

React & TypeScript Overview

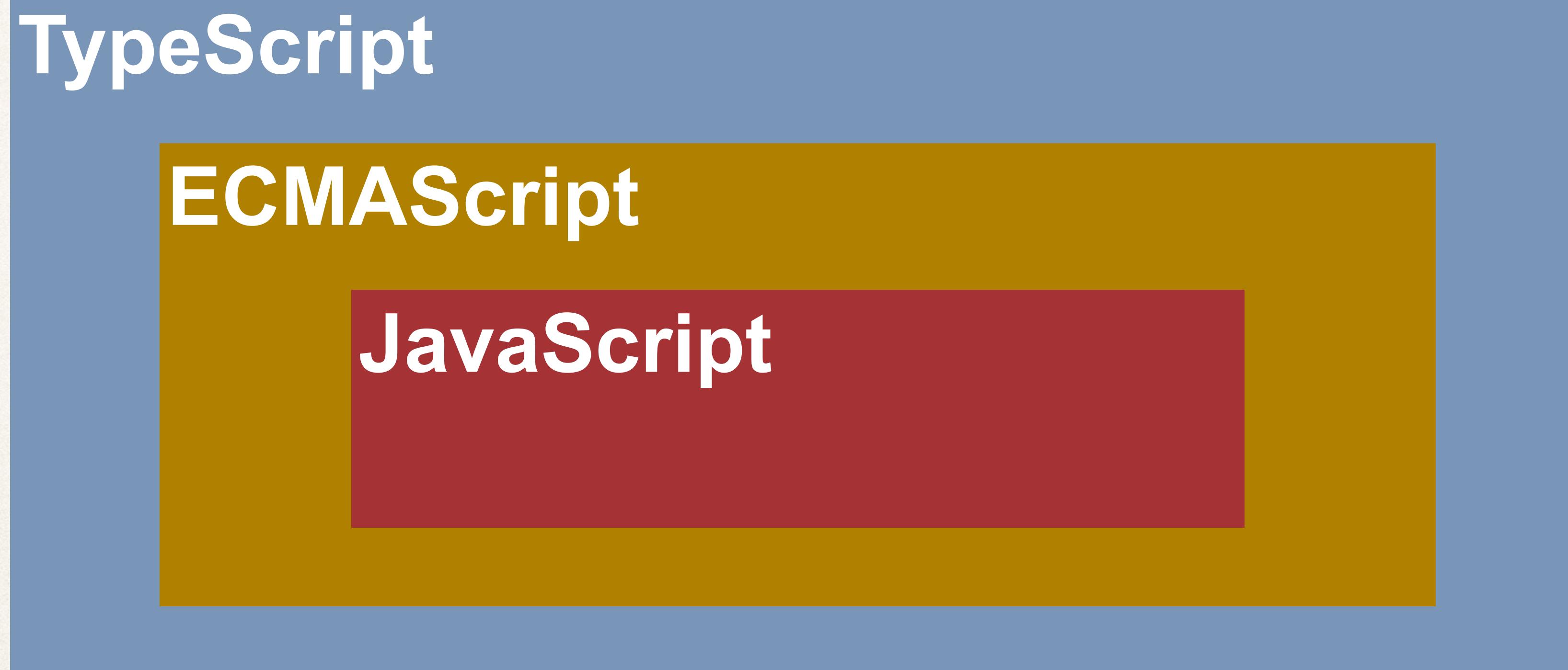


React Development

- For React development, we can develop using various languages
 - **JavaScript**: extremely popular programming language
 - **ECMAScript**: standardized version of JavaScript (ES6, ES9, ...)
 - **TypeScript**: adds optional types to JavaScript
- TypeScript is becoming extremely popular for React

Relationships

- TypeScript is a superset of JavaScript and ECMAScript

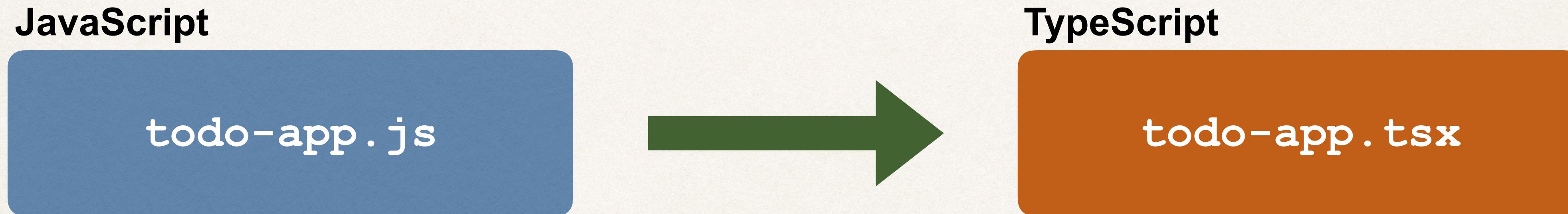


TypeScript

- FAQ: Why do many React developers use TypeScript?
- Strongly-typed language with compile time checking and IDE support
- Increased developer productivity and efficiency
- Docs, online blogs and tutorials use TypeScript for coding examples

Convert JavaScript to TypeScript

- To fully see the power of TypeScript running on a React app..
- Let's change our todo application from a JavaScript project to a TypeScript project.



Step 1: Install TypeScript

- We will first need to download TypeScript to an already created React Project.

Project Terminal

```
npm install --save typescript @types/node  
@types/react @types/react-dom @types/jest
```

Step 2: Create a tsconfig file

- We will need a `tsconfig.json` file to use with our TypeScript.
- Specifies the root of the project.
- Specifies compiler options that are required to properly build a TS project.

Project Terminal

```
npx tsc --init
```

Step 3: Add types to each param and variable

- TypeScript needs to validate each param and variable within our app

App.js

```
const addTodo (  
    description,  
    assigned  
)
```



App.tsx

```
const addTodo (  
    description: string,  
    assigned: string  
)
```

Step 4: Create TodoModel.ts

- There is a new type we need to create: TodoModel.

```
Class TodoModel {  
    rowNumber: number;  
    rowDescription: string;  
    rowAssigned: string;  
  
    constructor (  
        rowNumber: number,  
        rowDescription: string,  
        rowAssigned: string  
    ) {  
        this.rowNumber = rowNumber;  
        this.rowDescription = rowDescription;  
        this.rowAssigned = rowAssigned;  
    }  
}
```