INTRO TO JAVASCRIPT.

02.13.2024

// TODO.

JavaScript

Putting it all together

Lab 1

JAVASCRIPT.

What is JavaScript?

Javascript developer salary in Canada

How much does a Javascript Developer make in Canada?

Average base salary ❓

$72,092   Per year ⌄
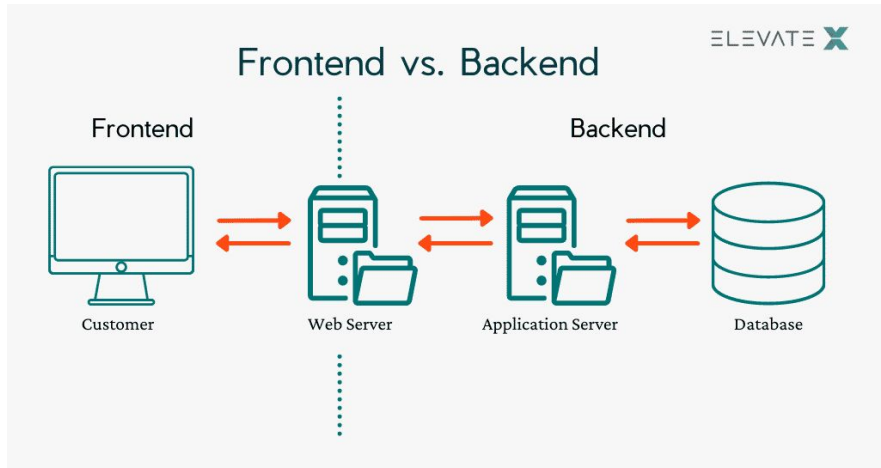
What is JavaScript?

One of the most popular languages

Average salary of a JavaScript dev is ~[70 000 - 120 000]

You can be in the frontend and backend just with javascript.

Frontend vs. Backend

ELEVATE X

Frontend

Backend

Customer — Web Server — Application Server — Database

Backend vs Frontend vs Full Stack.

Backend developers primarily work on the server-side of web applications.

Frontend developers focus on the client-side of web applications

Backend.

Deals with the server-side of web applications, managing data storage and processing.

Responsible for database management, server configuration, authentication, authorization, and business logic implementation.

Frontend.

Deals with user interface (UI) design, interactivity, and user experience (UX)

Responsible for building responsive layouts, implementing client-side functionality, and optimizing web applications for performance and accessibility.

Backend @ JAC.

Databases

Application Development |

Application Development ||

Application Development |||
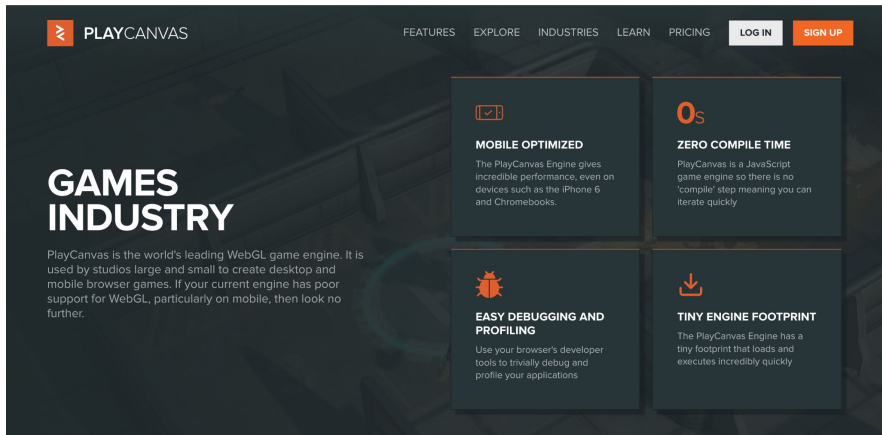
... and more !!

Frontend @ JAC.

User Interfaces

Web Programming |

Web Programming ||

Web Programming |||

... and more !!

How is JS used?

Web / Mobile Apps

Real-time Networking Apps

Command-line Tools

Games

Where does JS Run?

Originally designed to run only in browsers (e.g. FireFox and Chrome) using a JavaScript Engine.

A smart dude took the open-source JavaScript engine that was in chrome and embedded it inside a C++ program.

He called this node.

Now we can run JavaScript outside the browser too

Why is this so cool?

Cross Platform

Package Management

Single Programming Language

High Performance

Node.js

Widely adopted by developers and companies for building scalable, high-performance applications, including ...
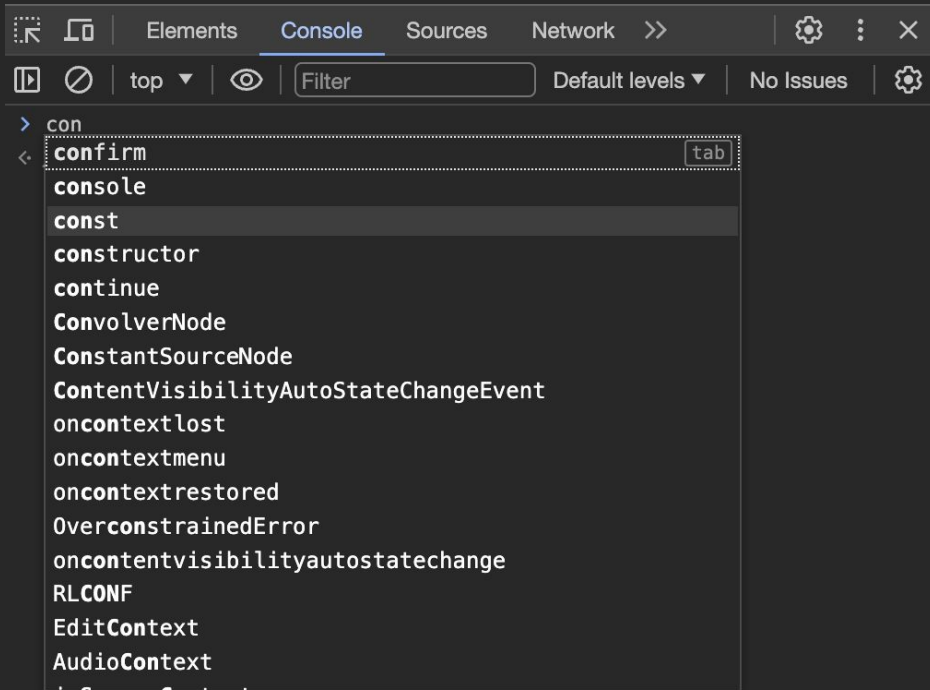
> web servers
> APIs
> microservices architectures
> Real-time chat applications

(outside the scope of this class tho)

GETTING STARTED.

With DevTools (ofc)

In the console tab we can write any any JavaScript code we desire.

Programming in JS.

Where do we put our JavaScript code?

put the script element as the last element in the body section

```
<script>
    // Where do i go ??
</script>
```

Why?

The browser parses this file from top to bottom

if we put the script element in the head section and we happen to have a lot of JavaScript code, it will get busy parsing that code instead of actually rendering that page. (bad news)

```
<body>
  <h1>Hello World</h1>
  <script>
    //put JavaScript HERE !!!!!
  </script>
</body>
```

From DevTools to Program.

Anything that can be typed in Chrome DevTools can be typed in this script tag.

```
<body>
  <h1>Hello World</h1>
  <script>
    console.log("Hello World");
    // From DevTools to source code
  </script>
</body>
```

Separation of concerns.

We ideally do not want to store our JavaScript code inside our html.

Variables.

fundamental concept of almost all programming languages.

In JS, to declare a variable use "let"

```js
let name = "John Abbott";
console.log(name);
```

Variables.

Cannot be a reserved keyword.

Cannot use a hyphen (-)

Cannot start with a number

```
let if; // not legal ❌
let first-name; // not legal ❌
let 1hello; // not legal ❌
let firstName; // ✅
let true; // not legal ❌
```

Constants.

In real world scenarios, we do not want the value of a variable to change.

if you do not need to re-assign, always opt for constants when working with JavaScript.

```js
const pi = 3.14; // 🥧
```

Types.

JS is a "dynamic" language with two categories of variable types:

      > Primitives (string, boolean, number, null)
      > References (don't worry about this for now)

```javascript
let name = "wow";
console.log(typeof name);
name = 42;
console.log(typeof name);
```

Types.

In JavaScript, the typing is not strict so if we decide to change the value of a variable, the type will change accordingly.

Unlike the languages that we are familiar with (C#, Java, etc.), JavaScript let's us change the variable type on the fly.

Now imagine not having static types and you are working at a large company with a bunch of unexpected runtime errors and now it's your job to fix it.

```javascript
let name = "wow";
console.log(typeof name);
name = 42;
console.log(typeof name);
```
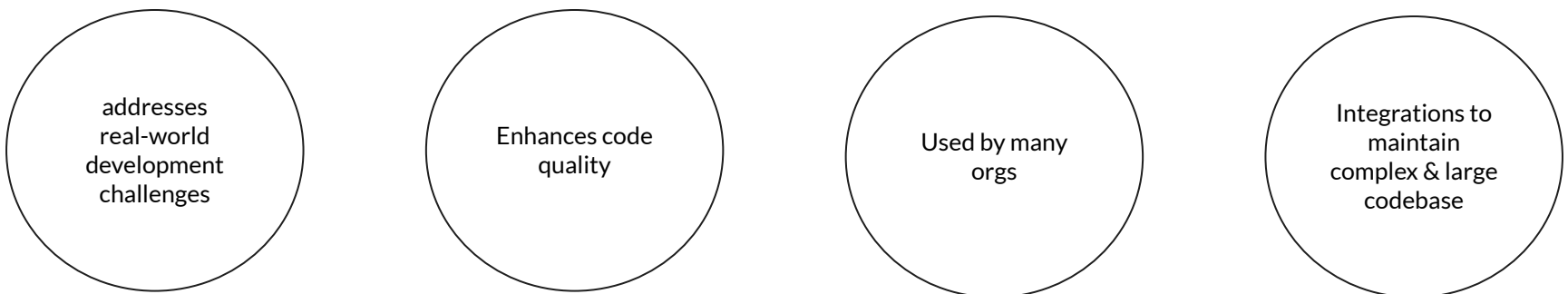
Typed JS.

Another smart guy named Anders Hejlsberg got fed up with this issue and created a new language.

He called it TypeScript.

Outside the scope of this class, however taking time to appreciate JS now will set you up for success with TS later on.

Why is TypeScript so neat?

addresses real-world development challenges

Enhances code quality

Used by many orgs

Integrations to maintain complex & large codebase

LET'S BUILD.

gcristina.g whytsai lord_dark... evara_sal... herbivorin... peacefulm... sickygal dahdah.mtl

peacefulm...   peacefulm...

LAB TIME.