

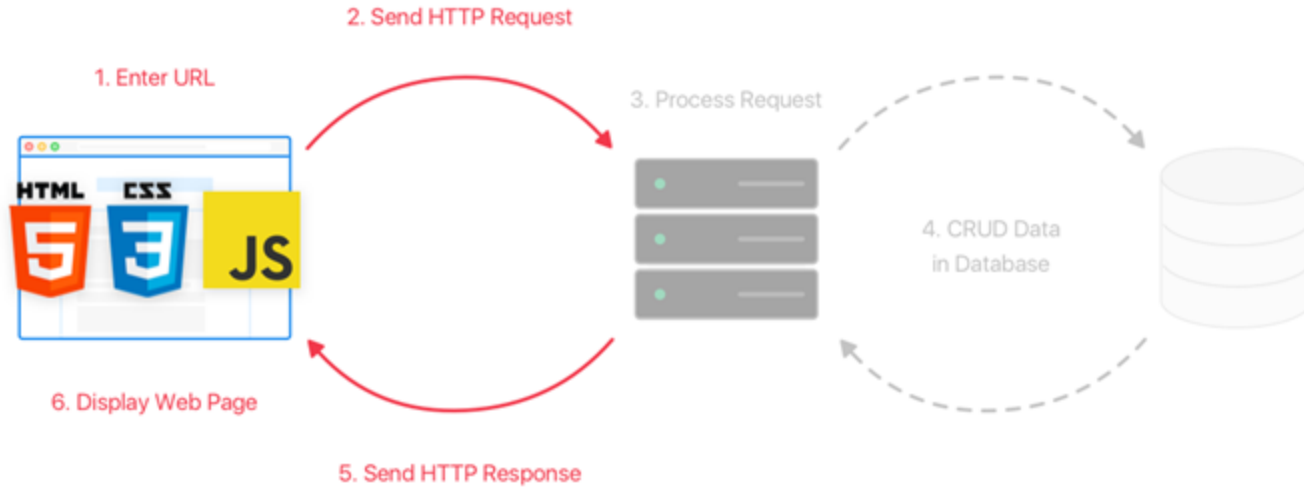
Talking to your server & Talking back to your client ...

Communication between client and server

Browser

Server

Database



Big Picture

HTTP Request

- Send from client to server
- 3 parts:
 - **Start line**
 - **Method** - describes action to be performed
 - **Target** - describes where to send the request
 - **Header**
 - Meta data
 - Ex: content type - what data type the body has
 - **Body**
 - Data you want the server to process

HTTP Verbs/Methods

- Describes what action the client wants the server to perform on a given resource
- Common Verbs:
 - GET
 - Show resource
 - POST
 - Create a new resource
 - PUT
 - Update resource
 - DELETE
 - Delete resource
 - HEAD
 - Returns just the headers of a get response

Safe & Idempotent

- **Safe methods**

- A method is said to be **safe** if it does not change the state of the resource
- Basically it should not affect the resource in any way
- GET, HEAD

- **Idempotent methods**

- A method is said to be **idempotent** if the state of the resource is only affected once by any changes implemented by this method
- Aside from the initial change, the resource should not be affected by any subsequent calls to the same method with the same inputs
- For example, if you delete a resource, you can call the delete action on the same resource multiple times, but it will only get deleted once
- DELETE, PUT, HEAD, GET

HTTP Response

- From server to client
- 3 parts:
 - Status line
 - Contains HTTP status codes of describing what happened when interacting with the server
 - Headers
 - Body

HTTP Status Codes

- Status codes give a short description of whether an interaction is successful or not.
- Status codes are grouped by their number:
 - 1xx - informational
 - 2xx - communicating success
 - 3xx - redirection
 - 4xx - errors that are the client's fault, client side errors
 - 5xx - errors that are the server's fault, server side errors

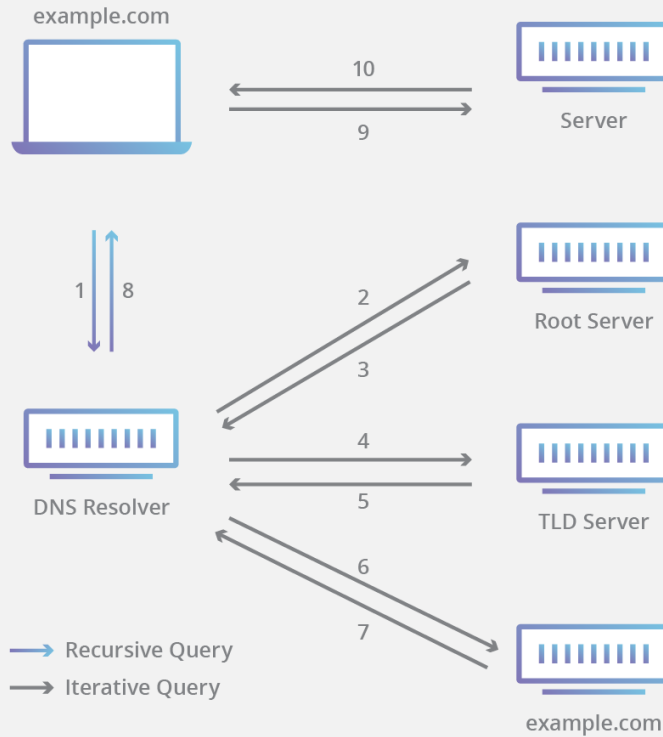
Common Status Codes

- 100 Continue
- 200 Ok, for get requests
- 201 Created, for post
- 204 No content, for put and delete
- 301 Moved permanently
- 302 Found, moved temporarily, commonly used in redirection
- 400 Bad request, generic error message
- 402 Payment Required
- 404 Not found
- 405 Method not allowed (if server does not support method)
- 418 I'm a teapot, if you're trying to make coffee in a teapot
- 451 Unavailable for Legal Reasons, based on Fahrenheit 451
- 500 Internal Server Error, try again later we're having problems right now
- 501 Not Implemented, if a method isn't implemented (if it's under construction)
- 502 Bad Gateway

DNS

- The Domain Name System (DNS) is the phonebook of the Internet.
- Humans access information online through domain names, like nytimes.com or espn.com. Web browsers interact through Internet Protocol (IP) addresses.
- DNS translates domain names to IP addresses so browsers can load Internet resources.

Complete DNS Lookup and Webpage Query



Another Big Picture

Discussion

- Big picture of the request/response lifecycle?
- What are the parts of a http request?
- What are http methods?
- What http methods are safe? Idempotent?
- What are the parts of a http response?
- How are status codes grouped?
- Difference between a 405 and a 501?

Resources

- [The amazing notes of your trainer](#)
- [HTTP Messages](#)
- [DNS](#)