

HTTP – a protocol example

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HTTP is a language

- HTTP = HyperText Transfer Protocol
- a protocol = a language
- HTTP = a language

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HTTP is a language?

- Who speaks it?
- What do they discuss?
- What's it like?

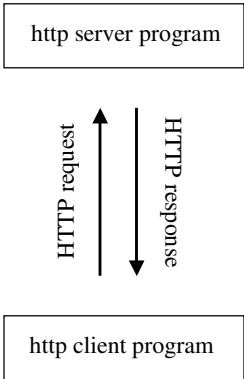
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HTTP as a language

- spoken between pairs of programs
 - an http client program
 - an http server program
 - they're written specially to speak it
- discussing server giving objects it houses to client
- simple request-response behavior

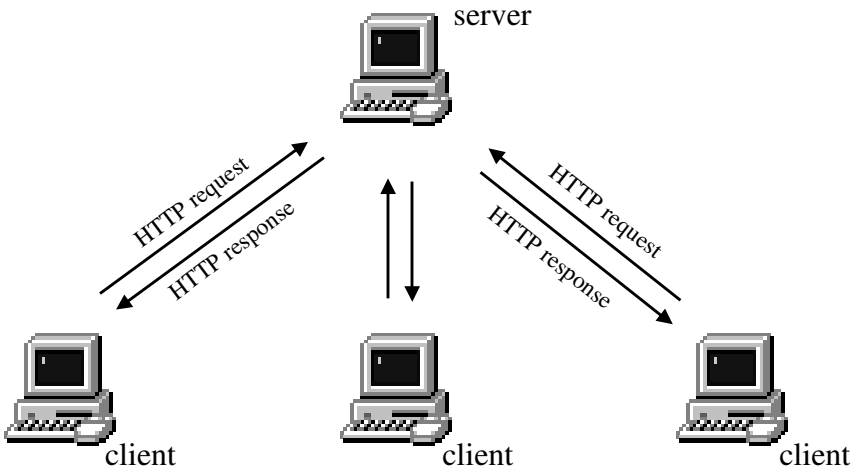
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An HTTP conversation



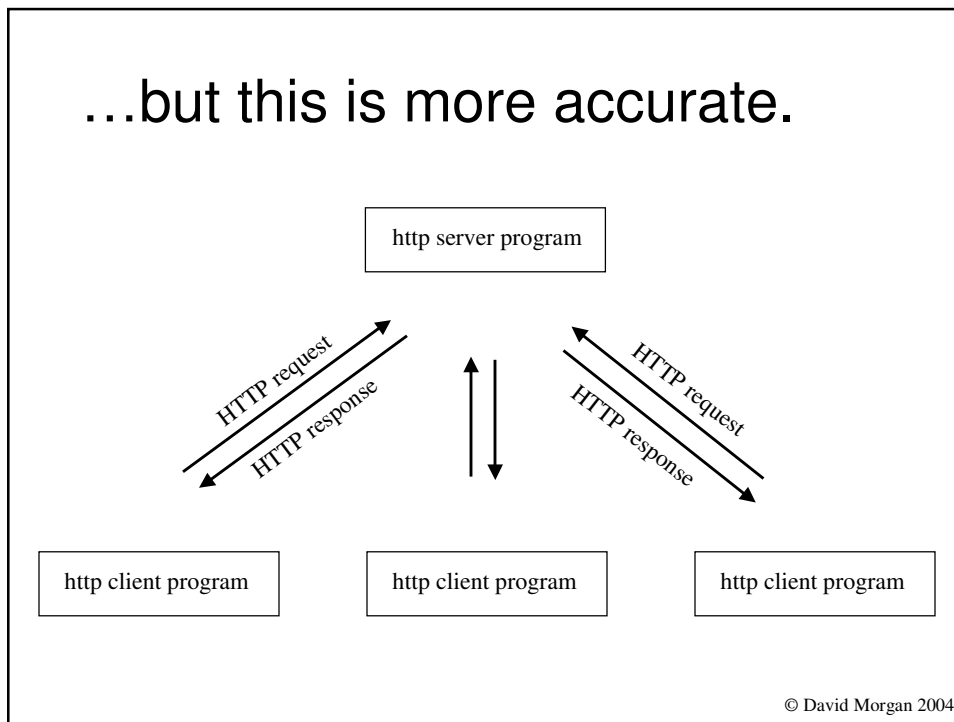
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I saw this in a book...



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...but this is more accurate.

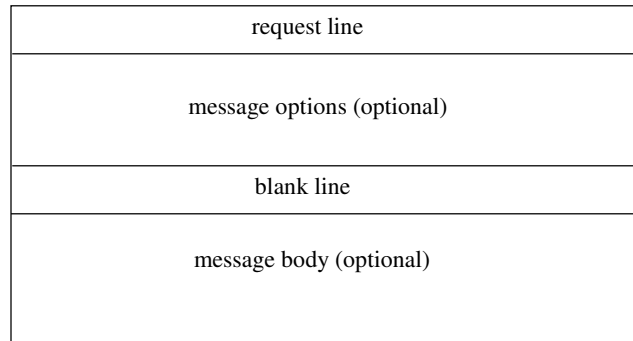


HTTP particles of speech

- HTTP messages
- 2 kinds
 - request messages
 - response messages
- written in ASCII

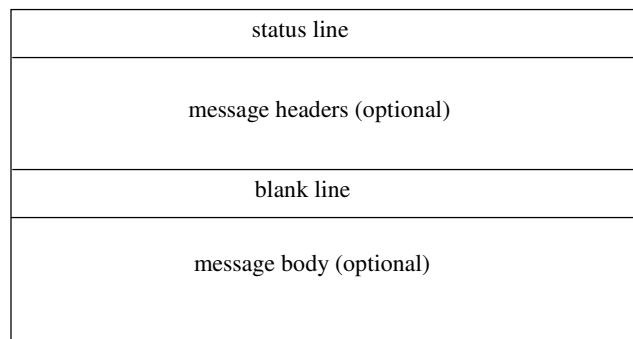
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HTTP request message format



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HTTP reply message format



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Sample HTTP request message

```
GET /morgan_david/ HTTP/1.0\r\n
Connection: Keep-Alive\r\n
User-Agent: Mozilla/4.61 [en] (X11; I; Linux 2.2.12-20 i686)\r\n
Host: homepage.smc.edu\r\n
Accept: image/gif, image/x-xbitmap, image/jpeg, image/pjpeg, image/png, */*\r\n
Accept-Encoding: gzip\r\n
Accept-Language: en\r\n
Accept-Charset: iso-8859-1,*,utf-8\r\n
\r\n
\r\n
```

request line

message options

blank line

no message body

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...corresponding reply message

```
HTTP/1.1 200 OK\r\n
Server: Microsoft-IIS/4.0\r\n
Connection: keep-alive\r\n
Content-Location: http://homepage.smc.edu/morgan_david/Default.htm\r\n
Date: Fri, 27 Sep 2002 07:56:28 GMT\r\n
Content-Type: text/html\r\n
Accept-Ranges: bytes\r\n
Last-Modified: Fri, 13 Sep 2002 19:50:05 GMT\r\n
ETag: "b2998dc15e5bc21:7f7f8"\r\n
Content-Length: 1928\r\n
\r\n
<html>
<head>
<meta http-equiv="Content-Type"
" content="text/html; charset=windows-1252">
<meta http-equiv="Content-Language" content="en-us">
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">
<meta name="ProgId" content="FrontPage.Editor.Document">
<title>David Morgan Computer Science Department Santa Monica College</title>
</head>
<body>...
```

status line

message options

blank line

message body

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But, how do they reach each other?

http server program

```
HTTP/1.1 200 OK\r\nServer: Microsoft-IIS/4.0\r\nConnection: keep-alive\r\nContent-Location: http://homepage.smc.edu/morgan_david/Default.htm\r\nDate: Fri, 27 Sep 2002 07:56:28 GMT\r\n---\n<title>David Morgan Computer Science Department Santa Monica College</title>\n</head>\n<body>...
```

http client program

```
GET /morgan_david/ HTTP/1.0\r\nConnection: Keep-Alive\r\nUser-Agent: Mozilla/4.61 [en] (X11; I; Linux 2.2.12-20 i686)\r\nHost: homepage.smc.edu\r\nAccept: image/gif, image/x-bitmap, image/jpeg, image/png, */*\r\nAccept-Encoding: gzip\r\nAccept-Language: en\r\nAccept-Charset: iso-8859-1,*utf-8\r\n\r\n
```

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