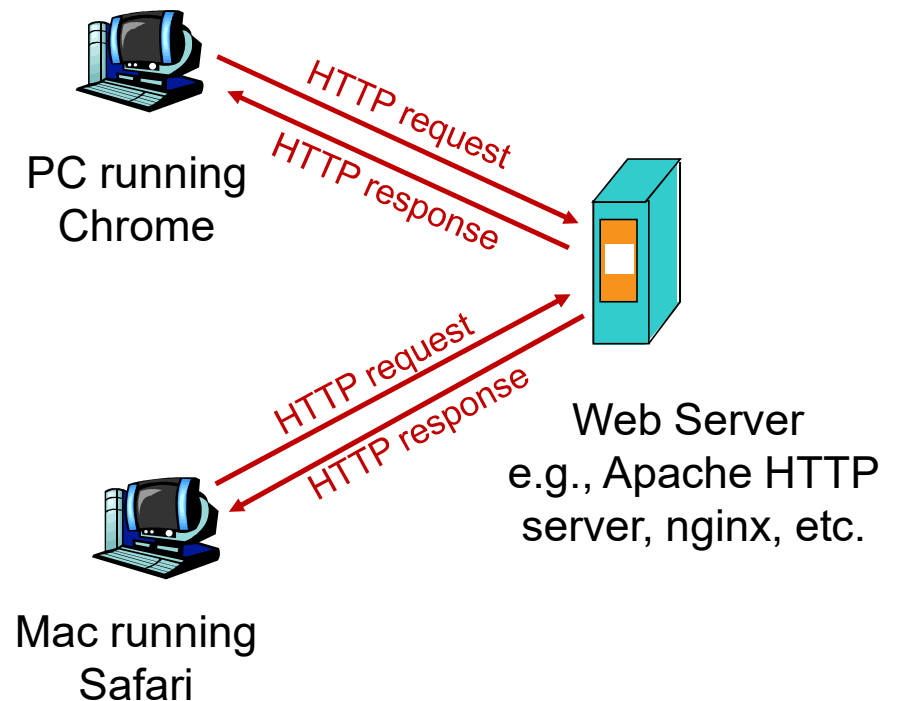
```
www.cs.rutgers.edu/~sn624/index.html
```
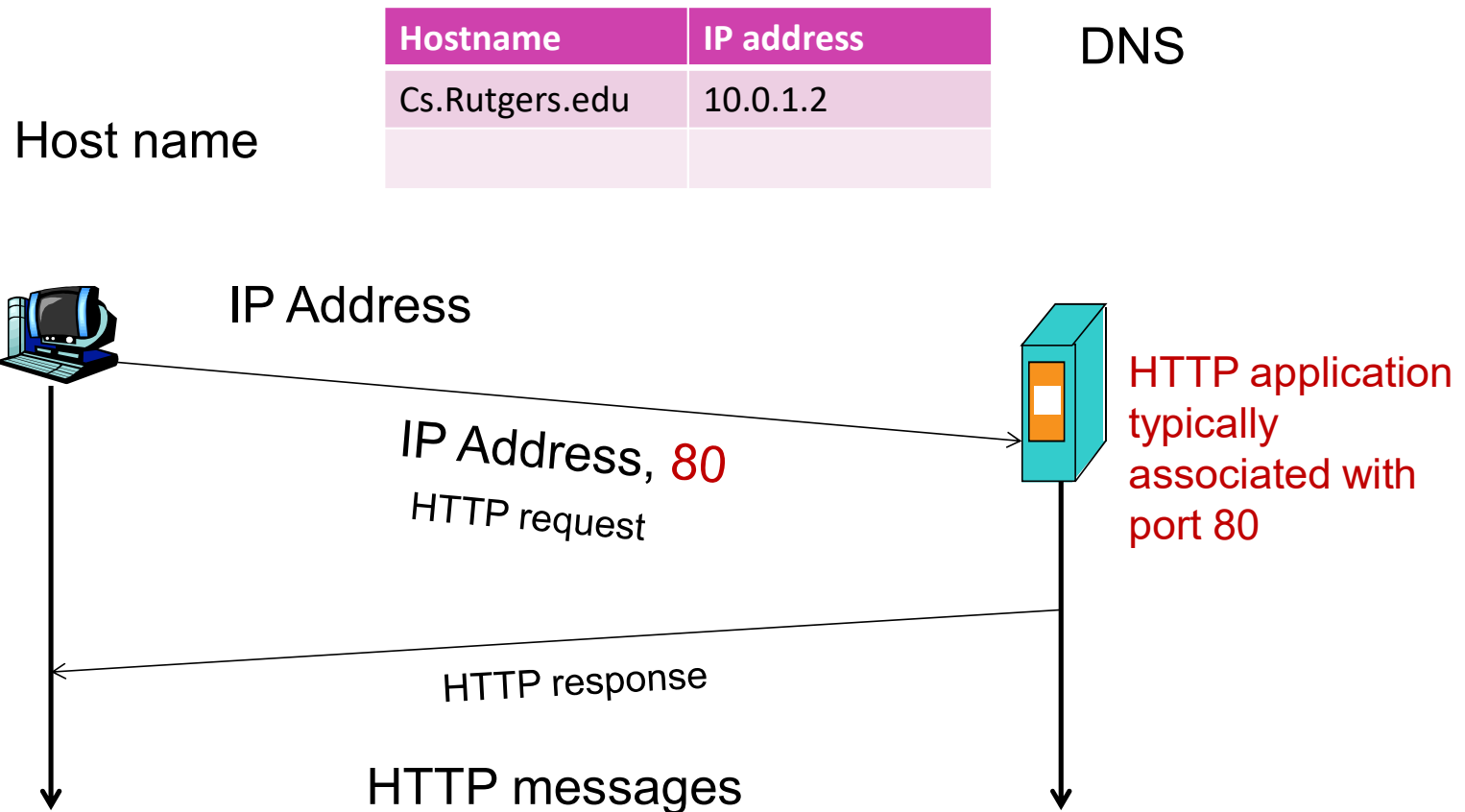
host name   path name

HTTP overview

HTTP: hypertext transfer protocol

- Client/server model
  - *Client:* browser that requests, receives, "displays" Web objects
  - *Server:* Web server sends objects in response to requests

PC running Chrome

HTTP request

HTTP response

HTTP request

HTTP response

Mac running Safari

Web Server e.g., Apache HTTP server, nginx, etc.

ALGEBRA

Client server connection

Hostname	IP address
Cs.Rutgers.edu	10.0.1.2

DNS

Host name

IP Address

IP Address, 80

HTTP request

HTTP application typically associated with port 80

HTTP response

HTTP messages

HTTP messages: request message

- ASCII (human-readable format)
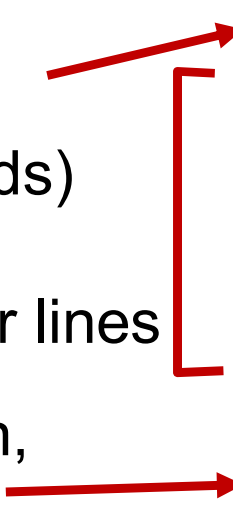
request line
(GET, POST,
HEAD commands)

GET /352/syllabus.html HTTP/1.1
Host: www.cs.rutgers.edu
User-agent: Mozilla/4.0
Connection: close
Accept-language:en

Header lines

Carriage return,
line feed
indicates end
of message

(extra carriage return, line feed)

HTTP Request: General format

method | sp | URL | sp | version | cr | lf — request line
header field name | : | value | cr | lf
header field name | : | value | cr | lf — header lines
cr | lf
Entity Body

http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14

ALGEBRA
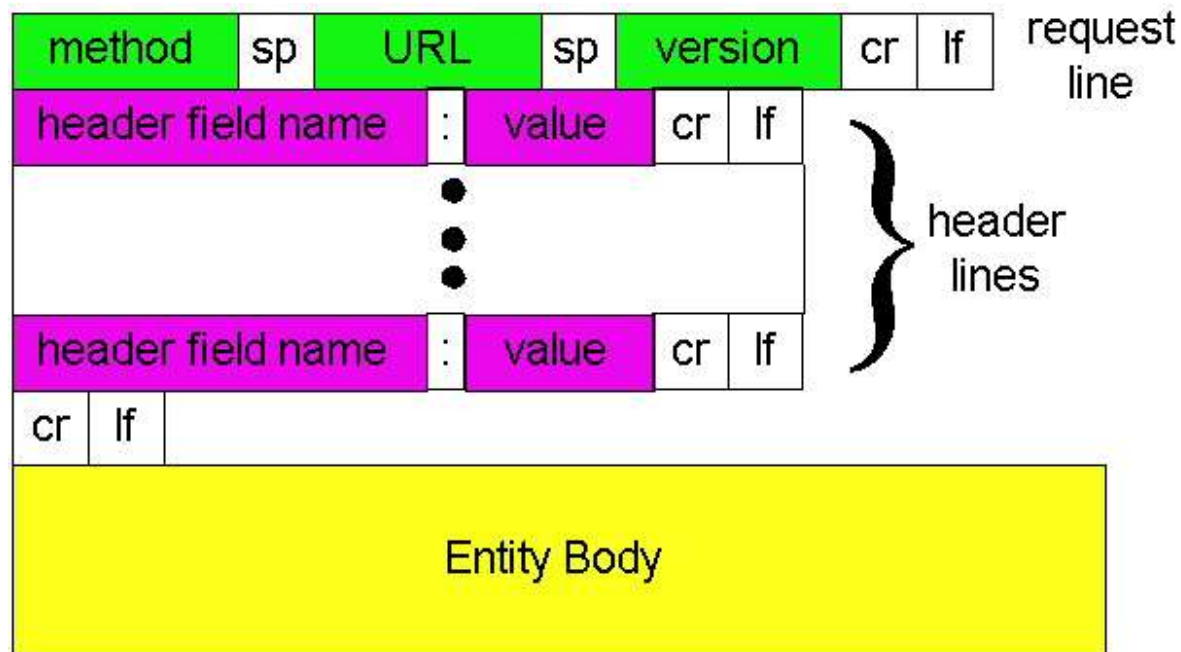
HTTP most common method types

- **GET**
  - Get the resource specified in the requested URL. URL may refer to a data-handling process

- **POST**
  - Send entities (specified in the entity body) to a data-handling process at the requested URL – create new resource

- **PATCH**
  - Update part of a resource at the requested URL with the new entity specified in the entity body

- **PUT**
  - Update a resource at the requested URL with the new entity specified in the entity body

- **DELETE**
  - Deletes file specified in the URL

ALGEBRA

Uploading form input: GET and POST

POST method:
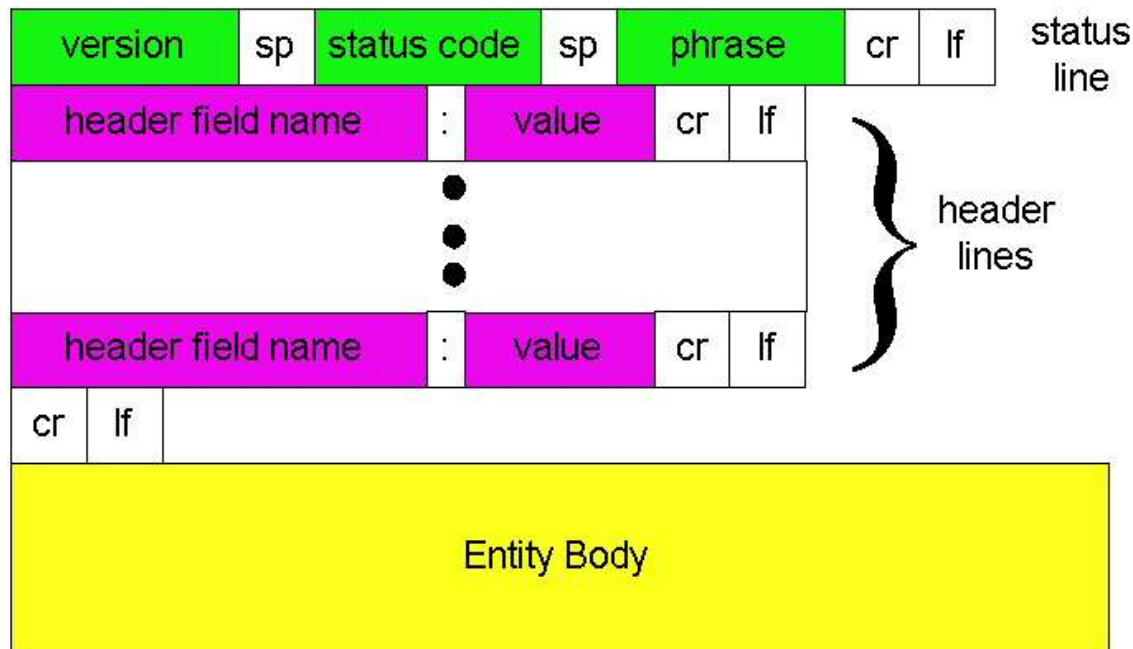
- Web page often includes form input

- Input is uploaded to server in entity body

- Posted content not visible in the URL
  - Free form content (ex: images) can be posted since entity body interpreted as data bytes
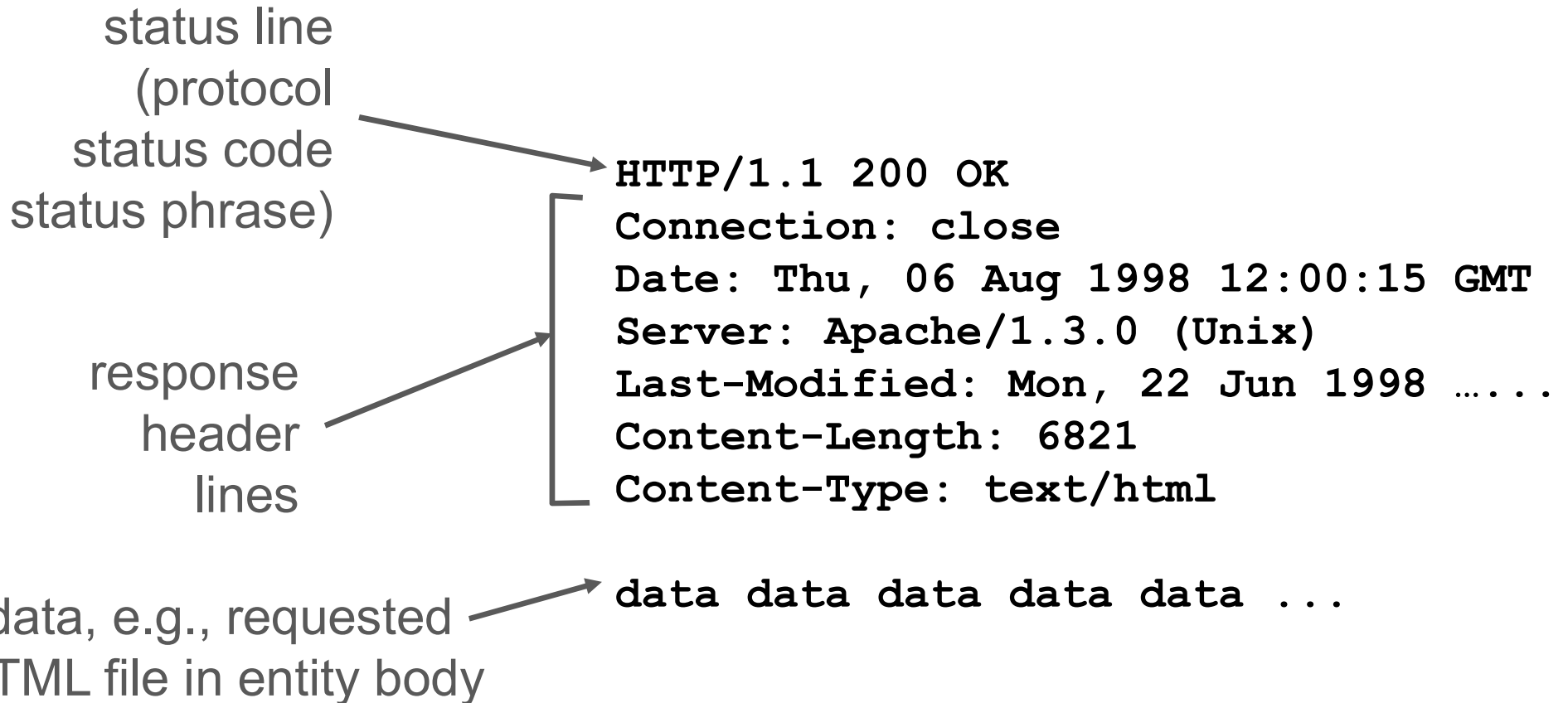
GET method:

- Entity body is empty

- Input is uploaded in URL field of request line

- Example:
  - http://site.com/form?first=jane&last=austen

HTTP Response: General format

Unlike HTTP request, No method name

HTTP message: response message

status line
(protocol
status code
status phrase)

```
HTTP/1.1 200 OK
Connection: close
Date: Thu, 06 Aug 1998 12:00:15 GMT
Server: Apache/1.3.0 (Unix)
Last-Modified: Mon, 22 Jun 1998 …...
Content-Length: 6821
Content-Type: text/html
```

response
header
lines

data, e.g., requested
HTML file in entity body

```
data data data data data ...
```

HTTP response status codes

In first line in server->client response message.
A few 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 (Location:)

403 Forbidden

- Insufficient permissions to access the resource

404 Not Found

- requested document not found on this server

505 HTTP Version Not Supported

Hvala na pažnji!