



Back-End (Part 1)

Servers, HTTP, URLs

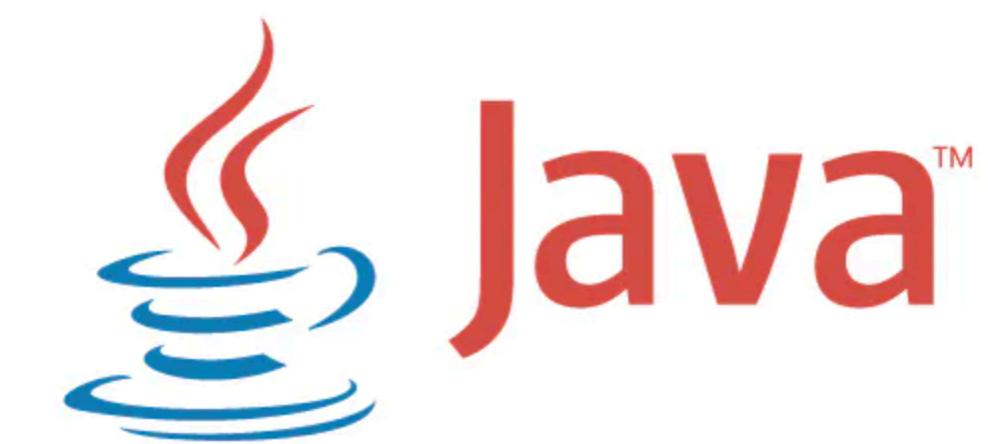
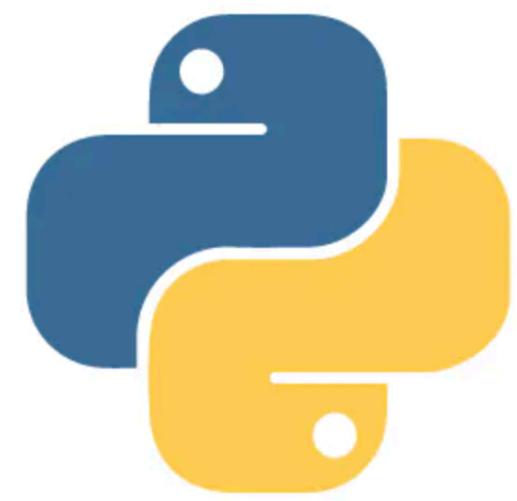
Dr. Omar Hammad



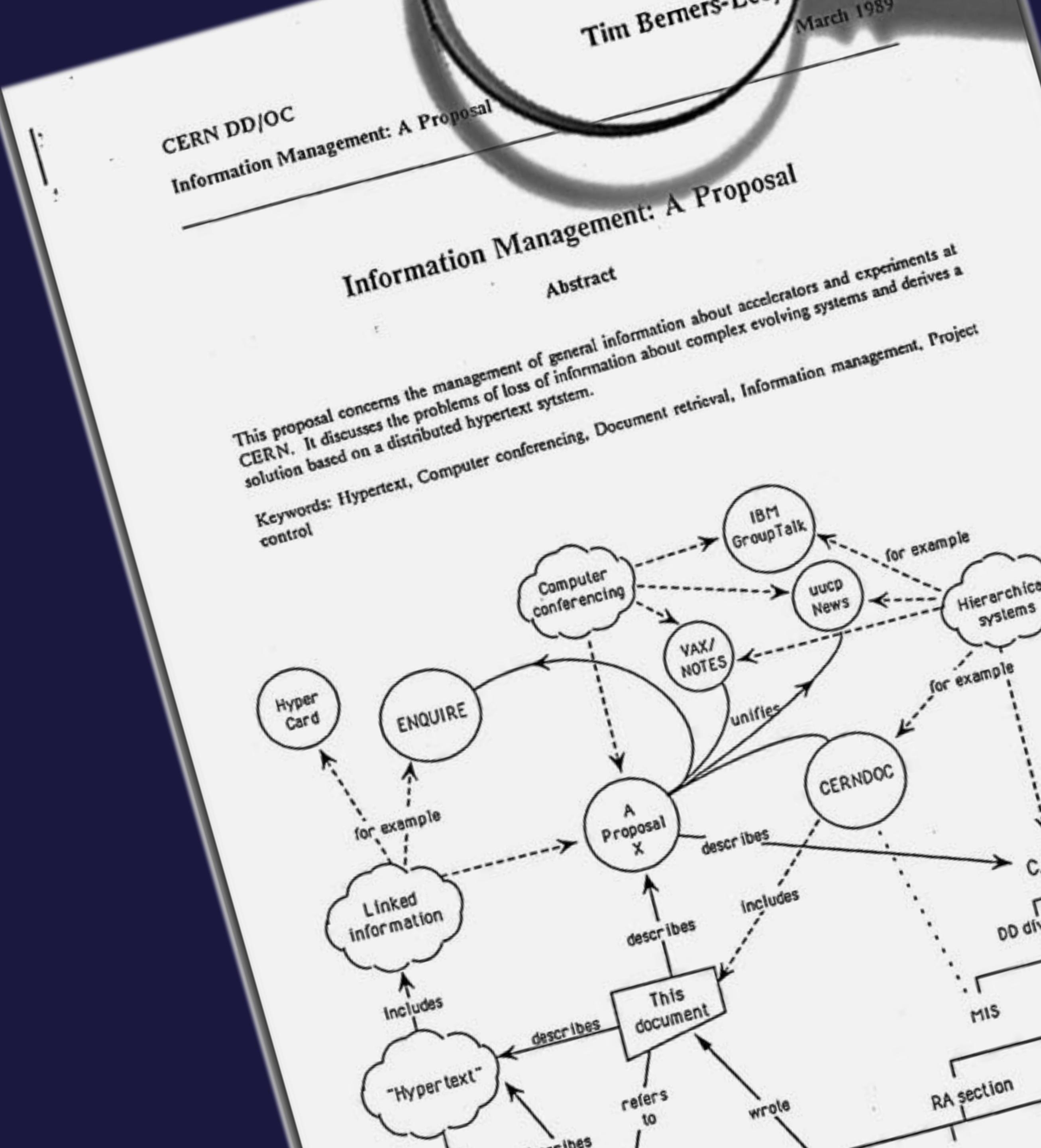


Resource

http://10.13.20.31:2



"Vague but exciting"





Discussion

What is a server

Time of activity

Server

A server is a software or hardware offering a service to a user, usually referred to as client. A hardware server is a shared computer on a network, usually powerful and housed in a data center. A software server (often running on a hardware server) is a program that provides services to client programs or a [user interface](#) to human clients.



Types of servers

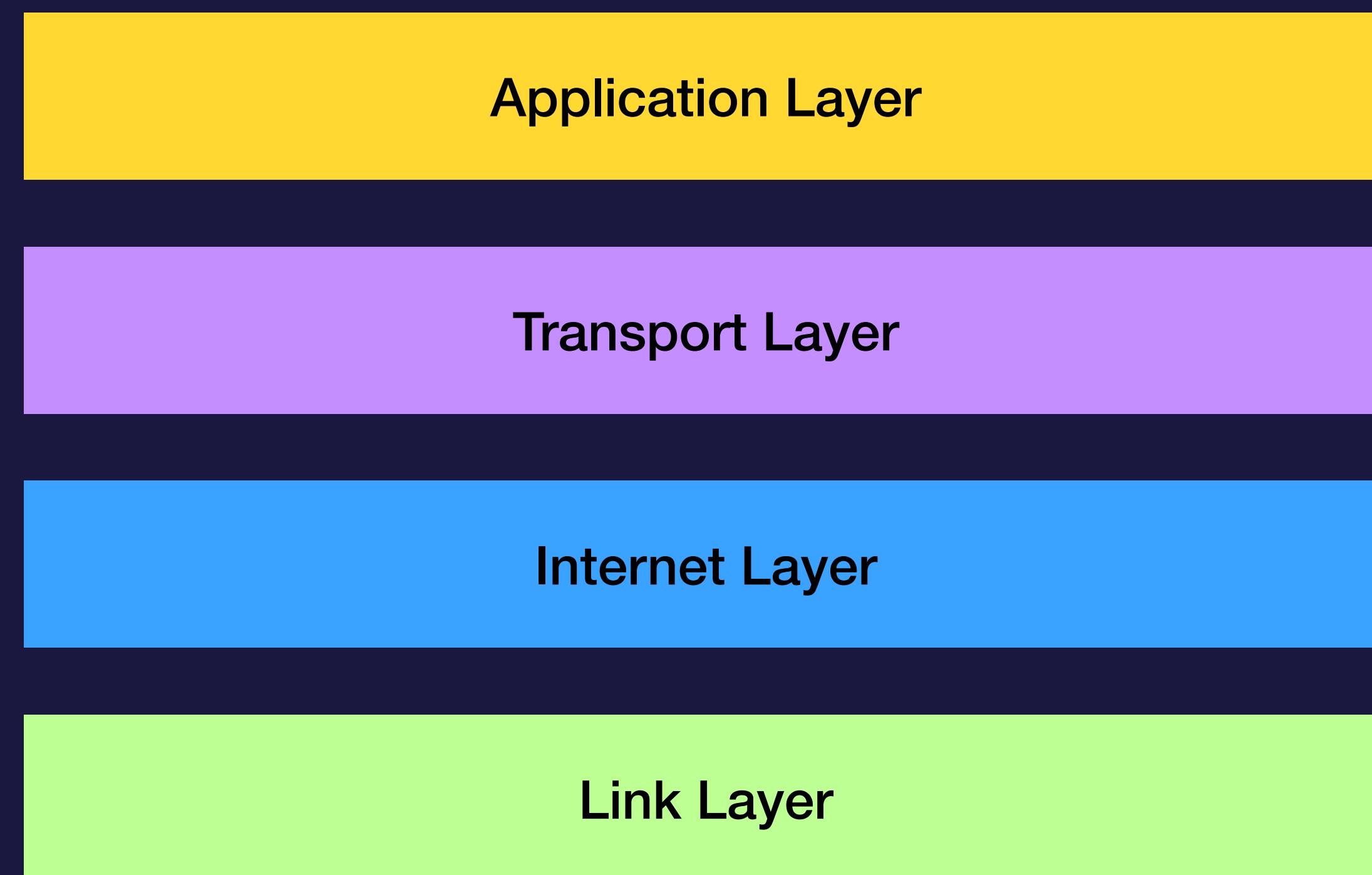
database
application
file
mail
print
game

..



Inspect the network communication

Network Layers



Application Layer

HTTP FTP SSH

HTTP Request

```
GET /software/htp/cics/index.html HTTP/1.1
```

```
Host: www.example.com
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
```

Request line

Headers

Body

HTTP Response

HTTP/1.1 200 OK

Date: Sun, 30 Oct 2023 12:34:56 GMT
Server: Apache/2.4.41 (Unix)
Content-Type: text/html; charset=UTF-8
Content-Length: 1234
Connection: keep-alive

Status line
Headers

```
<!DOCTYPE html>
<html>
<head>
    <title>Example Page</title>
</head>
<body>
    <h1>Hello, World!</h1>
    <p>This is an example HTML page.</p>
</body>
</html>
```

Body

Request Line

GET /api/resource HTTP/1.1

POST /api/create HTTP/1.1

PUT /api/update/123 HTTP/1.1

DELETE /api/delete/456 HTTP/1.1

...

Status Line

HTTP/1.1 200 OK

HTTP/1.1 301 Moved Permanently

HTTP/1.1 404 Not Found

HTTP/1.1 500 Internal Server Error



**Inspect the request
& response**



74.125.24.101

203.0.113.12

74.125.24.101

192.168.1.100

216.58.206.46

172.16.0.254

203.0.113.12

198.51.100.42

10.0.0.1

<http://192.168.100.2:2>



DNS

Domain Name System

Domain Name	IP Address
example.com	192.168.1.100
testdomain.net	10.0.0.1
fakewebsite.org	172.16.0.254
mydomain.biz	203.0.113.12
demo-site.info	8.8.8.8
sample-domain.co	198.51.100.42
localhost	127.0.0.1
internal-site.local	172.31.255.0
myserver.io	216.58.206.46
web-app.dev	74.125.24.101



https://yourwebsite.com/articles/my_story.html?mode=night#summary

`https://yourwebsite.com/articles/my_story.html?mode=night#summary`

protocol

domain

path

query

fragment



**Look for a domain name
for your website**



godaddy.com/

 Demo

**Let's build
our first
server**





**Look for a domain name
for your website**



godaddy.com/