

3 Week #AppDev Learning Series

# Start your personal #Frontend Portfolio with 3 Apps :



3 Week #AppDev Learning Series

Week 1:

# Build your first app with **Javascript and NodeJS**

**July 7 or 8** 8.30pm IST | 5pm CET | 11am ET

LEVEL  
**UP**  
with the DataStax  
**Developers**



# DatastaxDevs: Developer Advocates Team



Cedrick  
Lunven



Aleksandr  
Volochnev



Jack  
Fryer



David  
Gilardi



Stefano  
Lottini



Ryan  
Welford

U

B

S

T

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# Agenda

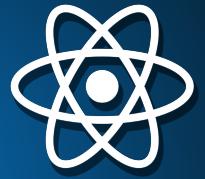
01



Series  
HouseKeeping

02

Application 101



03

Presentation Tier  
“FrontEnd”

04



Data Tier  
“Databases”



05

Application Tier  
“BackEnd”



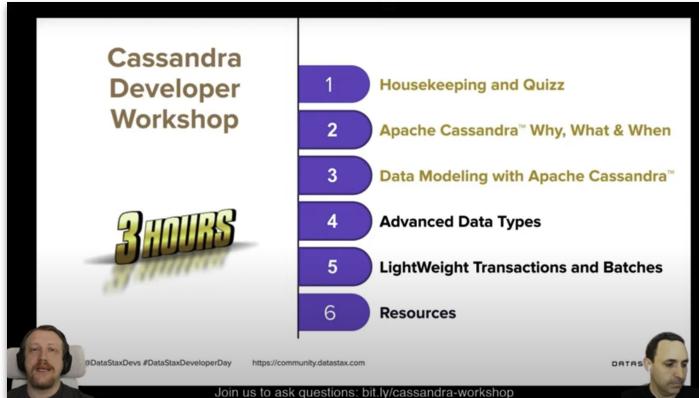
06

Resources

# Housekeeping #1: Attending the workshop

Live and interactive

**Livestream:** [youtube.com/DataStaxDevs](https://youtube.com/DataStaxDevs)

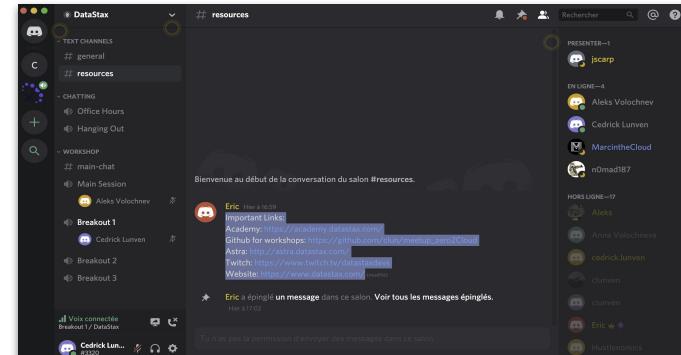


**YouTube**



**Twitch**

**Questions:** <https://dtsx.io/discord>



**Discord**

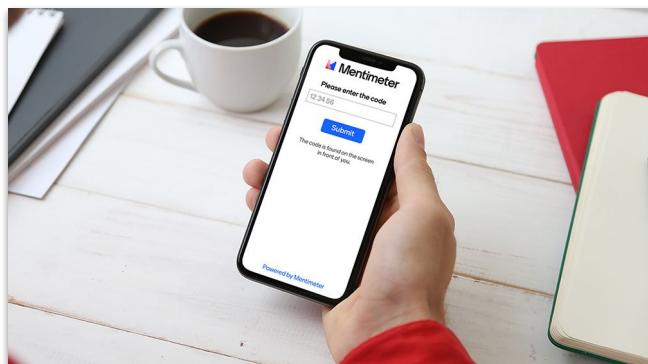


**YouTube**



Available on the iPhone  
App Store

**Games** [menti.com](https://menti.com)



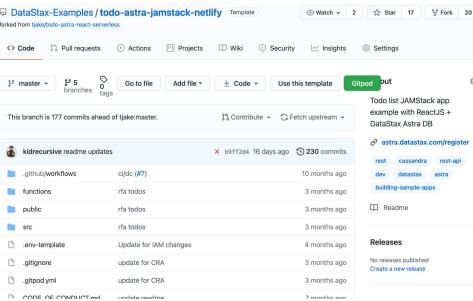
**Mentimeter**



Nothing to install !

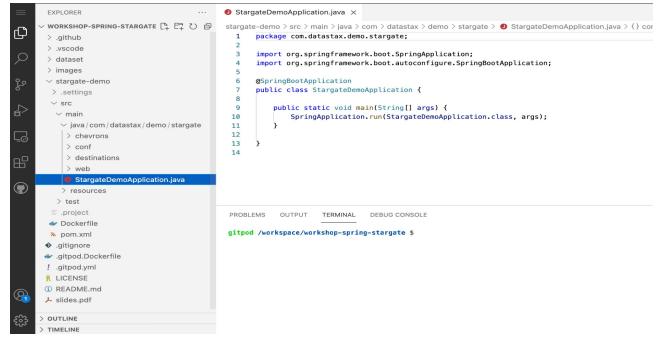
# Housekeeping #2: Doing Hands-On

Source code + exercises + slides



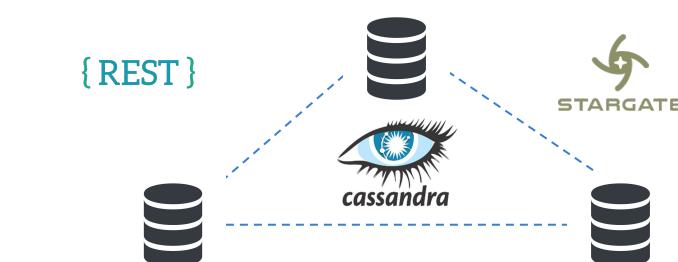
 GitHub

IDE



 Gitpod

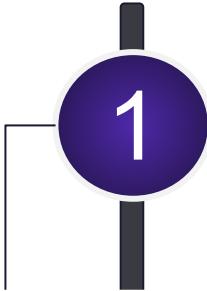
Database + GraphQL + PlayGround



DataStax  
**Astra DB**

DataStax Developers

# Housekeeping #3: How does the series work ?



**Attend one of the 2 interactive **LIVE STREAMED** workshops (Wednesday or Thursday)**

- ❖ Play games
- ❖ Do Hands-on





# Win some Prices !

DataStax Developers

<https://dtsx.io/summer-series-game>

3 x 500\$ AMAZON gift cards to win

## CONDITIONS

- Follow up on Twitter @DatastaxDevs
- Subscribe to our youtube channel @DatastaxDevs
- At least 1 badge to enter the game

DUE DATE

8/1

Winners randomly chose live on

8/18

The more you fill .... the best chances you do have.



Win some Prices !

DataStax Developers

## Application Development Summer Series

Over the summer we want to make you win even more prices and gift cards ! How let's engage with us.

- Subscribe to the Youtube Channel @DataStaxDevs
- Follow up on twitter @DataStaxDevs => <https://twitter.com/DataStaxDevs>

Email \*

Valid email

This form is collecting emails. [Change settings](#)

# Agenda

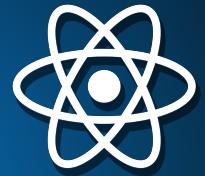
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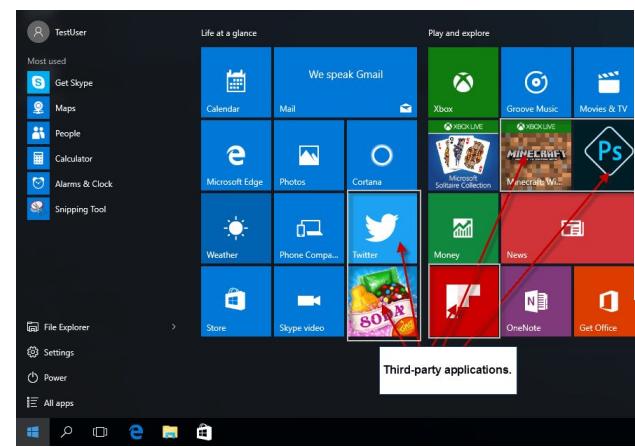


# Applications 101: What is an Application ?

## Mobile Applications



## Desktop Applications



# Applications 101: S.W.O.T

## Strengths

- Performance
- Extended Features

## Weaknesses

- Dedicated language/platform
- Installation required

## Opportunities

- Native integration (OS)
- Smooth usage

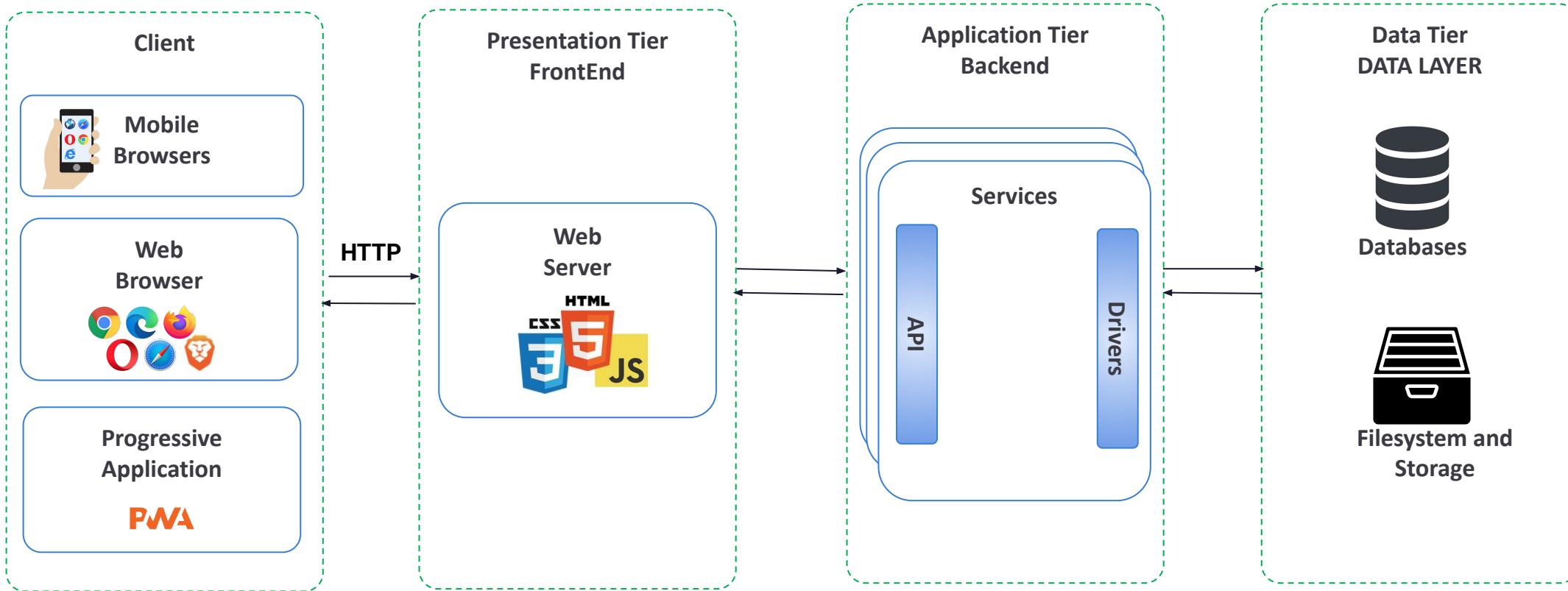
## Threats

- Security
- Versioning

# Web Application Development: Rational



# Web Application Development: Architecture



# Agenda

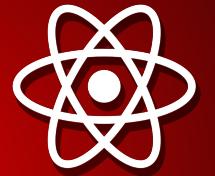
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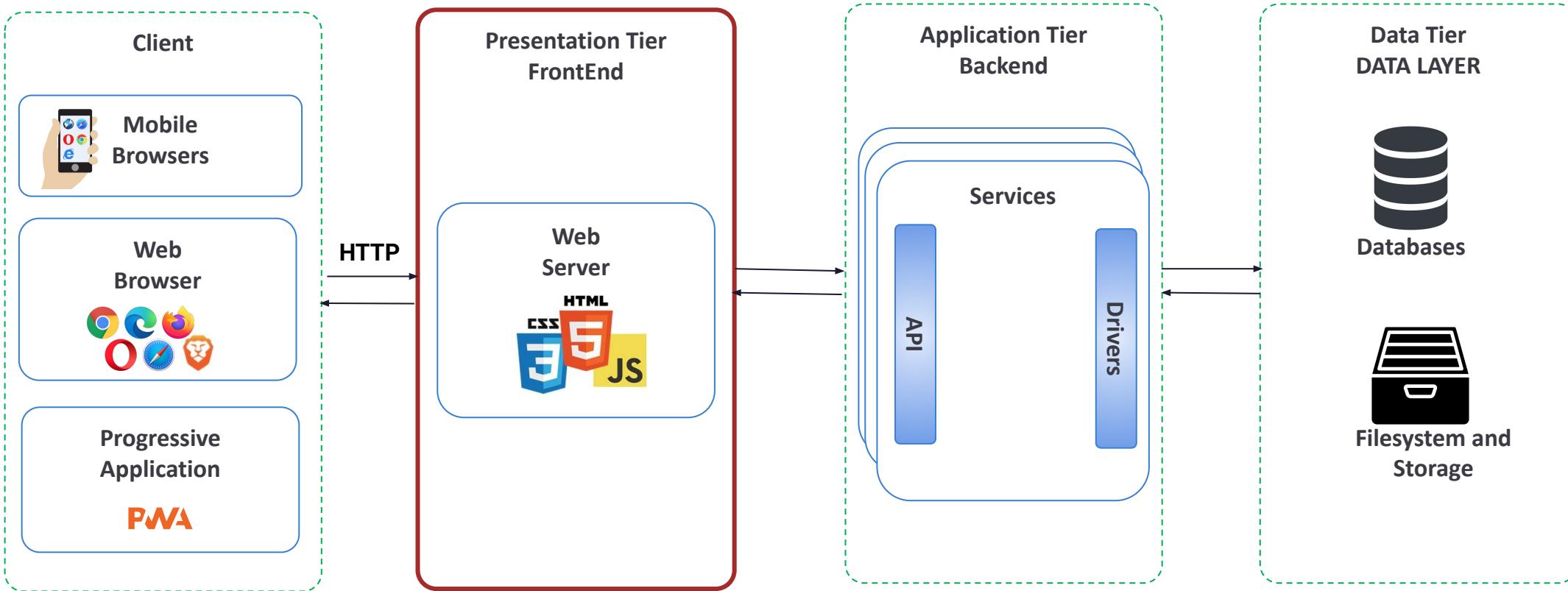


**06**

Resources



# FrontEnd: Architecture



# Frontend : HTML



- Hyper Text Markup Language (1990)
- Markup language for creating web pages
- XML-Based markup
- HTML elements are represented by **tags**
  - **Page structures:** [head, body](#)
  - **Page formatting:** [paragraph, divisions](#)
  - **Text formatting:** [bold, italic, font](#)
  - **Tags:** [images, tables, list, forms,](#)
- More Information ([w3schools](#))
  - <https://www.w3schools.com/html/default.asp>
  - [https://www.w3schools.com/html/html\\_examples.asp](https://www.w3schools.com/html/html_examples.asp)
  - [https://www.w3schools.com/js/js\\_htmldom\\_events.asp](https://www.w3schools.com/js/js_htmldom_events.asp)

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
</head>
<body style="background-color:powderblue;">

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>
<a href="https://www.datastax.com">Link</a>


</body>
</html>
```

This is a Heading

This is a paragraph.

[Link](#)



# Frontend : HTML

<https://codepen.io/DatastaxDevs>



[DataStaxDevs] - HTML 🖊  
DataStax Developers

HTML

```
1 <html lang="fr">
2   <head>
3     <meta charset="UTF-8">
4   <title>DataStax TodoList</title>
5 </head>
6 <body>
7   <div class="container" style="border: 1px solid blue; padding:10px">
8     <h1>DataStax Todo</h1>
9     <form>
10       <input type="text" id="item" placeholder="Enter your value" autocomplete="off" minlength="2" />
11     </form>
12     <ul id="list">
13       <li>Task 1</li>
14       <li>Task 2</li>
15       <li>Task 3</li>
16     </ul>
17   </div>
18 </body>
19
20
21
22 </html>
```

DataStax Todo  
Enter your value

- Task 1
- Task 2
- Task 3



# Frontend : CSS

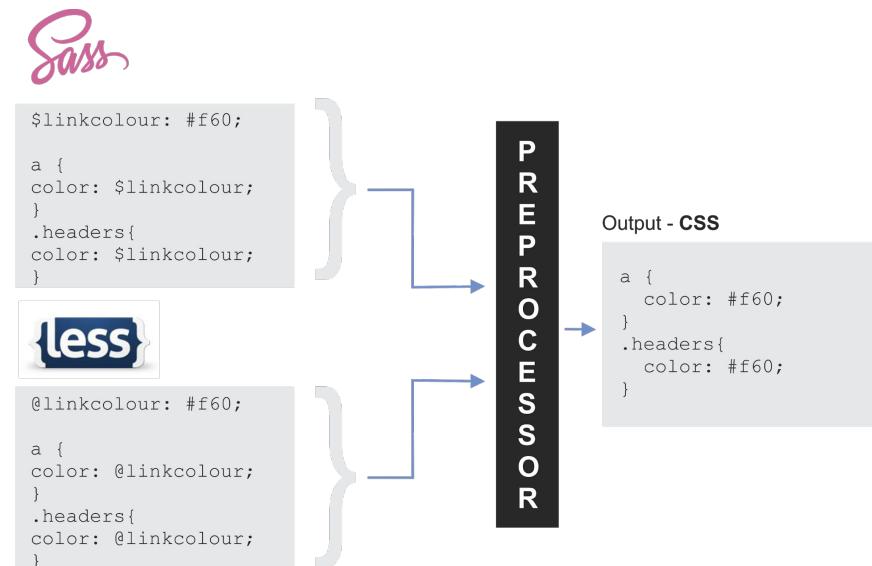
- Cascading Style Sheets
- Language used to style the web
- Mutualization control layout of multiple pages in a single place, external files with extension CSS.
- Work with **multiple selectors**
  - Simple: `p{}` : every paragraphs
  - Simple: `p.test {}`: paragraphs with class "test"
  - Simple: `#test`: any html with "id" test
  - **Css Combinator**: descendant, `>`, `+`, `~`
  - **Pseudo-class**: `a:visited`
  - **Pseudo-element**: `p::first-line`
- Responsive User interfaces (`@media screen`)
- **Sass** and Length (Preprocessing)
  - Variables, mixins, nested rules
- CSS Animations (`@keyframes`, `animation-name-*`)
- More Information ([w3schools](#))

```

body {
  background-color: lightblue;
}

h1 {
  color: white;
  text-align: center;
}

p {
  font-family: verdana;
  font-size: 20px;
}
  
```





# Frontend : CSS

<https://codepen.io/DatastaxDevs>

The screenshot shows the CodePen interface with the title '[DataStaxDevs] - HTML+CSS'. The top bar includes icons for saving, settings, and change view. The left sidebar shows the HTML and CSS code, and the right panel displays the resulting web page.

**HTML**

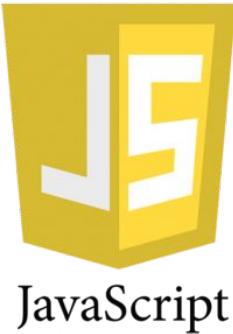
```
1 <html lang="fr">
2   <head>
3     <meta charset="UTF-8">
4     <title>DataStax TodoList</title>
5   </head>
6   <body>
7     <div class="container">
8       <h1>DataStax Todo</h1>
9       <form>
10         <input type="text" id="item"
11           placeholder="Enter your value"
12           autocomplete="off" minlength="2" />
13       </form>
14       <ul id="list">
15         <li>Task 1</li>
16         <li>Task 2</li>
17       </ul>
18     </div>
19   </body>
20 </html>
```

**CSS**

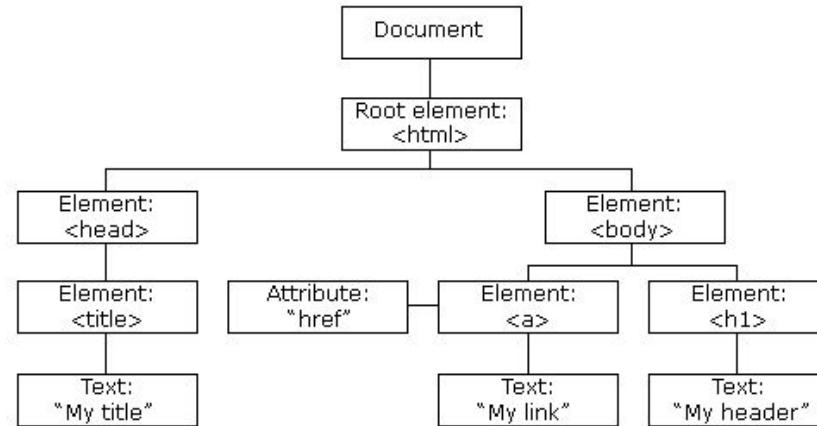
```
1 @charset "UTF-8";
2 @import
3   url("https://fonts.googleapis.com/css2?
4     family=Fredoka+One&display=swap");
5 * {
6   margin: 0;
7   padding: 0;
8   box-sizing: border-box;
9   outline: none;
10  border: none;
11  font-family: "Fredoka One", cursive;
```

The web page itself has a red header and a teal gradient container. It features a large red 'DATASTAX TODO' heading, a yellow 'Enter your value' input field, and a list of three tasks: 'Task 1', 'Task 2', and 'Task 3', each preceded by a red asterisk.

# Frontend : Javascript



- Javascript, JS is a **programming language**
- Working with the DOM: **Document Object Model**
  - The HTML elements as objects
  - The **properties** of all HTML elements
  - The **methods** to access all HTML elements
  - The **events** for all HTML elements
- Javascript can be defined
  - inside the HTML Code
  - in the header
  - as external .js file <link...>
- It can change :
  - **Content** of an HTML element, attribute
  - **Listen** to events and trigger treatment
- **More on syntax**
  - <https://www.w3schools.com/js/default.asp>
  - jquery introduced simplified syntax and features



```
<script>

document.getElementById('demo').innerHTML = 'Hello JavaScript';

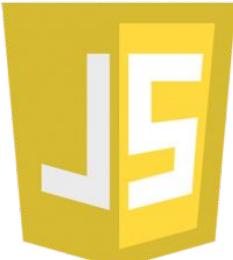
function myFunction() {
  document.getElementById("demo").innerHTML = "OK";
}

document.write(5 + 6);
var price1 = 5;
var price2 = 6;
var total = price1 + price2;

</script>
```

# Frontend : Javascript

<https://codepen.io/DatastaxDevs>



JavaScript

A screenshot of the DataStax Todo application on CodePen. The interface features a red header with the text "DATASTAX TODO". Below the header is a teal input field with the placeholder "Enter your value". At the bottom left, there is a red footer with the text "Task 1". Above the application, the CodePen editor interface is visible, showing the HTML, CSS, and JS code for the application.

[DataStaxDevs] - HTML + CSS + JS

DataStax Developers

HTML

```
1 <html lang="fr">
2 <head>
3   <meta charset="UTF-8">
4   <title>DataStax TodoList</title>
5 </head>
6 <body>
7   <div class="container">
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11     </form>
12     <ul id="list">
13       <li>Task 1</li>
14       <li>Task 2</li>
```

CSS

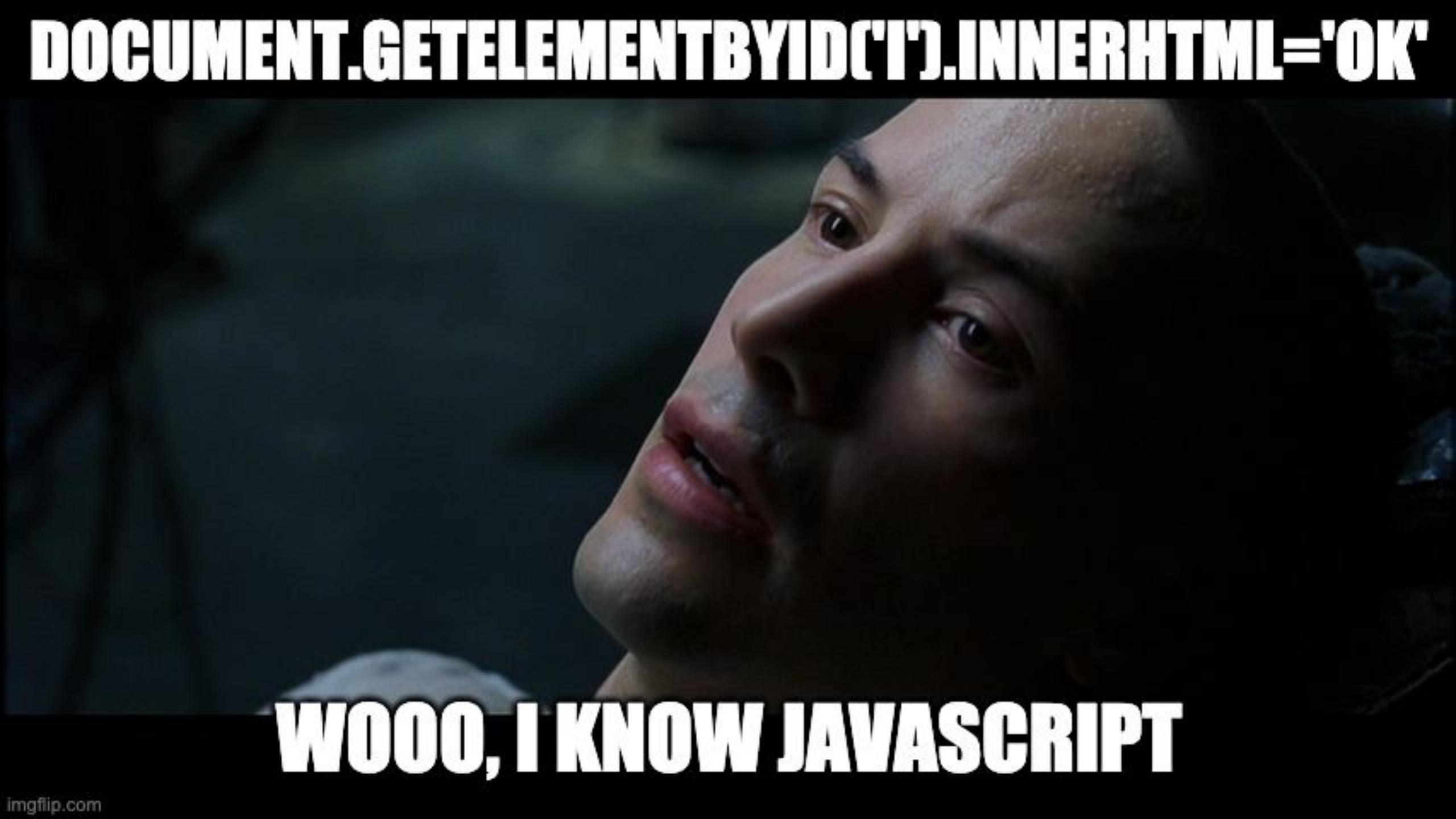
```
1 @charset "UTF-8";
2 @import
3   url("https://fonts.googleapis.c
om/css2?
family=Fredoka+One&display=swap
");
4 * {
5   margin: 0;
6   padding: 0;
7   box-sizing: border-box;
8   outline: none;
9   border: none;
10  font-family: "Fredoka One",
cursive;
11  color: #474747;
```

JS

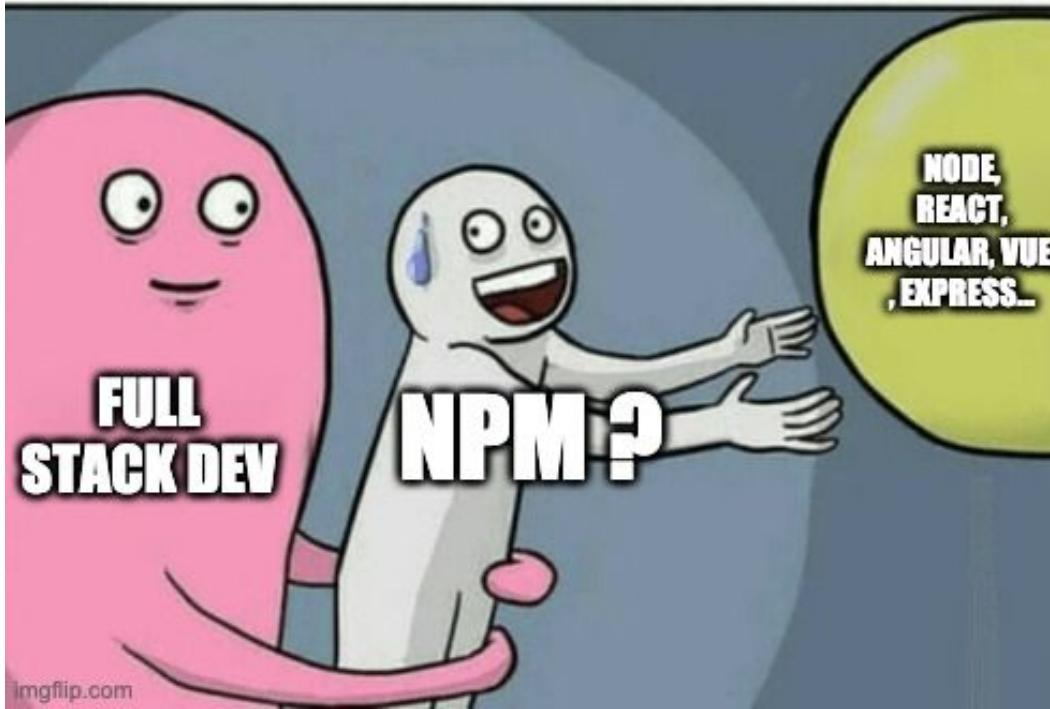
```
1 const list =
2 document.getElementById('list');
3 const form =
4 document.querySelector('form');
5 const item =
6 document.getElementById('item');
7
8 // add element
9 form.addEventListener('submit', (e)
=> {
10   e.preventDefault();
11   list.innerHTML +=
`<li>${item.value}</li>`;
12   //storage();
13   item.value = "";
14});
```

DataStax Developers

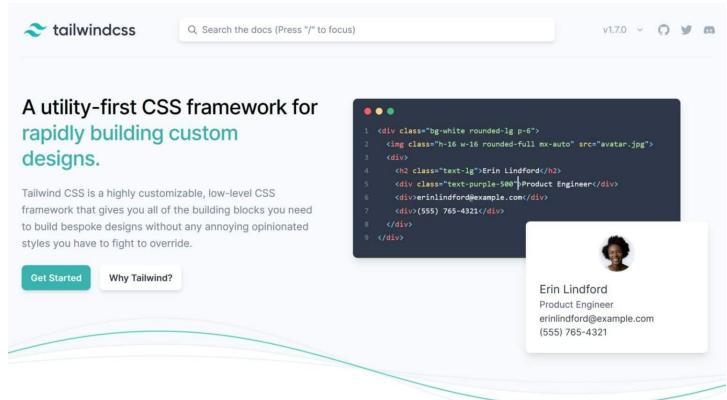
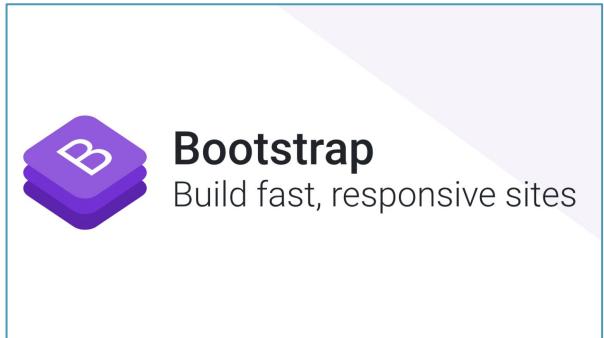
**DOCUMENT.GETELEMENTBYID('I').INNERHTML='OK'**

A close-up, low-angle profile shot of a man's face. He is looking upwards and slightly to his right with a contemplative or focused expression. His eyes are dark and prominent. The lighting is dramatic, casting deep shadows on one side of his face while highlighting the other. He has short, light-colored hair and a visible tattoo on his left shoulder. The background is dark and out of focus.

**WOOO, I KNOW JAVASCRIPT**



# Frameworks : Do not reinvent the wheel



DataStax Developers

# Frontend++ : NodeJS

- **Node JS**
  - Cross-platform Javascript run-time environment that executes Javascript code outside of a browser.
  - Light, scalable and open-source language platform
  - Node.js can
    - generate dynamic page content
    - create, open, read, write, delete, and close files on the server
    - collect form data
    - add, delete, modify data in your database
- **NPM (Node package Manager)**
  - libraries which are built by the awesome community which will solve almost all the generic problems related to the Node.js.
  - will download the node modules
- **NPX (Node package Runner)**

```
[cedricklunven@clunhost:~] npx cowsay "Hello"
[npx: installed 41 in 8.263s

< -----
  ^__^
  (oo)\_____
  (__)\       )\/\
  ||----w |
  ||     || -
```

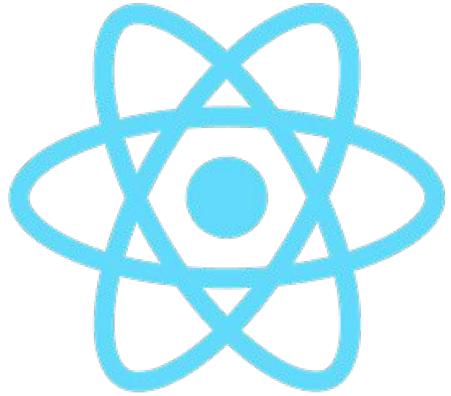


```
var http = require('http');

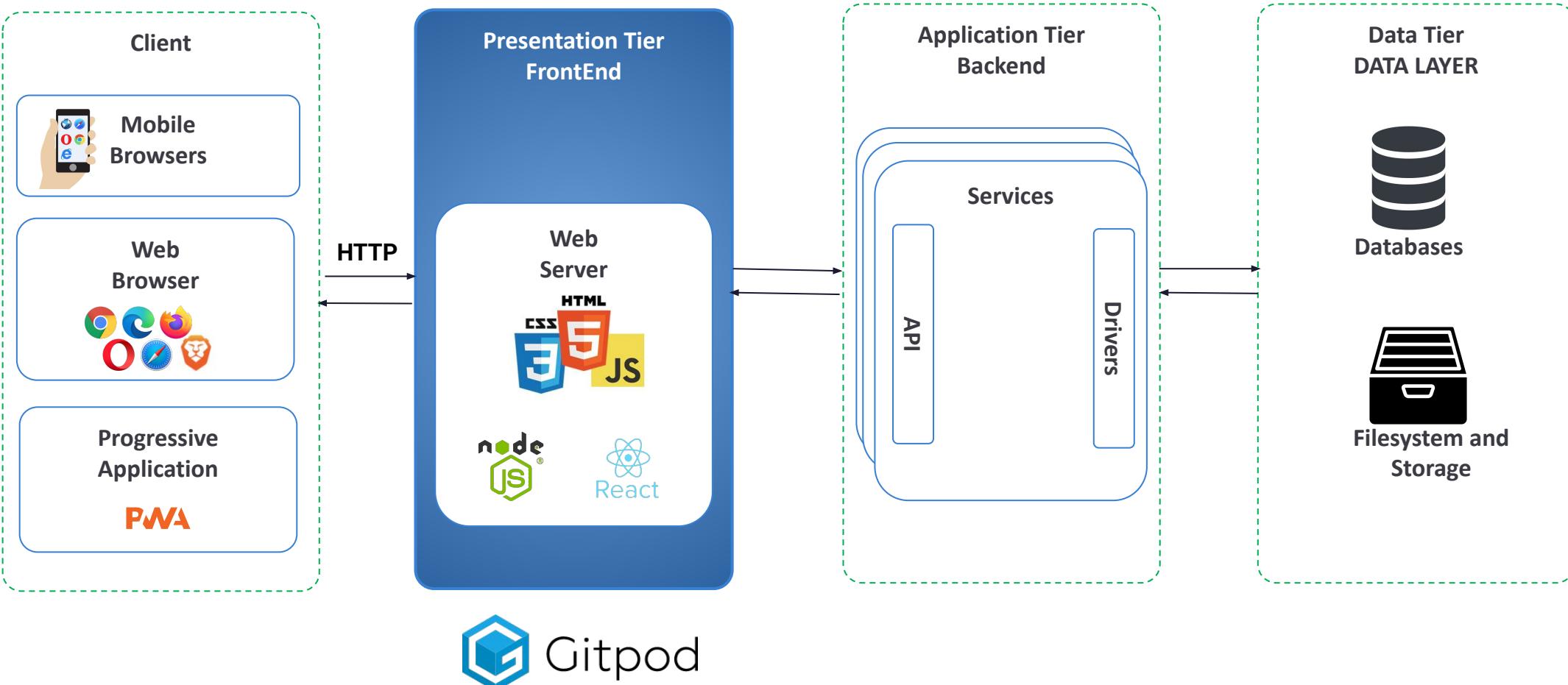
http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/plain'});
  res.end('Hello World!');
}).listen(8080);
```

# Frontend : ReactJS

- Definition
  - React is a JavaScript library created by Facebook
  - React is a User Interface (UI) library
  - React is a tool for building UI components
- **LEARNING BY DOING**



# HANDS-ON #1



# Demo #1:

- Create App
- Create Component
- Start App



<https://github.com/datastaxdevs/appdev-week1-todolist>



# Agenda

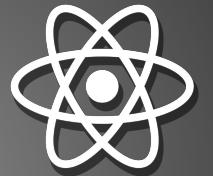
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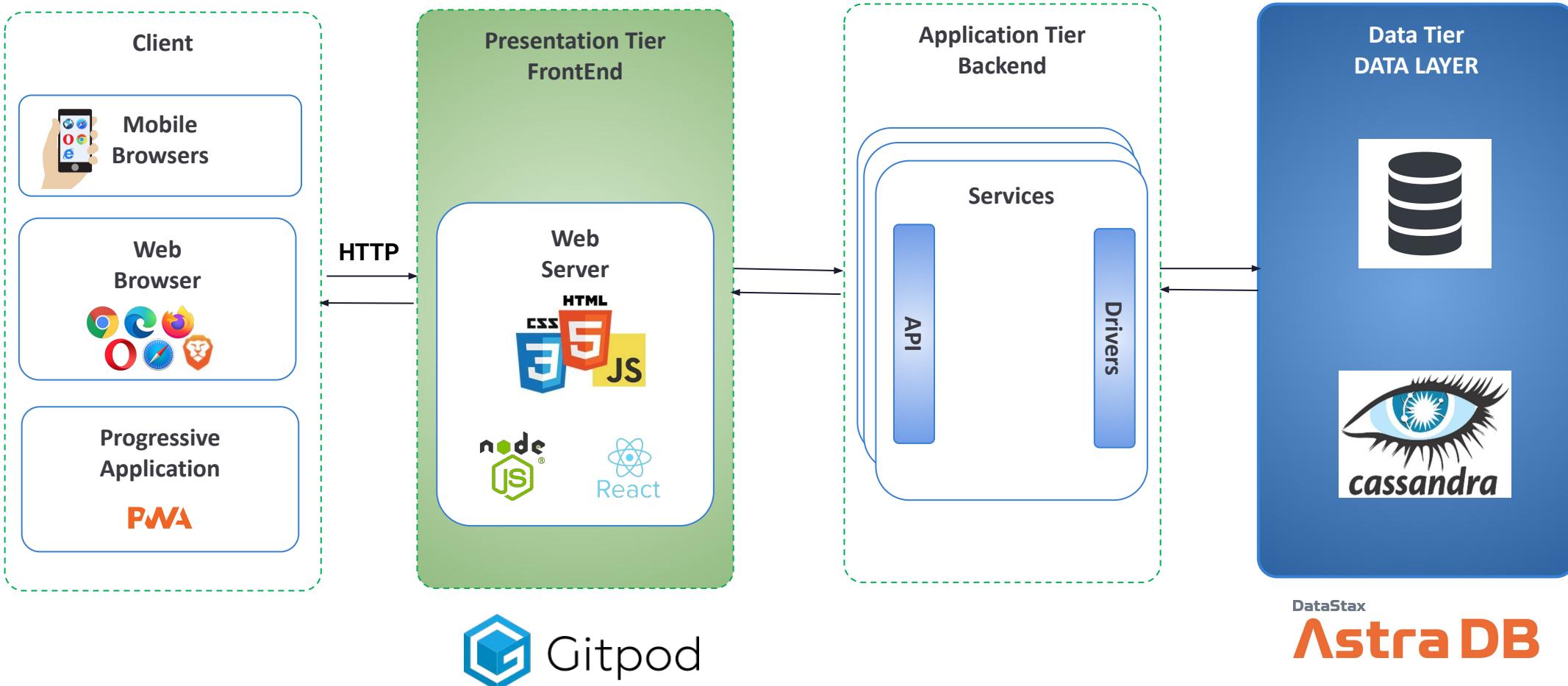


**06**

**Resources**



# Data Layer: Architecture



DataStax Developers

# Hands-on #1:

- Create Astra Instance



<https://github.com/datastaxdevs/appdev-week1-todolist>



# Agenda

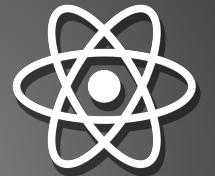
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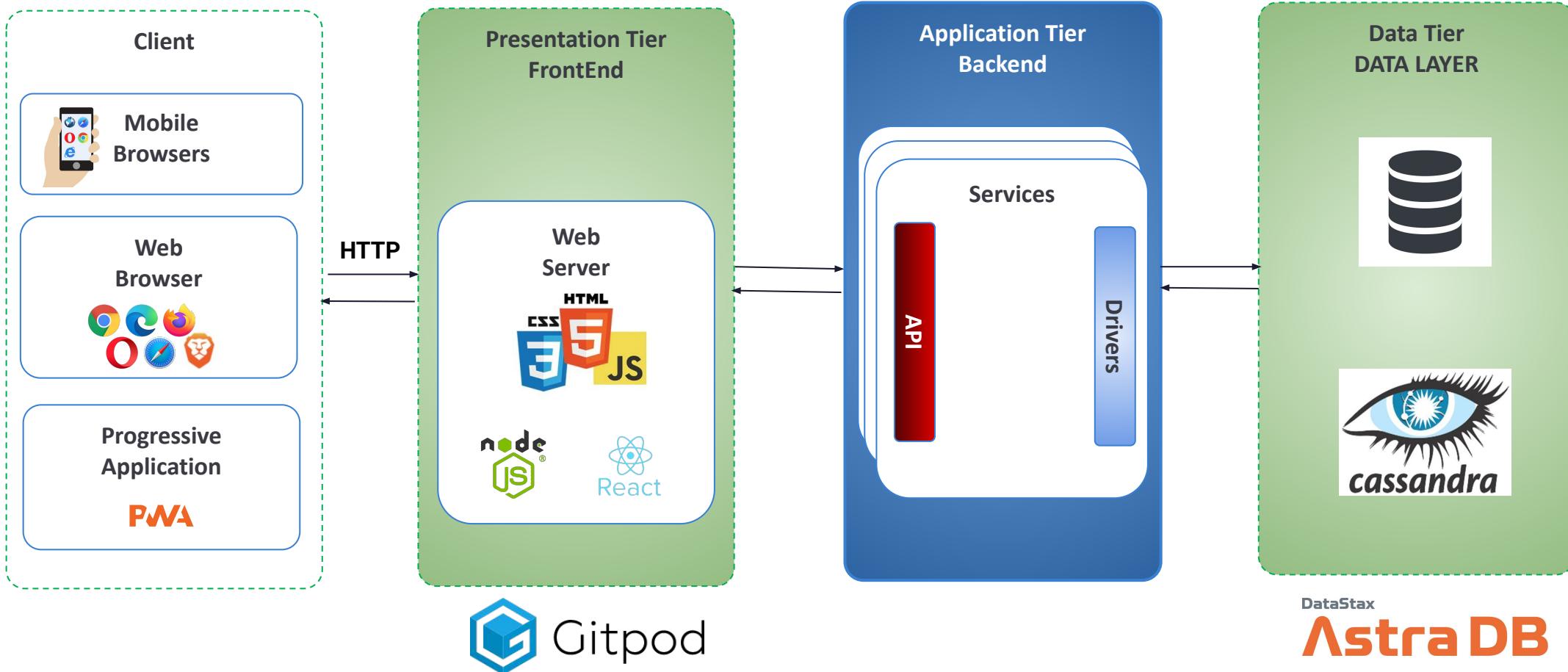


06

Resources



# Backend: Architecture



# Backend : What is an API ?

## Application Programming Interface

- API lists operations that developers can use, along with a description of what they do.
- Make Life Easier for Developers
- APIs Are Used For Communication Between Services

## REST API

- Use HTTP format, methods and verbs (GET,POST,PUT,DELETE) to expose functionality
- Multiple specifications
  - Open API (Swagger)
  - GraphQL

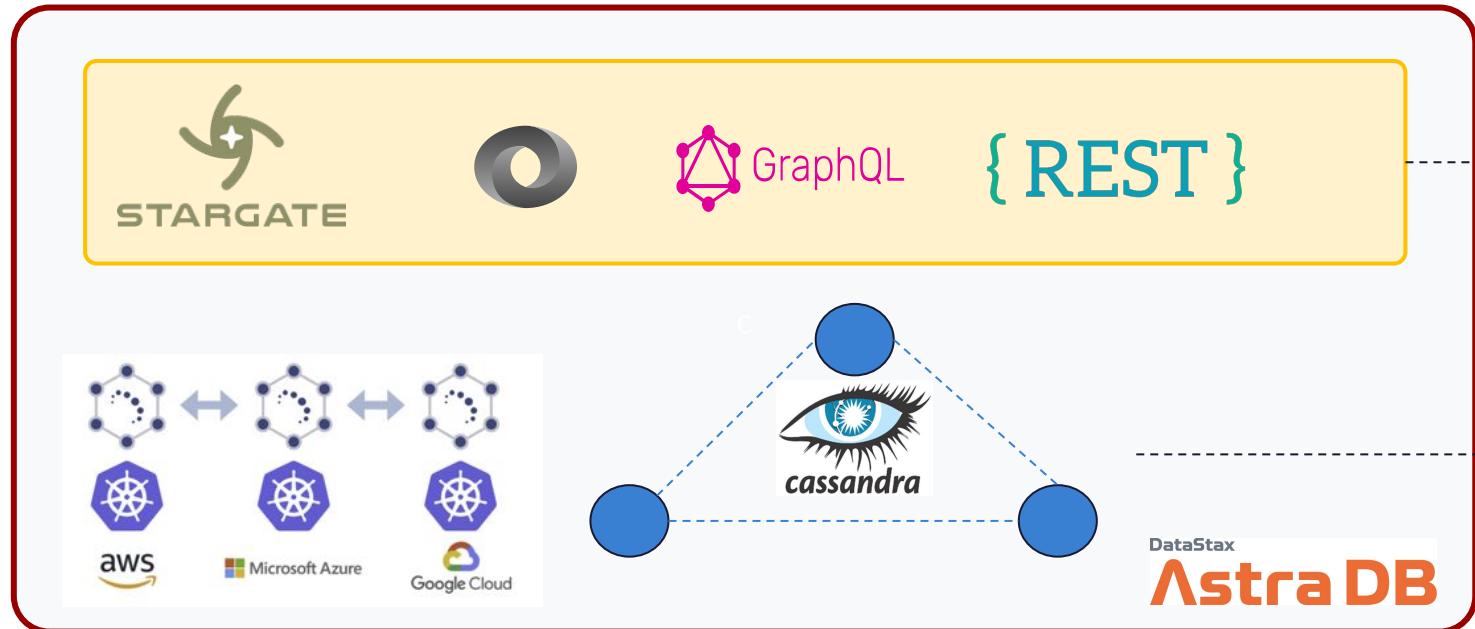
**Let's use it !**



The screenshot shows the Swagger UI interface for a REST API. At the top, there is a header with the Swagger logo, the URL "/swagger.json", and a green "Explore" button. Below the header, there are three main sections: "documents", "schemas", and "data". The "data" section is expanded, showing a list of API endpoints with their methods, URLs, and descriptions. The endpoints listed are:

- GET /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows Retrieve all rows
- POST /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows Add row
- POST /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows/query Submit queries
- GET /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows/{primaryKey} Retrieve rows
- PUT /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows/{primaryKey} Update rows
- DELETE /v1/keyspaces/{keyspaceName}/tables/{tableName}/rows/{primaryKey} Delete rows
- GET /v2/keyspaces/{keyspaceName}/{tableName}/rows Retrieve all rows
- GET /v2/keyspaces/{keyspaceName}/{tableName} Search a table

# Backend : Astra Provide APIS



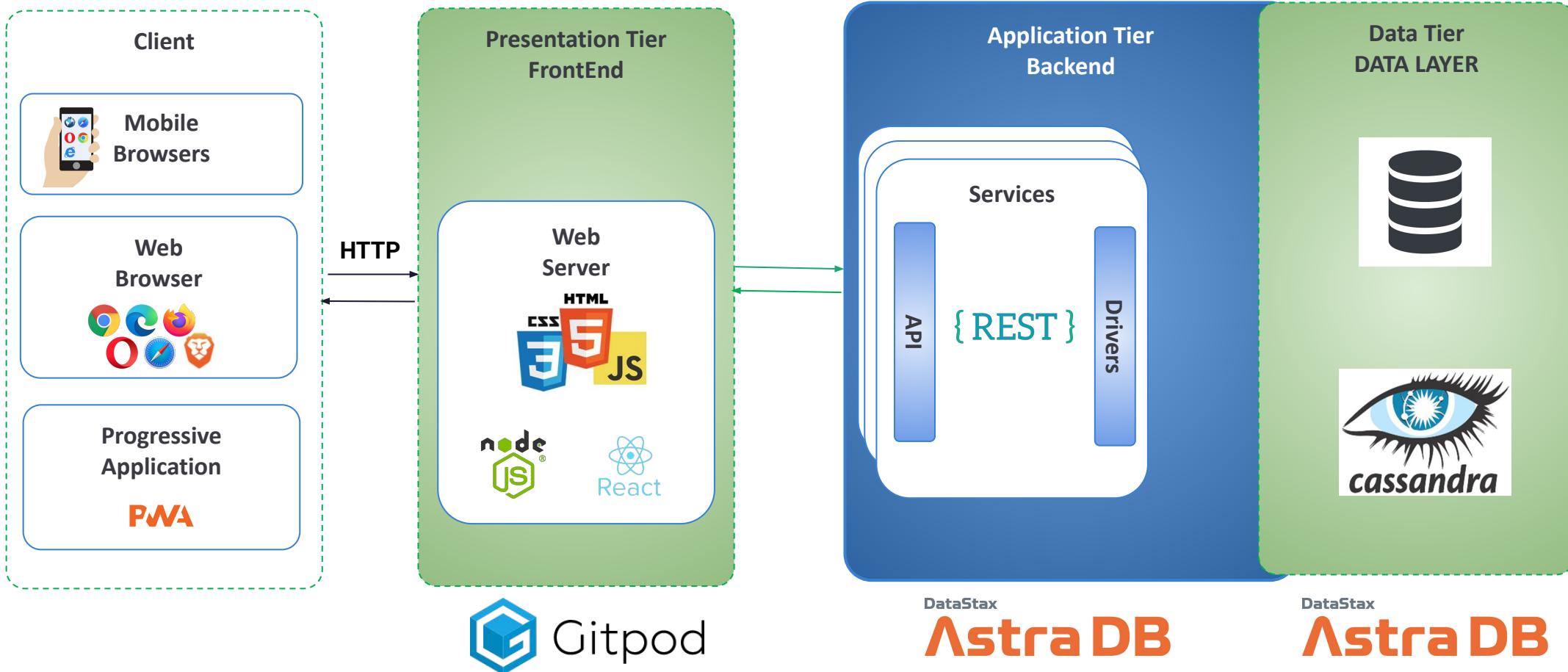
**OSS Stargate.io**  
A data gateway to allow  
multiple usages



**OSS Apache Cassandra**  
A Column oriented NoSQL  
Database



# Backend: Architecture



# Hands-on #2:

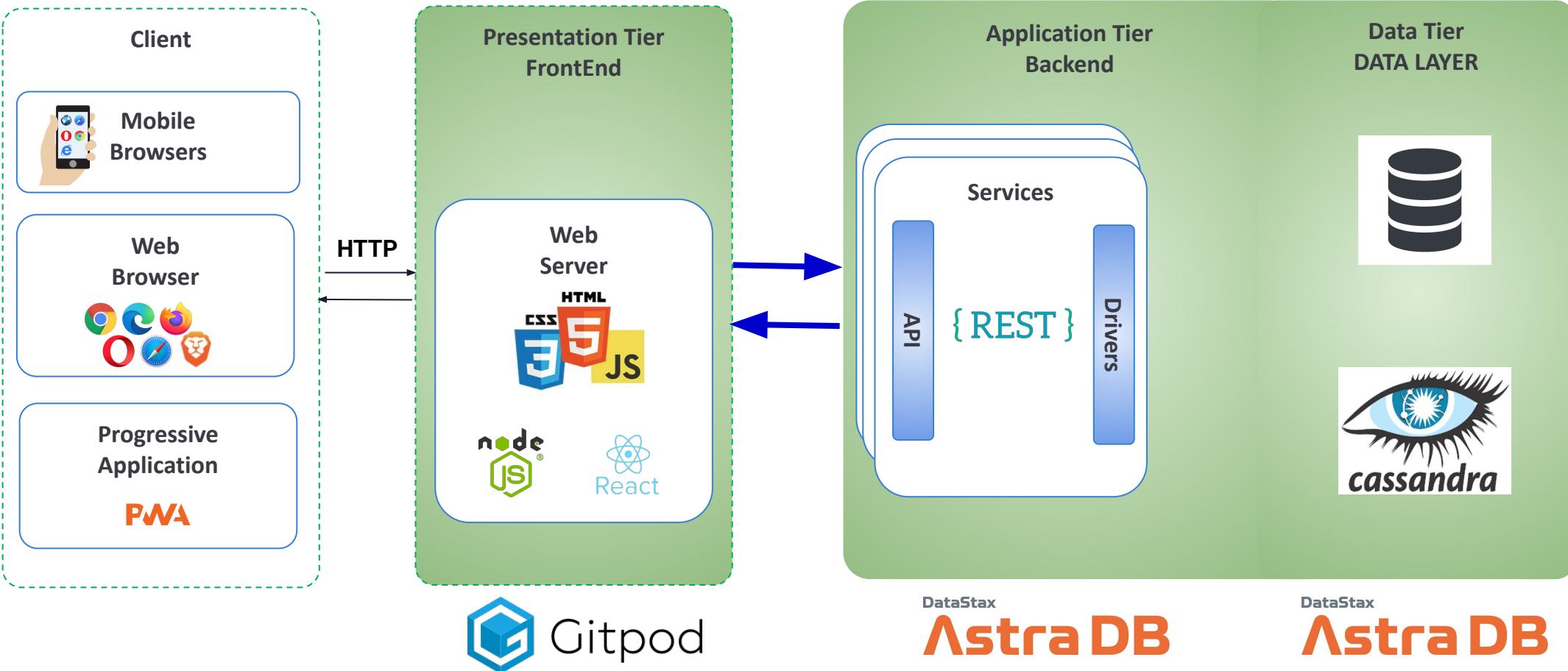
- Create a token
- Use API



<https://github.com/datastaxdevs/appdev-week1-todolist>



# Final Step



# Demo #2:

- Setup Todo App
- Start Todo App
- Check Database



<https://github.com/datastaxdevs/appdev-week1-todolist>



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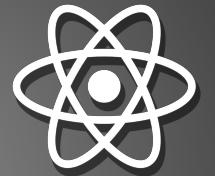
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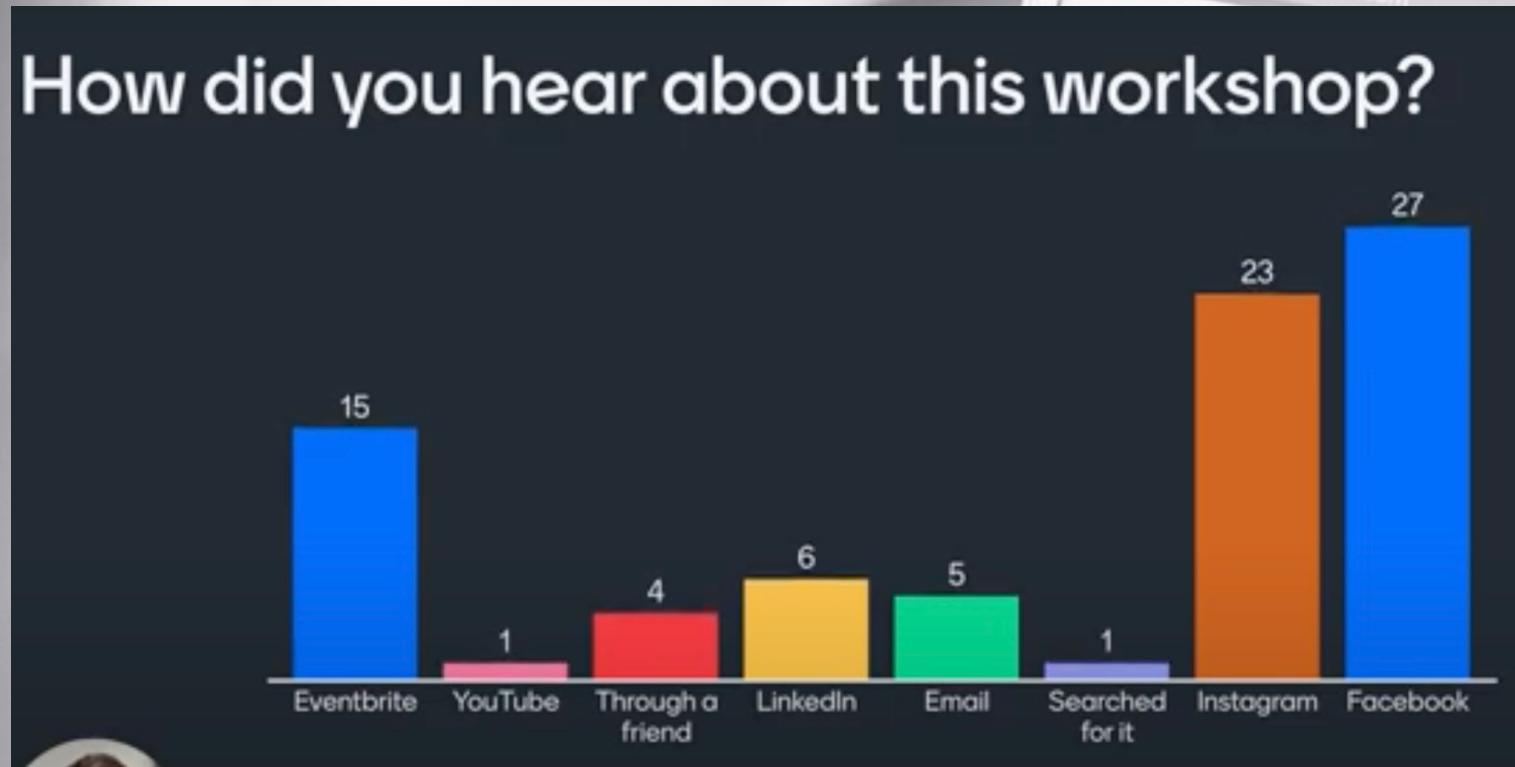


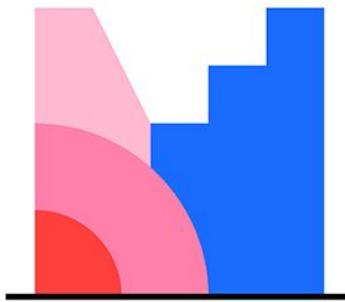
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Resources



# menti.com First Questions !



 **Mentimeter**

## Swag Winners



Congratulations to 1st, 2nd and 3rd place on the menti quiz!

To claim your prize, please send an email to:

[jack.fryer@datastax.com](mailto:jack.fryer@datastax.com)

**\*\* Include a screenshot of your menti screen**

# Claim your FREE Voucher



## Vouchers (normally 145\$ each)

- valid for 3 months,
- valid for 2 attempts

<https://www.datastax.com/dev/certifications>

Claim using the link:  
<http://dtsx.io/workshop-voucher>



# How to submit Homeworks

The screenshot shows a GitHub issue template for a "Homework Assignment". The template instructions state: "Use this template to submit the homework. If this doesn't look right, choose a different type." It includes a text input field with placeholder "[HW] Cedrick Lunven" and a user profile picture. Below the input field are rich text editing tools. The main content area contains the following text:

```
**Name:** Cedrick Lunven  
**Email:** cedrick.lunven@datastax.com  
**Linkedin Profile:** https://linkedin.com/in/clunven
```

Below this, there are sections for attaching screenshots and files, with a note: "Attach the homework step I screenshots below:" and "Attach the homework step II screenshots below:". There is also a section for attaching files by dragging & dropping, selecting or pasting them.

On the right side of the template, there is a sidebar with the following sections:

- Assignees:** clun, HadesArchitect, RyanWelford, SonicDMG
- Milestone:** No milestone
- Linked pull requests:** None yet

At the bottom of the template, there is a note: "It looks like this is your first time opening an issue in this project! Be sure to review the contributing guidelines and code of conduct." A red box highlights the "code of conduct" link.

At the very bottom of the template, it says: "Styling with Markdown is supported" and has a "Submit new issue" button.





## HOMEWORK

# WEEK 1 (due date 7/14)

### #1 - [Complete hands-on]

Run the todo Application in Gitpod connected to AstraDB and create a funny TASK :D upload a screenshot

**Get your badge!**  
(and brag on LinkedIn)



### #2 - [(Optional) Tutorial video]

- ▶ Know More about HTML and CSS
- ▶ Know More about Javascript and React

All needed info in github repo

<https://github.com/datastaxdevs/appdev-week1-todolist>

# LEARNING PATHS at the [academy.datastax.com](https://academy.datastax.com)



# What's coming ?

[datastax.com/workshops](http://datastax.com/workshops)

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3 Week #AppDev Learning Series  
Week 1:  
**Build your first app with Javascript and NodeJS**  
July 7 or 8 8:30pm IST / 9pm CET / 11pm ET  
**LEVEL UP Developers**

MULTIPLE DATES  
#AppDev Series, Ep.1 - Building your first app with Javascript and NodeJS

[Register Now](#)



Cassandra Day  
**India 2021**  
Saturday July 10 12pm IST  
**LEVEL UP Developers**

SAT JUL 10 2021  
Cassandra Day India

[Register Now](#)



3 Week #AppDev Learning Series  
Week 2:  
**Building your own TikTok Clone!**  
July 14 or 15 8:30pm IST / 9pm CET / 11pm ET  
**LEVEL UP Developers**

MULTIPLE DATES  
#AppDev Series, Ep.2 - Building your own TIKTOK clone with Javascript!

[Register Now](#)

**7/7 and 7/8**

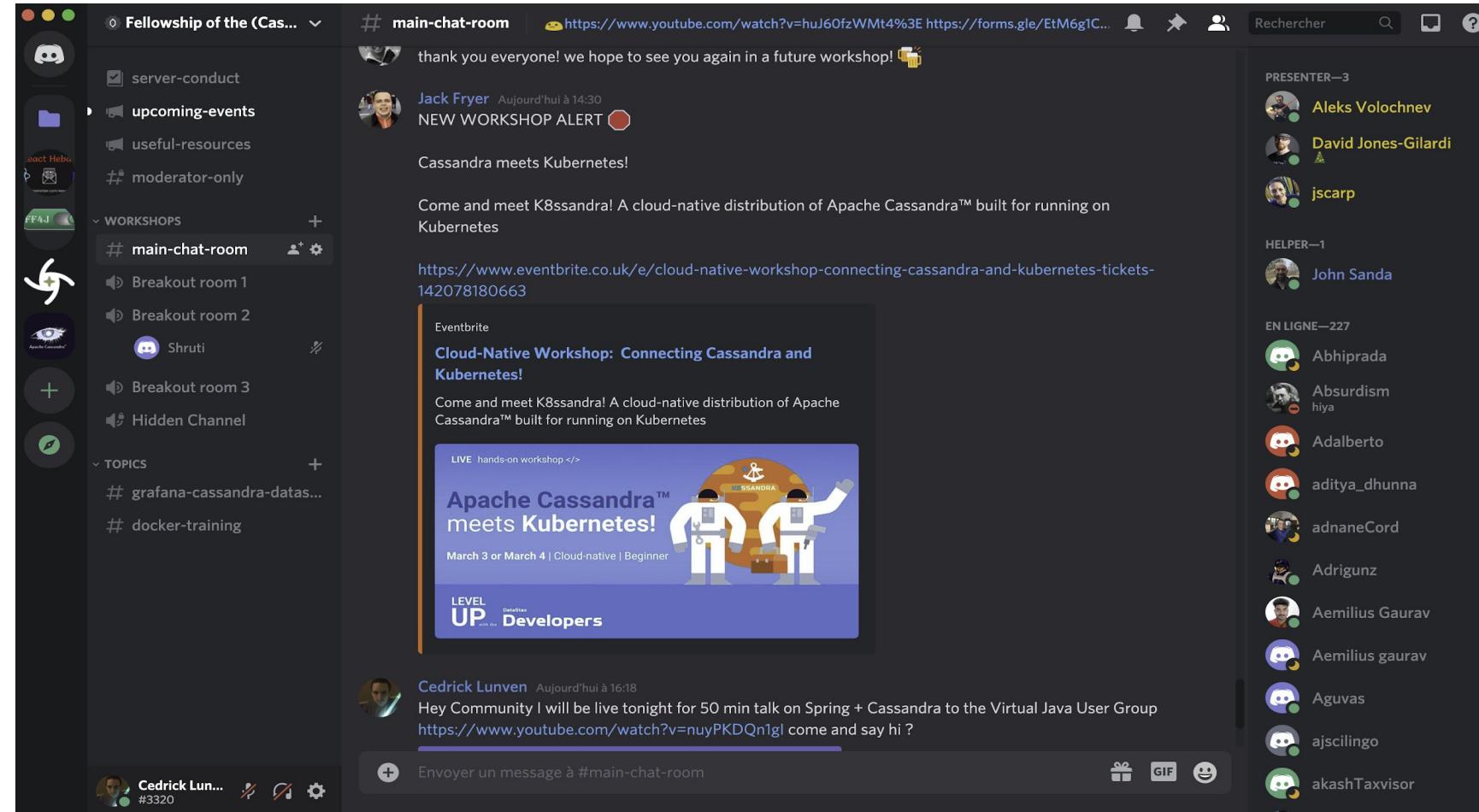
**7/10**

**7/14 and 7/15**

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[dtsx.io/discord](https://dtsx.io/discord)



# Thank you!

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