Vijfhart,

dat klopt voor jou!

Angular

Introduction round

Role / background within KPN and before 💼

Hobbies / interests / family / pets 🐠🐈👶🏄

What do you hope to learn? 👩‍🏫

Before we start...

1. Please keep your camera on 😁
2. Questions? Just ask! Feel free to interrupt. 🙋
3. Two 10 minutes breaks. ☕

Overview

1. Overview web (development)
2. HTML, CSS, JavaScript and TypeScript
3. Angular Introduction + hello world demo
4. Angular Exercise
5. Angular demo + exercises

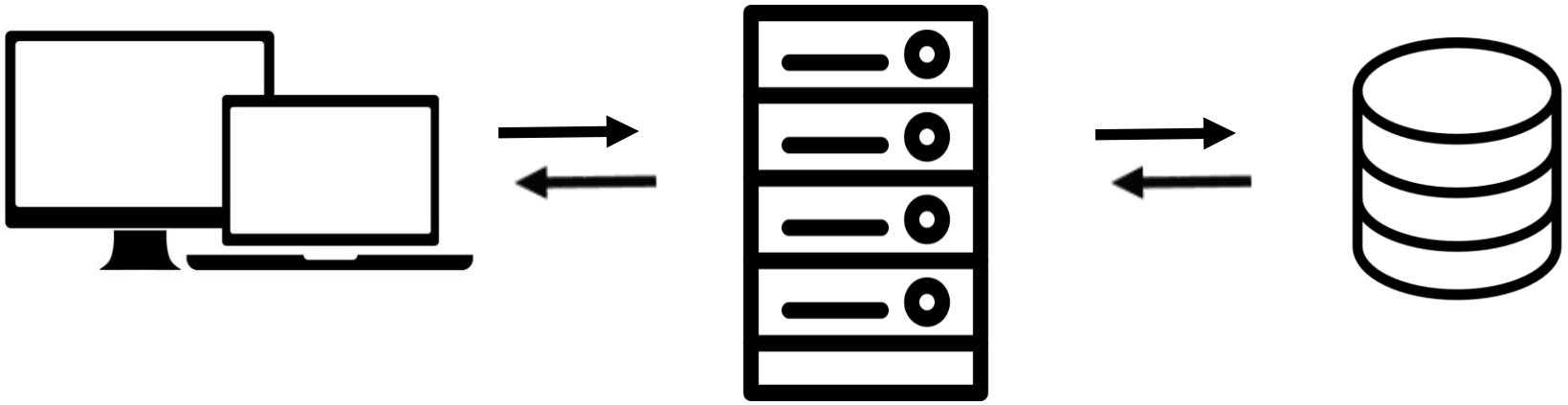
Tooling

1. Preferably an IDE (Visual Studio Code, NotePad++, Atom, Sublime etc) + Node.js installed

2. Alternatively: online environment such as Stackblitz or CodePen

3. Must have: Browser (Chrome, Firefox or Edge)

Overview web (development)

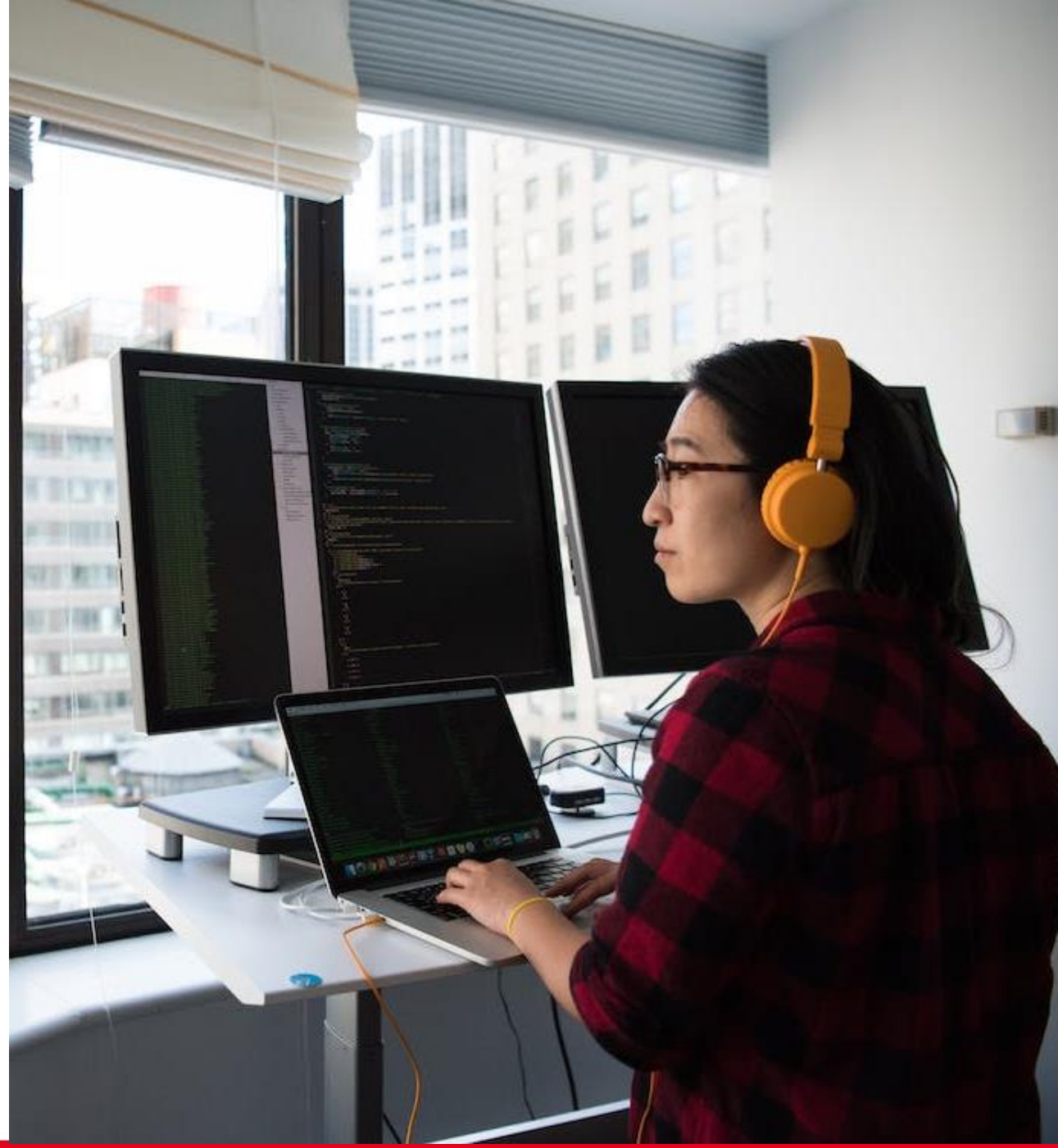


HTML, CSS and JS

HTML (Hypertext Markup Language): The standard markup language used to structure content on the web.

CSS (Cascading Style Sheets): The style sheet language used to define the visual presentation of a web page.

JS (JavaScript): The programming language that allows for dynamic and interactive elements on a web page.



HTML

What is HTML?

- Hyper Text Markup Language
- HTML determines what is on the web page (another word for website), for example text, buttons, forms and images.
- Using special words between < and >, the internet browser can display the content of the page.

Why do we need HTML?

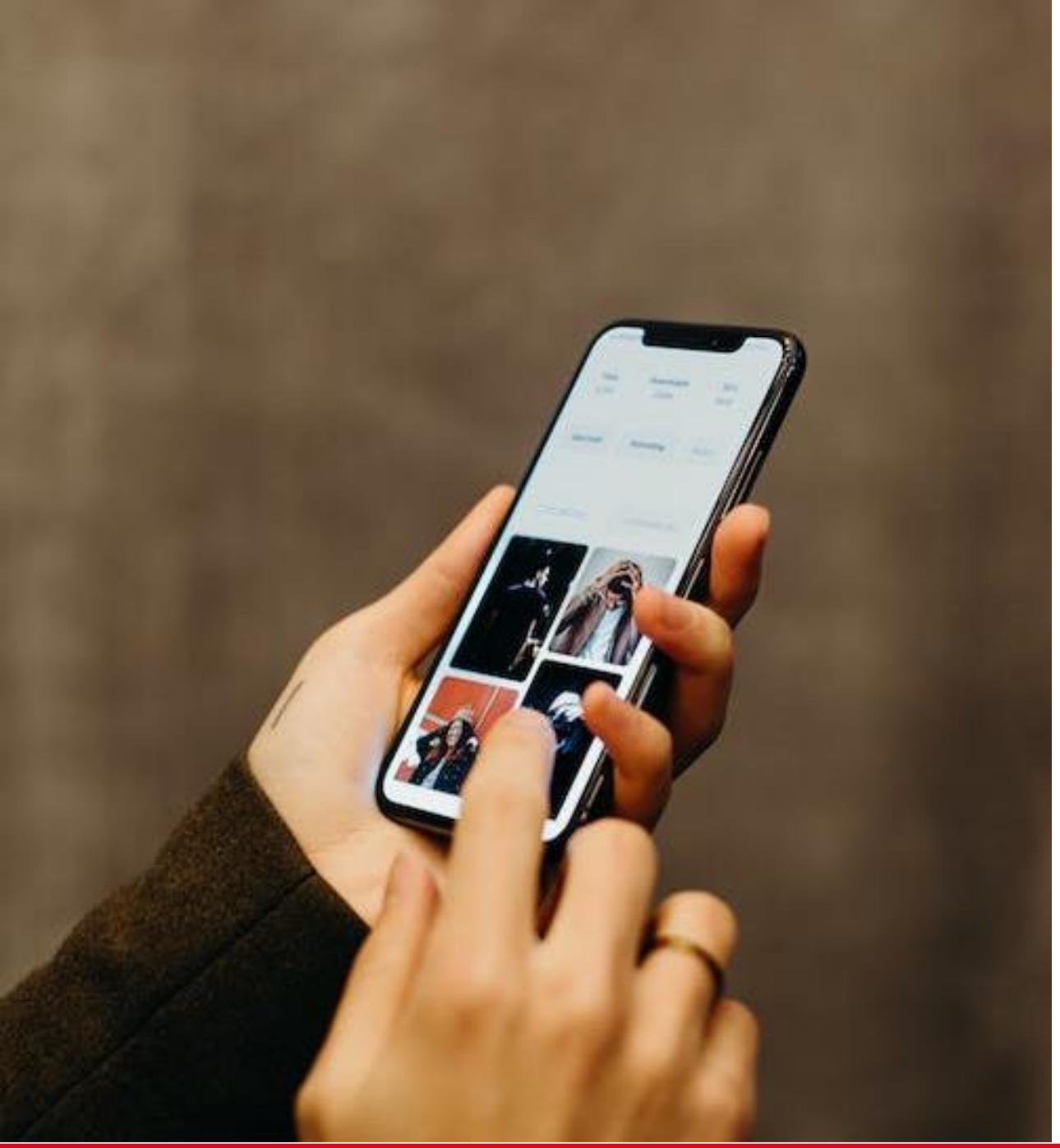
HTML is the content of web pages

This includes:

- Text
- Headers
- Forms
- Buttons
- Images
- Video
- And a lot more!

Basic HTML document

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Basic HTML Document</title>
</head>
<body>
  <h1>Welcome to My Basic HTML Page</h1>
</body>
</html>
```



HTML elements

HTML element is a component on a web page

```
<startTag>Content</endTag>
```

There are many different types of HTML elements, for example: p, form, div, h1

HTML elements can contain other HTML elements

More information and more elements: https://www.w3schools.com/html/html_elements.asp

HTML attributes

- HTML attributes provide additional information about an element and help define its properties or behavior.
- They are always specified in the start tag (or the opening tag) of an HTML element.
- They are usually presented in name/value pairs like name="value".

```
<a
href="https://www.example.com">Visit
Example</a>

<img src="path_to_image.jpg"
alt="Description of Image">
```

Attributes we'll need for CSS and JavaScript

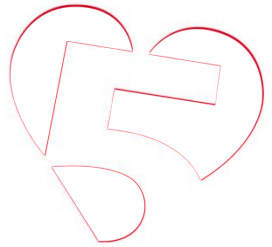
- Class: HTML elements can have a class attribute. This can be used to group certain elements and give it a certain layout or behavior.

```
<p class="special">Some text</p>
```

- Id: HTML element can have an id. This must be a unique id for the page.

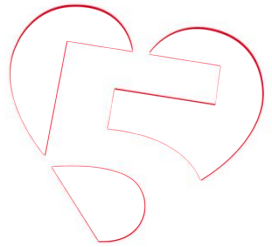
```
<p id="test">Some text</p>
```

HTML element



```
<tag attr="value">
  <inner>
    Some text
  </inner>
  <inner>
    Some more text
  </inner>
</tag>
```

HTML element



```
<tag attr="value">inner HTML</tag>
```

Nesting HTML elements

- Nested elements are HTML elements inside other elements.
- Outer element is the "parent"; inner element is the "child".
- Enables complex structures, like lists within lists.
- Ensure proper opening and closing to avoid display errors.

HTML document structure

File Edit Selection View Go ··· workshop-html-css-js-pwa

Welcome | basic.html

Demo - HTML > basic.html > ...

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Basic HTML Document</title>
7  </head>
8  <body>
9      <header>
10         <h1>Welcome to My Basic HTML Page</h1>
11     </header>
12
13     <main>
14         <section>
15             <h2>About This Page</h2>
16             <p>This is a simple HTML document to demonstrate the basic structure of a webpage.</p>
17         </section>
18     </main>
19
20     <footer>
21         <p>Created by Maaike</p>
22     </footer>
23 </body>
24 </html>
25
```

0 0 Ln 25, Col 1 Spaces: 4 UTF-8 CRLF HTML Go Live Blackbox 19

CSS

What is CSS?

Cascading Style Sheets

Used for creating the layout of the web page

With CSS we define rules for certain HTML elements

We can do a lot of things with CSS! Change the font, color, position, size, shadows, borders, shape... We can even create complete animations!

Adding CSS to your page

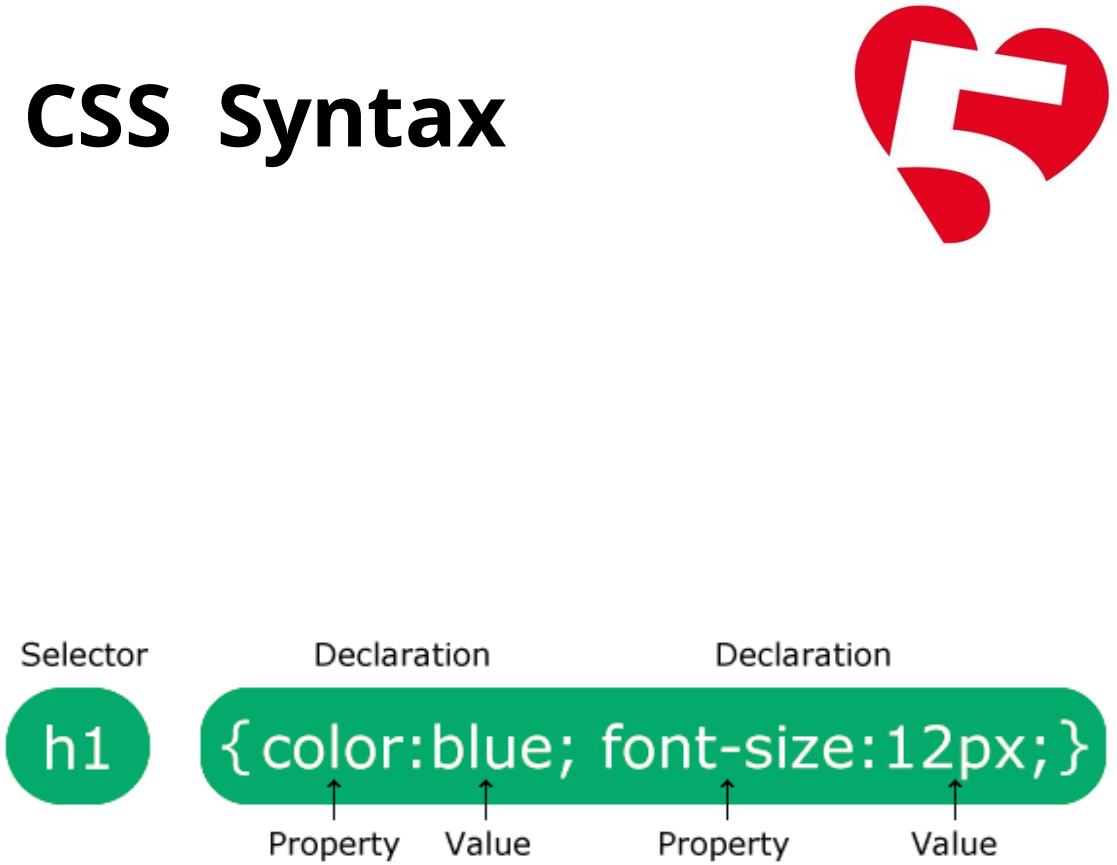
Different ways to add CSS to your page:

- Style attribute on an element
- Style HTML element
- Link a separate page (preferred way)

To link a separate page, in the head tag add:

```
<link rel="stylesheet" href="name-
css-file.css">
```

CSS Syntax



https://www.w3schools.com/css/css_syntax.asp

CSS Selectors

We'll keep it simple here:

- By tag name:

```
p {
  color: red;
}
```

- By class:

```
.special {
  color: green;
}
```

- By id:

```
#element2 {
  color: yellow;
}
```

CSS properties

Used for adjusting a certain part of the layout

More info:
https://www.w3schools.com/css/css_colors.asp

Specificity

When CSS declarations are conflicting, the one with the most points win:

- Id: 100
- Class: 10
- Tagname: 1

The most specific declaration determines the layout that shows. That’s called specificity.

CSS Demo

JavaScript

What is JavaScript?

Scripting language

That can be used server side (node.js) and client side

Client side: we'll use it to make our pages interactive

We could do a 7 week course on JavaScript…

But here's the 10 minutes version to get you ready for Angular:

- Declare variables
- Writing a function
- Conditionals and loops

Declare a variable

- We often need to have a placeholder for a value that will be set during program execution.

- `let nr = 5;`
- `let name = “Maaike”;`
- `console.log(name, nr);`

Writing a function

- Functions encapsulate reusable code.
- Define using function keyword.

```
function greet() {
    alert("Hello, World!");
}
```

- You can call this function with:

```
greet()
```

If statements

If statements in JavaScript are used to perform different actions based on different conditions.

This control structure allows the program to make decisions, and execute a certain section of code only if a particular condition evaluates to true.

```
if (score > 50) {
  console.log('You passed!’);
}
```

Loops

- Loops in JavaScript are used to execute a block of code repeatedly until a specified condition returns false.

- There are different kinds of loops, we'll only talk about the for loop here.

```
for (let i = 0; i < 5; i++) {
  console.log(i);
}
```

JavaScript Demo

TypeScript

JavaScript and TypeScript

- TypeScript is a superset of JavaScript that adds static types.
- This means you can assign types to variables, functions, and properties.
- It transpiles to plain JavaScript.

Types for variables

- Variables can be defined with specific types.
- This ensures they hold thas specific type of value such as number, string, boolean, etc.
- This type-checking can prevent many common errors in JavaScript.

```
let isCompleted: boolean = false;
```

Types for methods

Methods can be given a specific type for their return value and for their parameters.

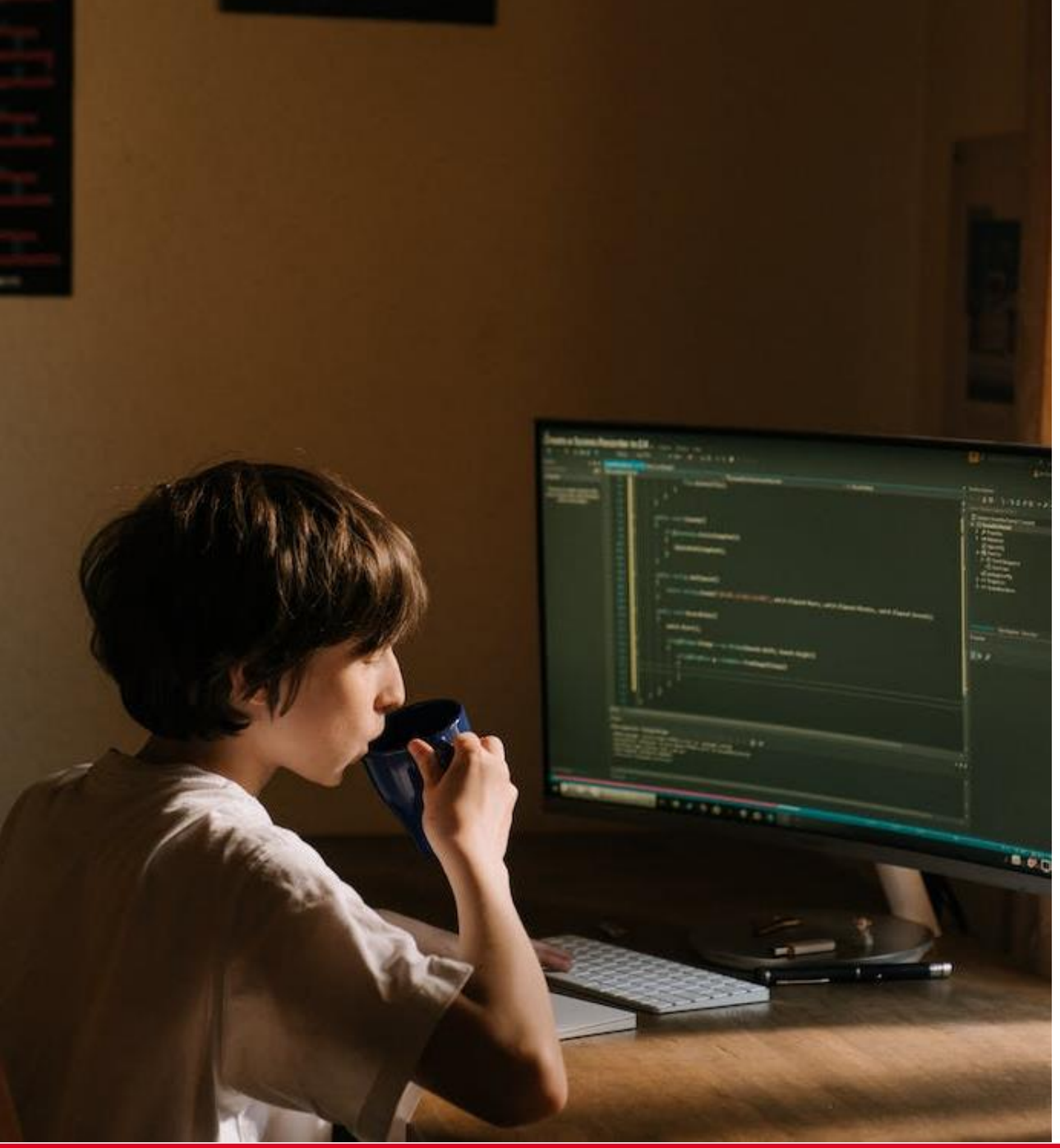
```
function add(a: number, b: number): number
{
  return a + b;
}
```

TypeScript Demo

Angular

What is Angular?

- Angular is an open-source web application framework maintained by Google
- Great for developing single-page applications
- Reusable code and abilities for Progressive Web Apps
- Works with Dependency Injection



Angular's Building Blocks

- Modules: Organize the application into cohesive blocks of functionality.
- Components: Define views, which are sets of screen elements.
- Services: Manage data and logic independent of views.

Angular CLI

Command Line tool for creating and managing Angular applications

(CLI = Command line interface)

You'll use it for:

- Quickstart: Sets up a new project
- Generators: Scaffold components, services, models and modules

Angular Hello World Demo

Code along

Exercise

Data Binding and Directives

One-Way Data Binding: Display variables in your HTML

Two-Way Data Binding: Keeps model and view in sync. (E.g. forms)

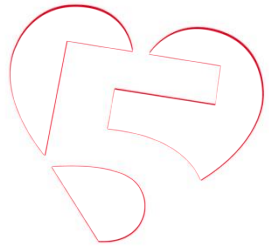
Structural Directives: Change the DOM layout by adding and removing elements. For example: ngIf and ngFor

Note: There's a lot more to say about these... But that's not for now.

Angular Data Binding Demo

Exercise

Angular Components



A component controls a patch of screen called a view.

Each component has its own user interface and logic encapsulated.

Component consists of:

- class to handle logic and data
- HTML template
- Stylesheet

```
import { Component } from
'@angular/core';


@Component({
  selector: 'app-hello-world',
  template: `<h1>Hello, {{name}}!</h1>`,
  styles: ['h1 { font-weight: normal; }']
})
export class HelloWorldComponent {
  name: string = 'Angular';
}
```

Angular Component demo

Let’s do these steps together!

Exercise

Wrap up

1. HTML
2. CSS
3. JavaScript & TypeScript
4. Angular

Contact Rokus for more information: r.janssen@vijfhart.nl


THANK
YOU

Tot ziens!

- Volg ons op LinkedIn
- Ontvang onze nieuwsbrief
- Bekijk onze last minutes

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IT-OPLEIDINGEN