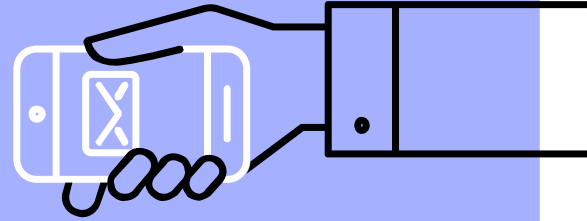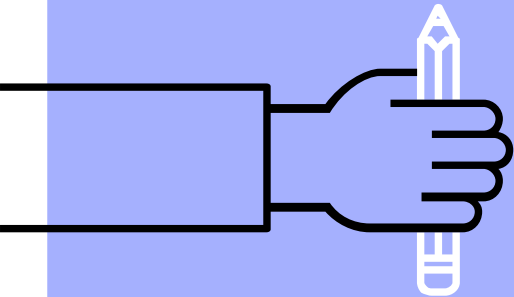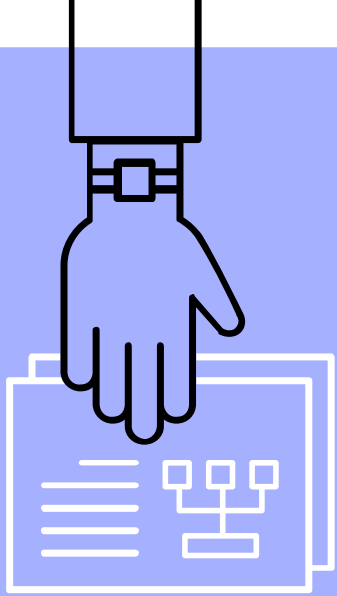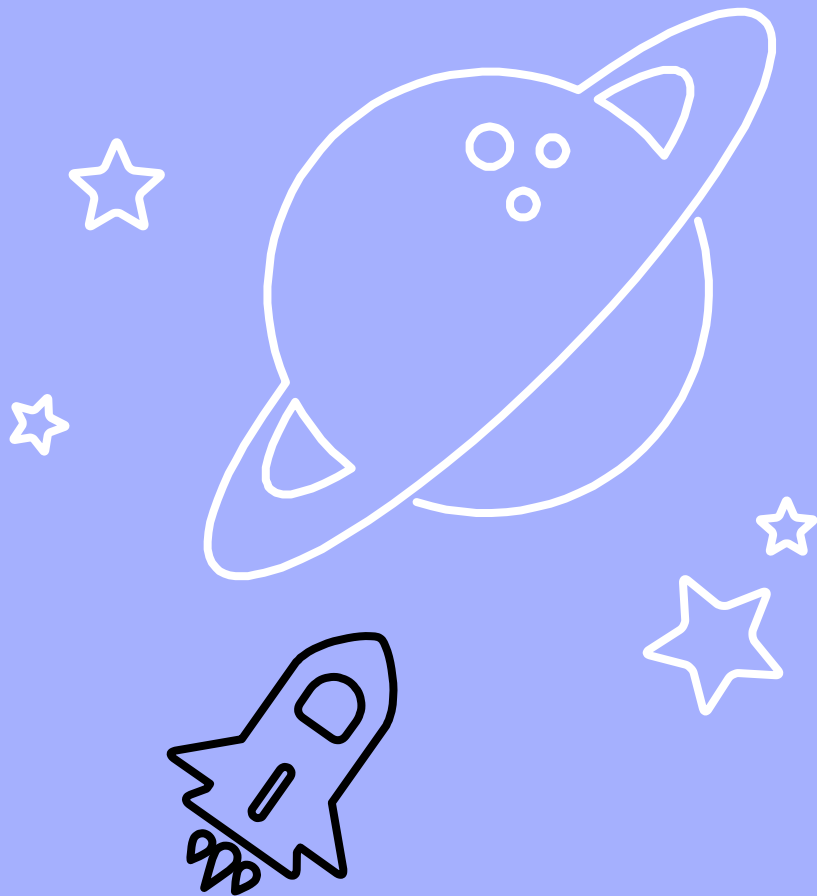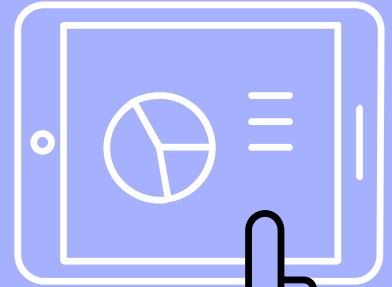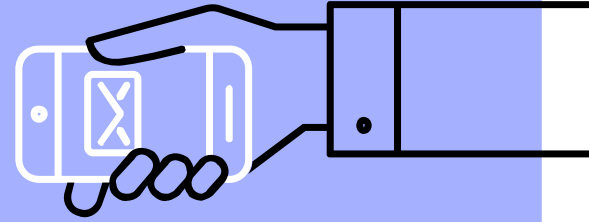# Welcome to Backend Dev with NodeJS
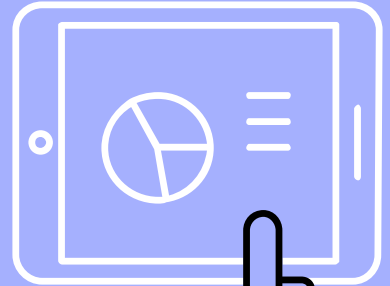
Hello World

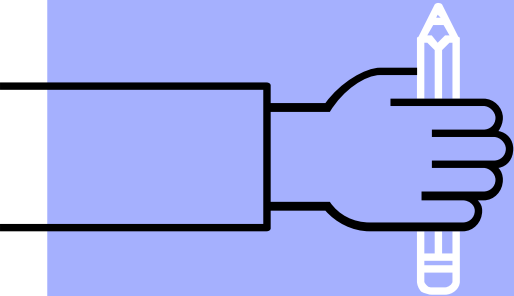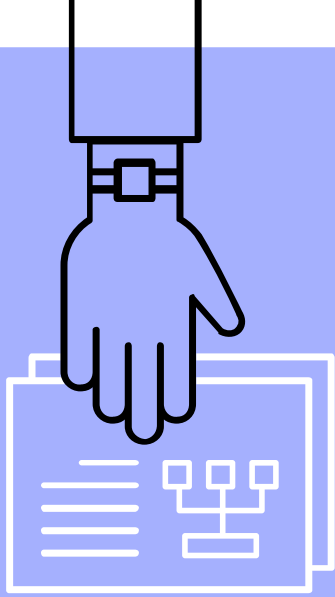Let's begin the backend journey with fundamentals.

The WWW

The backbone of the WWW

▷ Created at CERN.
▷ Uses TCP/IP suite.
▷ Mainly Consists of:
  ■ HTTP.
  ■ URI
  ■ HTML
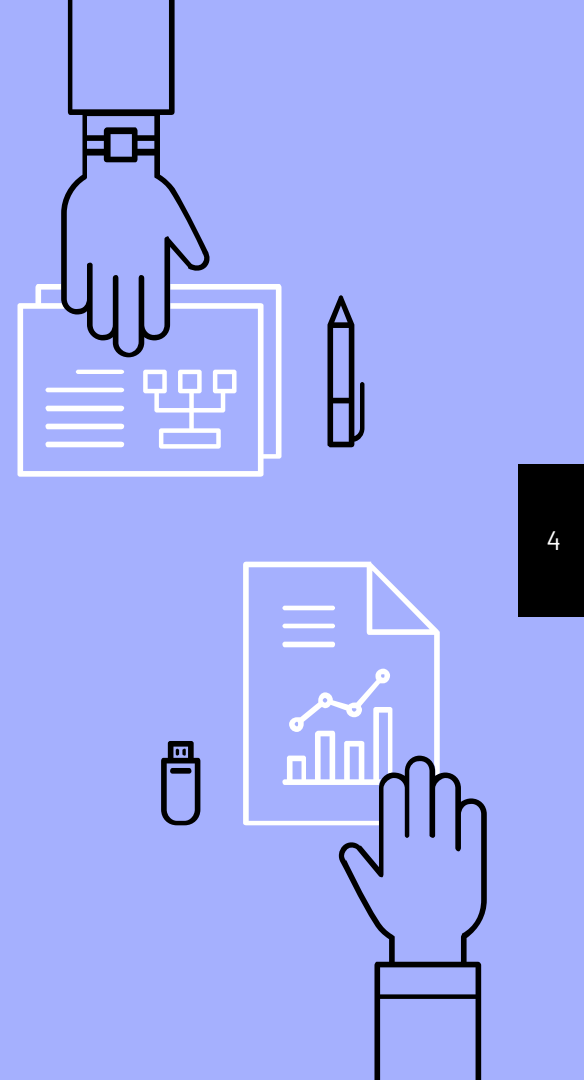
TCP/IP

▷ Communication protocol to exchange messages of a network.
▷ IP is a way of transmitting information from one computer to another.
▷ TCP does the rest of the work such as Synchronization, Packet Checking etc.

URI, URL and URN.

▷ URI – Uniform Resource Identifier.

▷ URL – Uniform Resource Locator.
  ▪ http://example.com

▷ URN – Uniform Resource Name.
  ▪ urn:isbn:9780141036144

Source: MDN

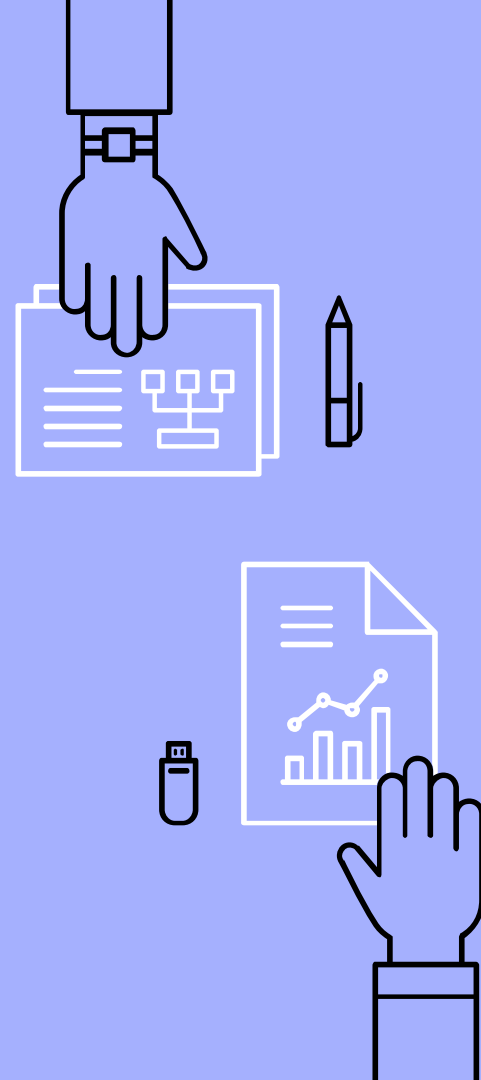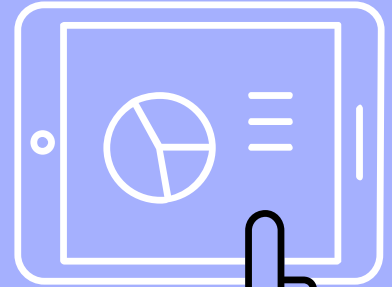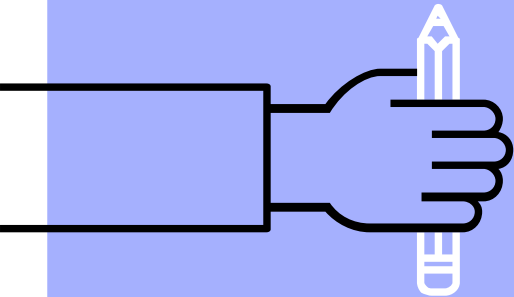# DNS and PORTS

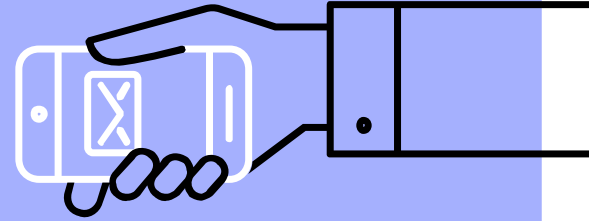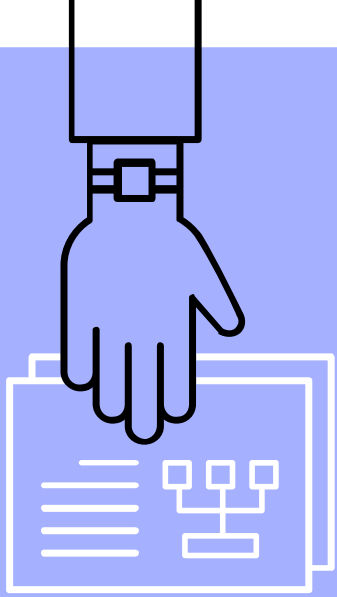▷ Contains mapping from String URLs to IP addresses.

▷ Specific port in the computer to connect to,

▷ IP addresses are used alongside PORTS to connect to a website.

HyperText Transfer Protocol [HTTP]

HTTP Request

URL

Uniform Resource Locator

METHOD TYPE

POST, GET, PUT, DELETE

U

M

H

B

Keep-Alive, Accept-Encoding,
Content-Type etc.

HEADERS

JSON, Text, GraphQL, Binary
etc.

BODY

HTTP Response

STATUS CODE

1xx-5xx

S

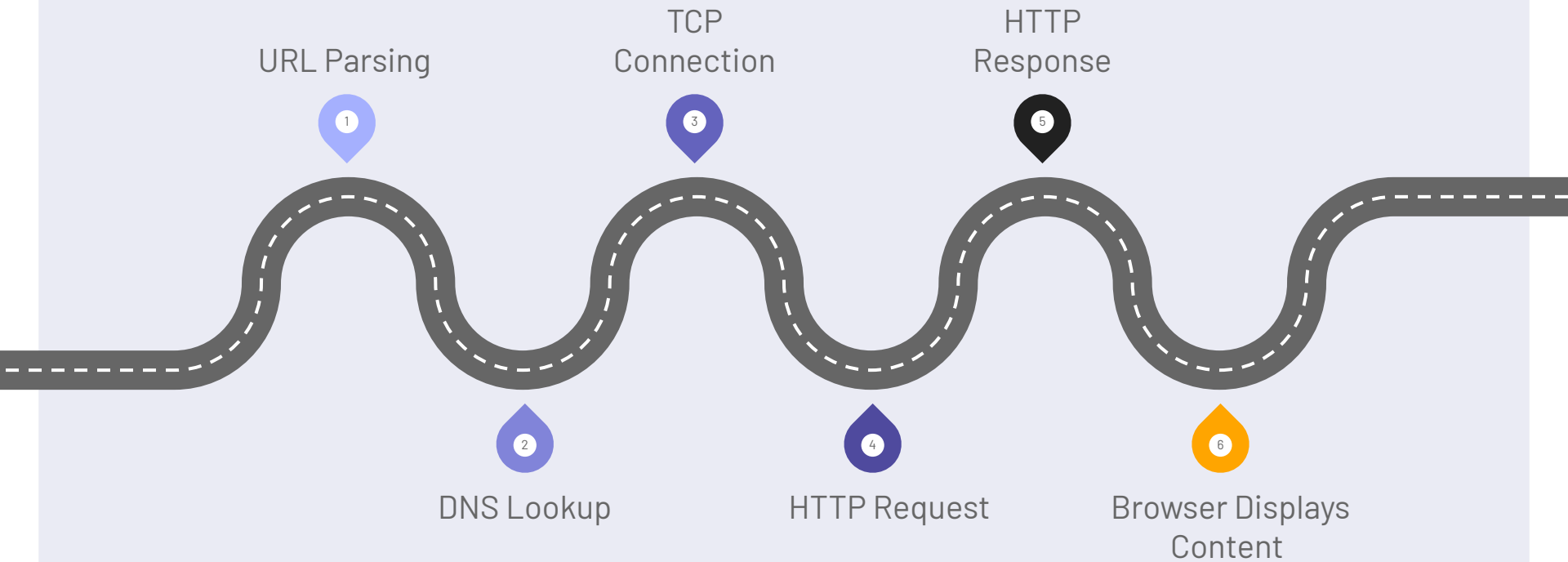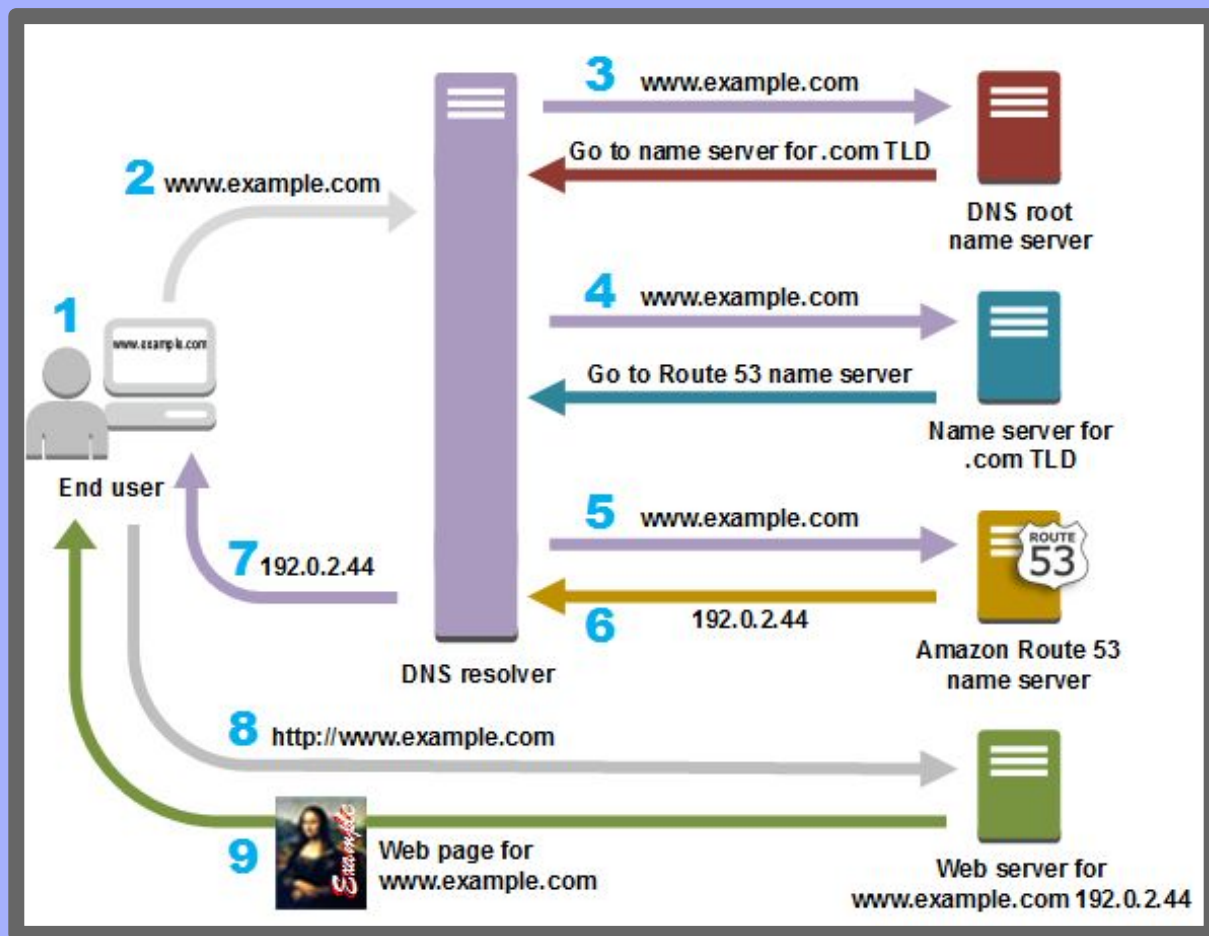H

HEADERS

Age, Location, Content-Type etc.

B

JSON, Text, GraphQL, Binary etc.

BODY

Journey of a Request.

URL Parsing

1

TCP
Connection

3

HTTP
Response

5

DNS Lookup

2

HTTP Request

4

Browser Displays
Content

6

Source: AWS

HTTP Codes

100-199 Informational

100 Continue
101 Switching
102 Processing
103 Early Hints.

Rarely used.

400-499 Client Error

400 Bad Request
401 Unauthorized
403 Forbidden.
404 Not Found.

All the 4xx errors are used frequently

200-299 Successful

200 OK
201 Created
202 Accepted
204 No Content

And So On.
You'll use this a lot.

300-399 Redirection

301 Moved Permanently
302 Found
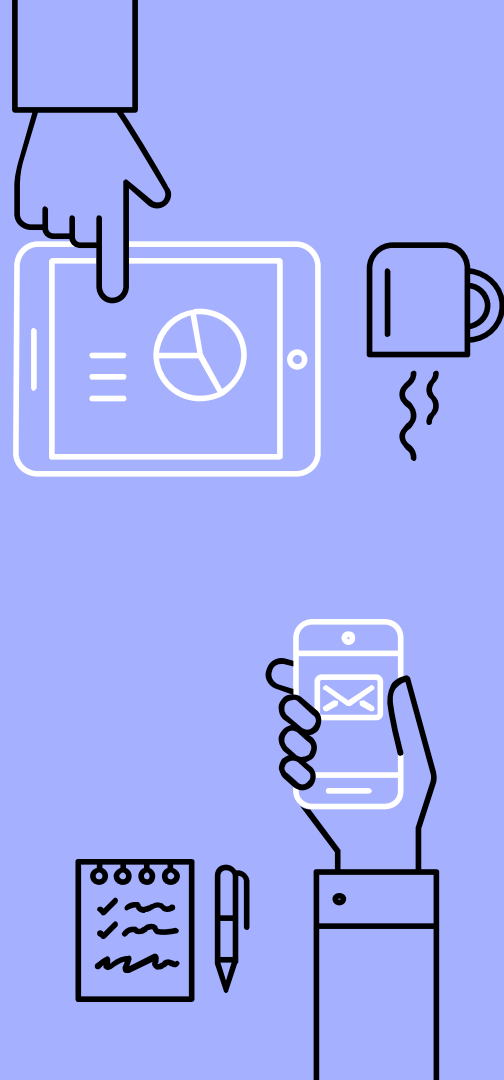308 Perm Redirect.
307 Temp Redirect.

Maybe you'll see 301, 308 rest are seldom used.

500-599 Server Error

500 Internal Server Error.
502 Bad Gateway.
503 Unavailable.
504 Timeout.
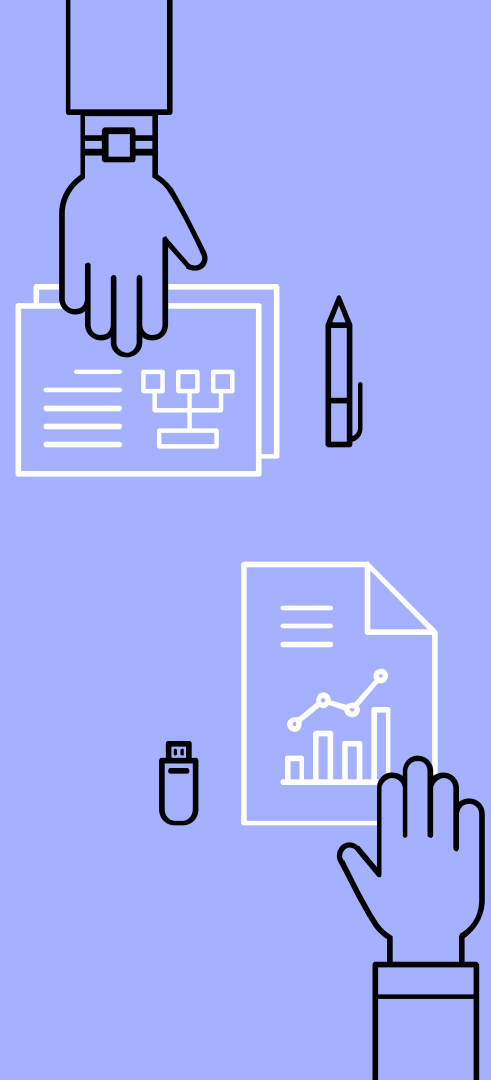
These are used frequently.

Source: MDN

HTTP Methods - GET

▷ You send a simple request.
▷ No modification of data is
   expected.
▷ No Body is allowed.

Let's look at an example.

Source: MDN

HTTP Methods - POST

▷ You send a request with a body.
▷ Modification of data is expected.
▷ Body is allowed & determined by the Content-Type header .

Let's look at an example.

Source: MDN

HTTP Methods - PUT

▷ You send a request with a body.
▷ Modification of EXISTING data is expected.
▷ Body is allowed & determined by the Content-Type header .
▷ Difference is nuanced.

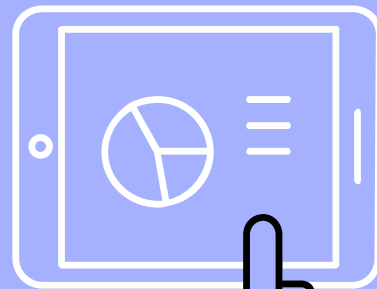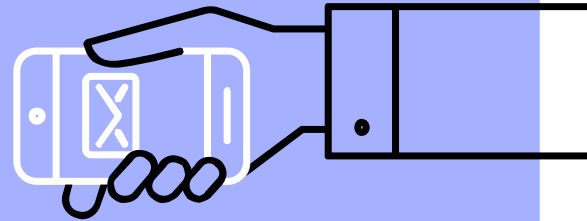Let's look at an example.

Source: MDN

HTTP Methods - DELETE
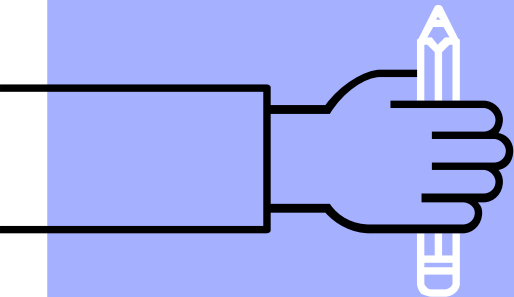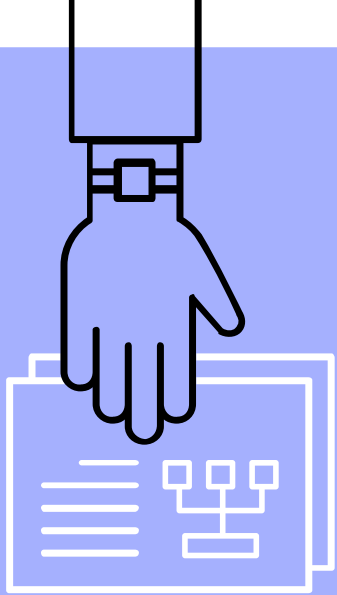
▷ You send a request [body optional].
▷ Deletion of data is expected.
▷ Body is allowed & determined by the Content-Type header .

Let's look at an example.

Source: MDN

Web Stack

The Web Stack

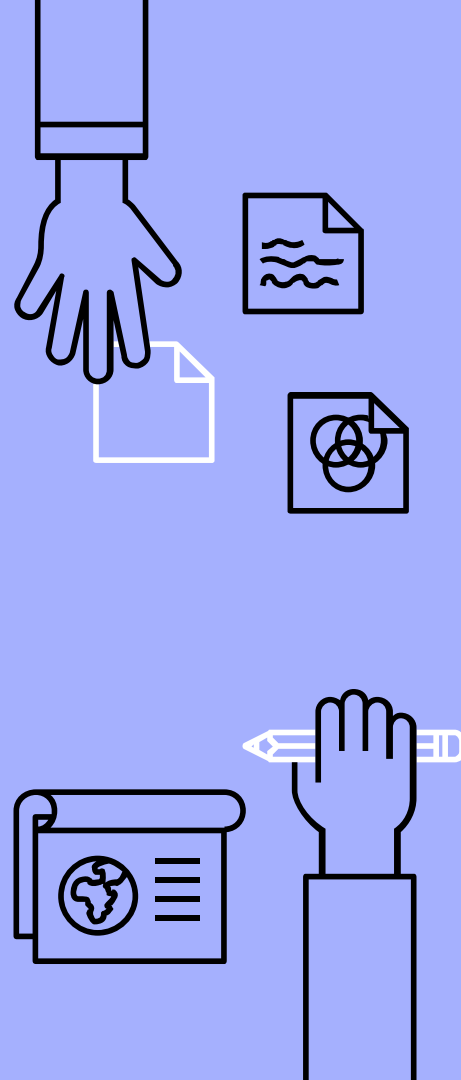## FrontEnd

- HTML
- CSS
- JS
- Web Assembly

Frameworks
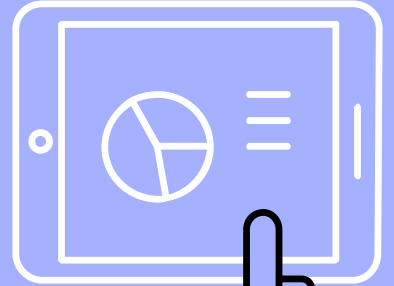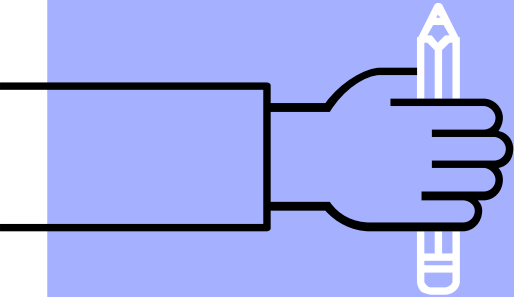
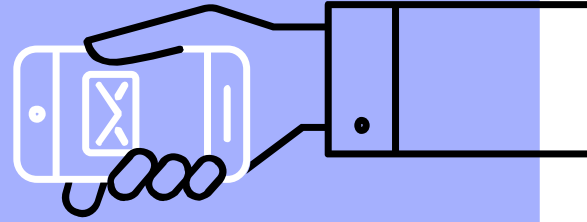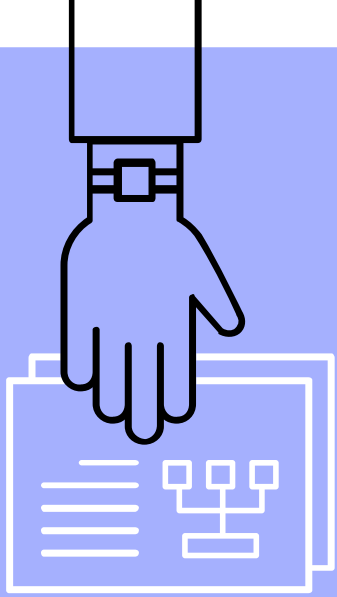- React
- Angular
- Vue
- Svelte

Backend

- HTTP
- GraphQL
- RPC

Frameworks:

- NodeJS
- GoLang
- Python Django
- Java Spring

Web Servers

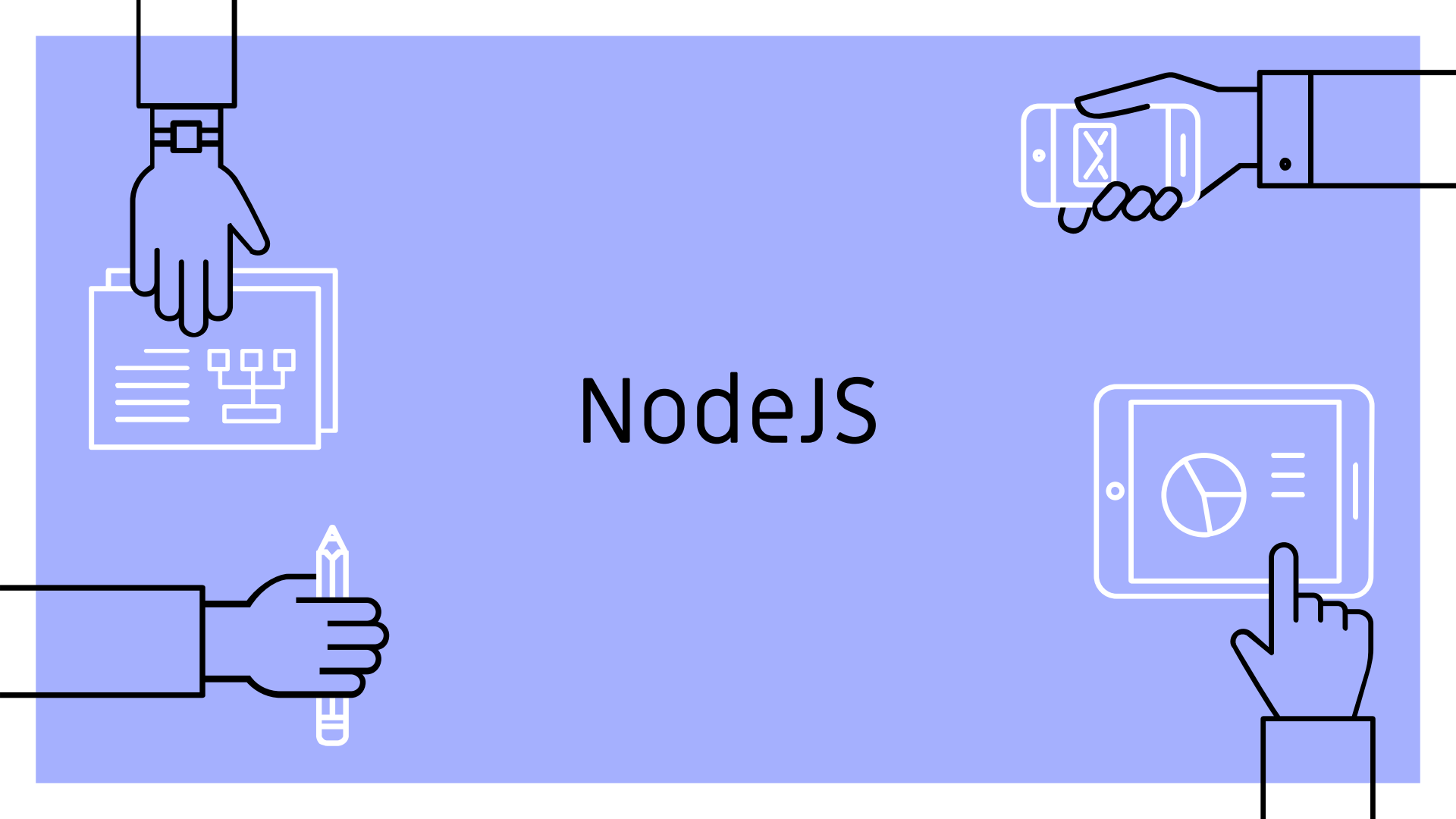# What is a WebServer

▷ Anything that can serve web-content over HTTP.
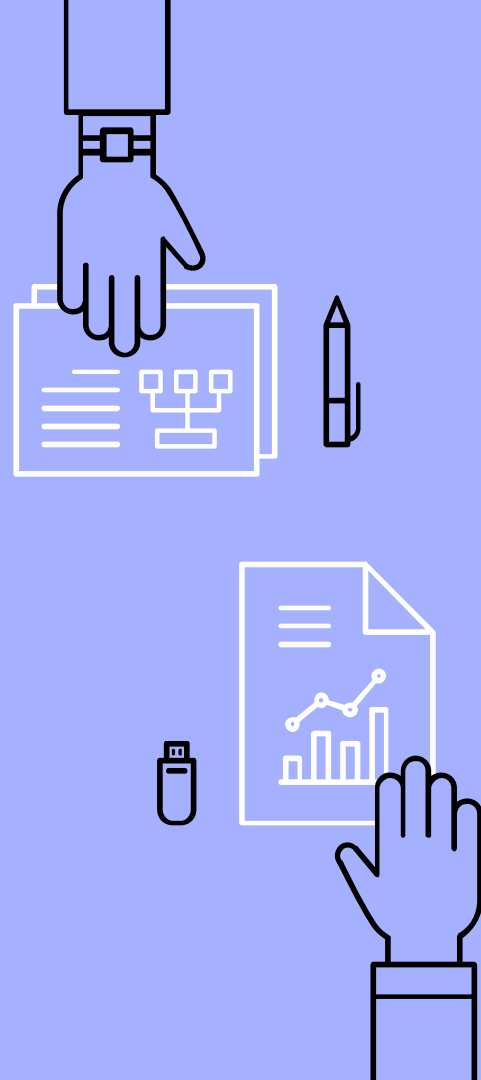▷ Can server static or dynamic content.
▷ Request a resource and it responds.

NodeJS

What is NodeJS

▷ JavaScript Runtime [V8].
▷ Single Threaded but Non-Blocking.
▷ Concurrency rather than Parallelism.
▷ Asynchronous.
▷ Event Loop.

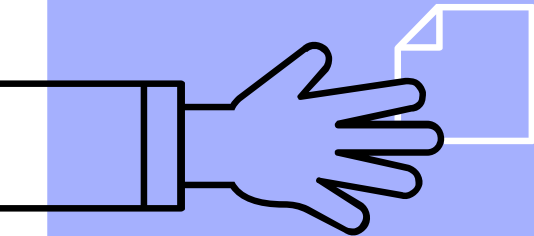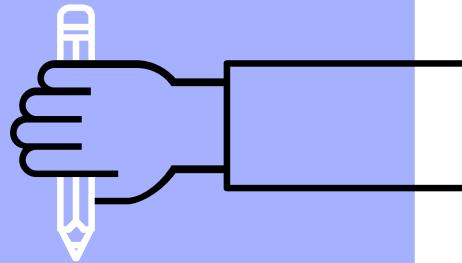A lot of jargon. Let's decipher this.

Hello World

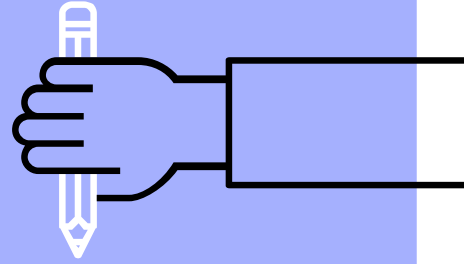Let's begin the NodeJS journey with a quick hello world.

1. URL
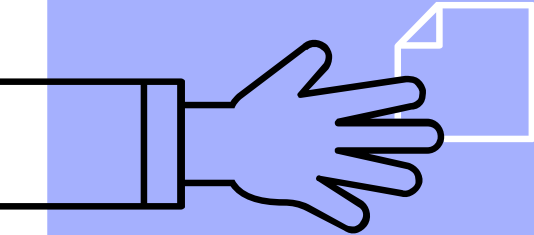
If URL == "hi"
Then send "hello"

Else send "Not Found"

2. Get the ID

Split the URL at "/"
If Method is GET
Then get the ID and print it.

Else send "Not Found"
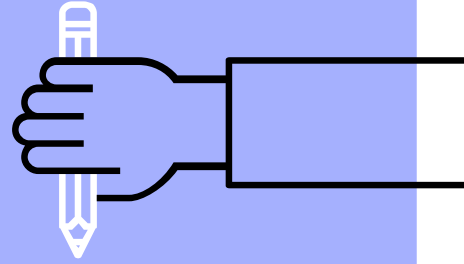
Namaste !

I am Shabarish R

Github:

https://www.github.com/ShabarishRamaswamy

LinkedIN:

https://www.linkedin.com/in/shabarishramaswamy

End of Day 1

Thank you !