NILS HARTMANN | HTTPS://NILSHARTMANN.NET

Let's type!

A practical introduction to TypeScript

Slides: http://bit.ly/oose-react

NILS HARTMANN

Software Developer from Hamburg

JavaScript, Java
Trainings, Workshops

@NILSHARTMANN

"JavaScript that scales"

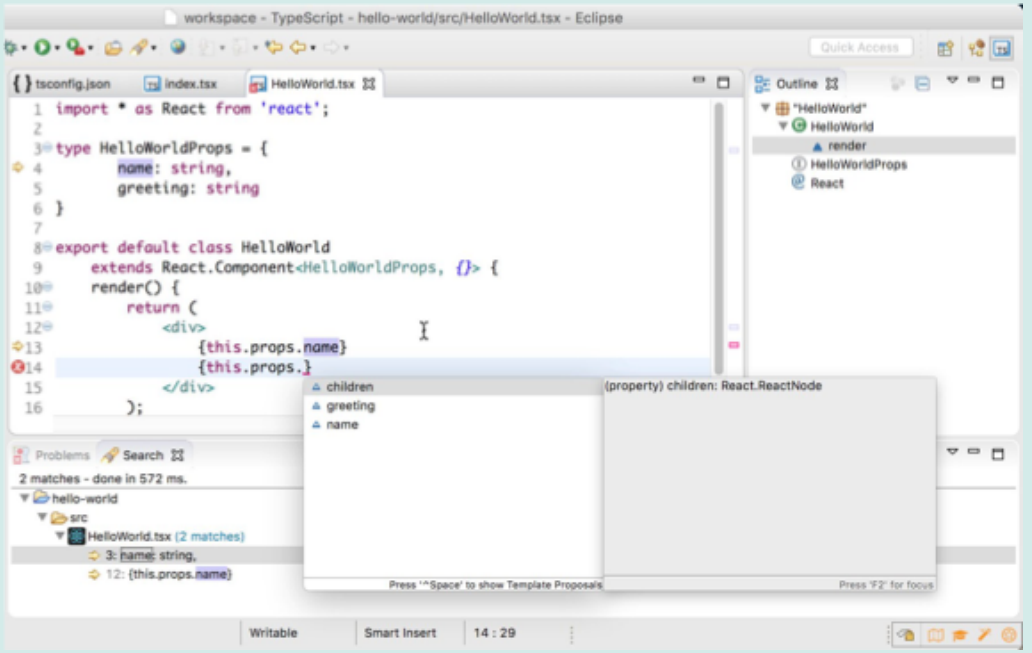
TypeScript

BACKGROUND: TYPESCRIPT

TypeScript: Superset of JavaScript with Type System

- Every JavaScript Code is valid TypeScript code (should be...)
- Compiler compiles TypeScript into JavaScript-Code
  - Compiler Supports JSX (for React Apps)

- Very good IDE Support
  - esp. VS Code and IDEA



Using Types

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   return `Saying: ${what}`;
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Specifying Types is optional, Types will then be inferred:

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let result = 7; inferred Type: number
result = sayIt('Lars') // Error (inferred type of sayIt: string)
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Using Types

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Defining own Types

```
interface Person {              // alternative: type
  firstName: string,
  lastName: string|null,        // nullable Type ("a String or null")
  age?: number                  // optional type (might be undefined)
}
```

Defining own Types - Usage

```
interface Person {            // alternative: type
  firstName: string,
  lastName: string|null,      // nullable Type ("a String or null")
  age?: number                // optional type (might be undefined)
}

function sayHello(p: Person) {
  console.log(`Hello, ${p.lastName}`);
  p.lastName.toUpperCase(); // Error: Object is possibly null
}

sayHello({firstName: 'Klaus', lastName: null}); // OK
sayHello({firstName: 'Klaus', lastName: 777}); // Error: lastName not a string
sayHello({firstName: 'Klaus', lastName: 'Mueller', age: 32}); // OK
```

Generics

```
interface Person { name: string };
interface Movie { title: string };

let persons:Array<Person> = [];
let movies:Array<Movie> = [];

persons.push({name: 'Klaus'});      // OK
movies.push({title: 'Batman'});     // OK
persons.push({title: 'Casablanca'}) // error ('title' not in Person)
```

Type Alias

Union Types and Type Guards

Advanced Types

Thank you!

Slides: http://bit.ly/oose-react

Questions?