Enhanced TypeScript Support
for UI5 Apps – A Quick Intro

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TypeScript? What? Why?

- JavaScript **plus types**
- Purely at development-/compile-time
- https://www.typescriptlang.org
- *.d.ts files: type information for JS libs

Advantages:
- Code completion
- In-place API reference, navigation
- Error messages while you code
- Easier refactoring & maintenance

```typescript
var someNumber: number;

var otherNumber = 1;

function square(x: number) {
    return x * x;
}


type Point = {
    x: number;
    y: number;
};                    …and more
```
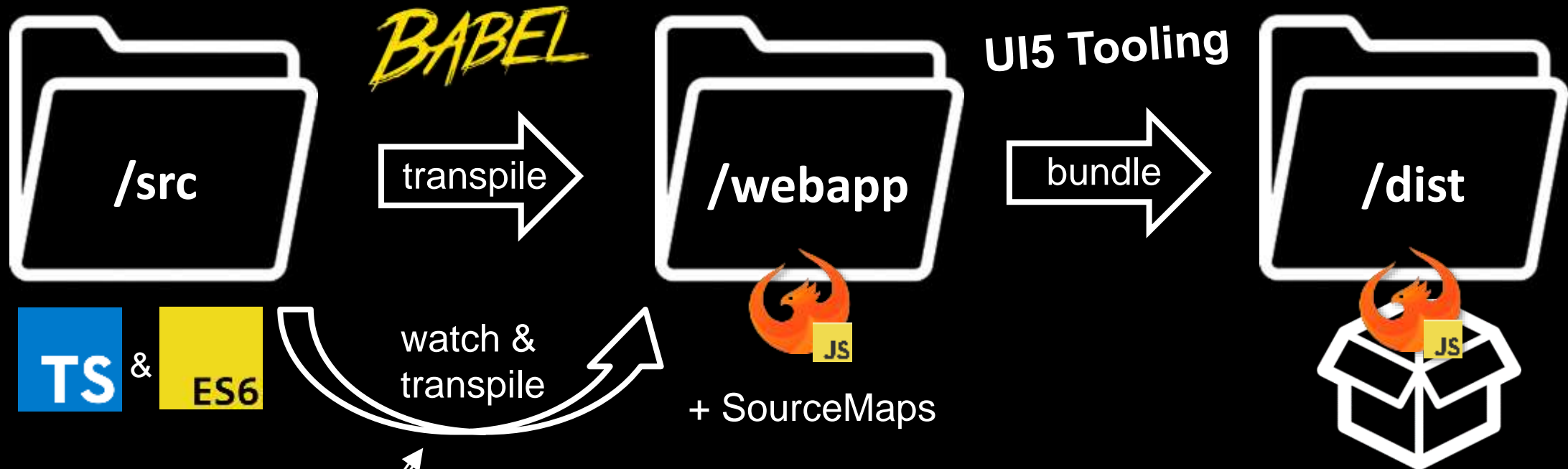
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What is new? – Part 1: Type Definitions

We provide new, enhanced `*.d.ts` type definitions for the UI5 APIs

- Build step needed anyway ➡ we suggest using ES6 modules, classes etc.

- The new `*.d.ts` files ONLY support module usage, not legacy globals like "`new sap.m.Button()`" or other objects below the global "`sap`" object

- Get via npm as `@sapui5/ts-types-esm` and `@openui5/ts-types-esm`

- Also published on DefinitelyTyped.org ➡ available as `@types/openui5`

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We propose a suitable build pipeline

BABEL

/src

transpile

UI5 Tooling

/webapp

bundle

/dist

TS & ES6

watch & transpile

+ SourceMaps

1. TypeScript compilation
2. „babel-plugin-transform-modules-ui5" (by Ryan Murphy)
(https://github.com/r-murphy/babel-plugin-transform-modules-ui5)

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What is new? – Part 3: Samples & Documentation

We provide samples with documentation and a scaffolding template

Simple "Hello World" app

- https://github.com/SAP-samples/ui5-typescript-helloworld
- Including a <u>detailed step-by-step description</u> explaining the setup (https://github.com/SAP-samples/ui5-typescript-helloworld/blob/main/step-by-step.md)

TypeScript version of the UI5/CAP sample app:

- https://github.com/SAP-samples/ui5-cap-event-app/tree/typescript ⇐ `typescript` branch
- Including a <u>controller TypeScript code walk-through</u> (https://github.com/SAP-samples/ui5-cap-event-app/blob/typescript/docs/typescript.md)

TypeScript app template for Easy UI5 Generator

- https://github.com/ui5-community/generator-ui5-ts-app

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See it in Action

Demo time!

Learned from the demo:

- App code mostly looks … very normal!
  → Only little TypeScript-specific code – most is type casts and parameter types

- Code completion and in-place documentation are *really* nice

- Debugging the original TypeScript code is possible, thanks to sourcemaps

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Outlook

Work in progress

- Good starting point, but improvements are planned
  - → might involve **incompatible changes**!

Use it – we need your feedback

- Occasional quirks are possible – but this is what we are working on
- Often there are several ways to express the same thing in TypeScript
  - Alternative ideas are welcome
  - Hard to fit the long-grown UI5 APIs into TypeScript definitions

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Thank you!

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