

Building skott: a journey of Effect-Driven Development

Antoine Coulon @ Effect Days #1

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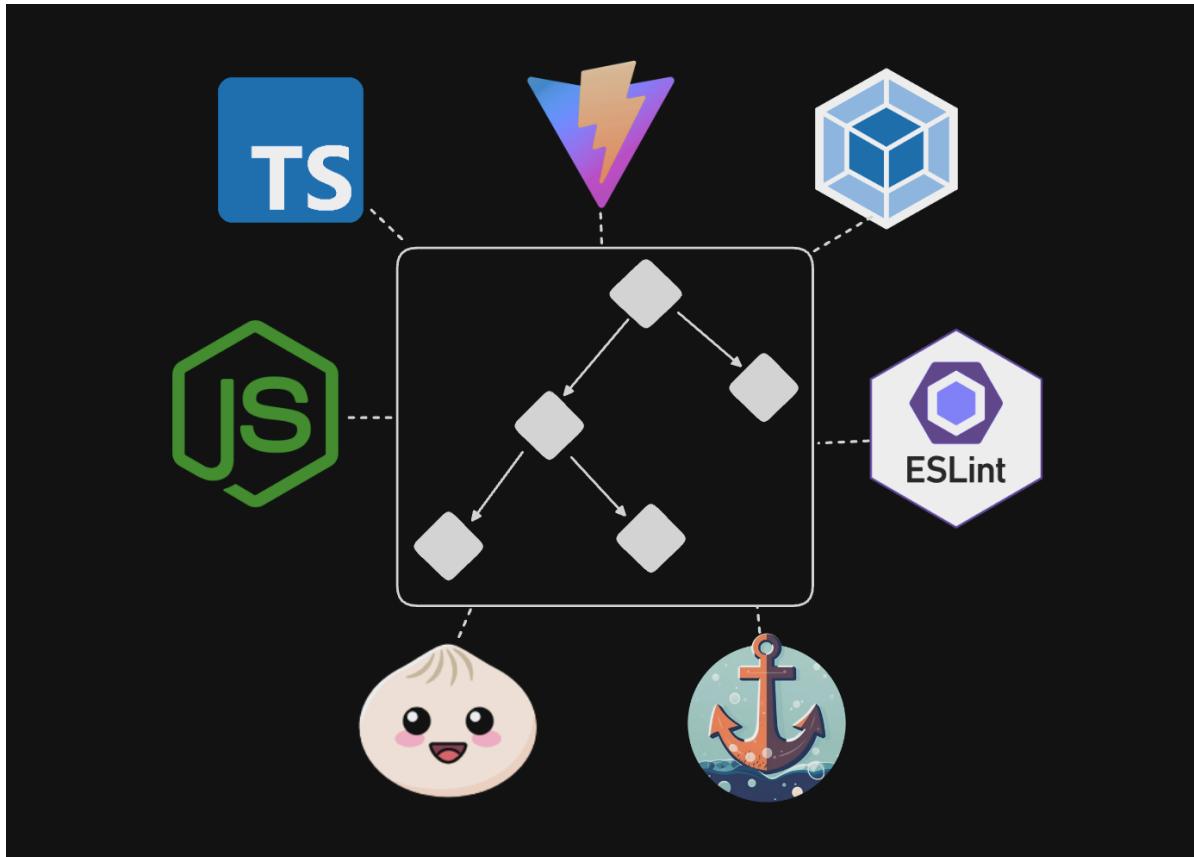


[c9antoine](#)



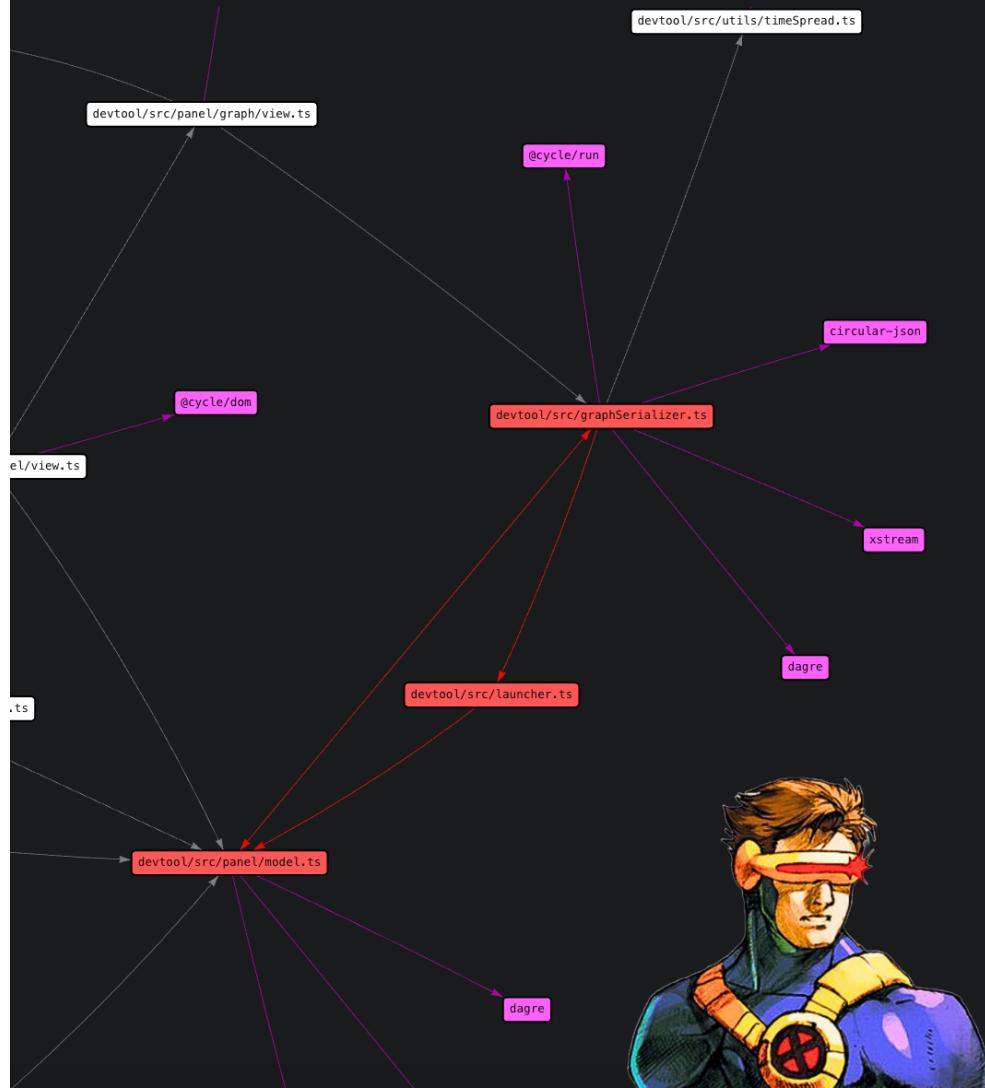
[dev.to/antoinecoulon](#)

The problem: graphs are everywhere, but hidden



skott is there to reveal graphs

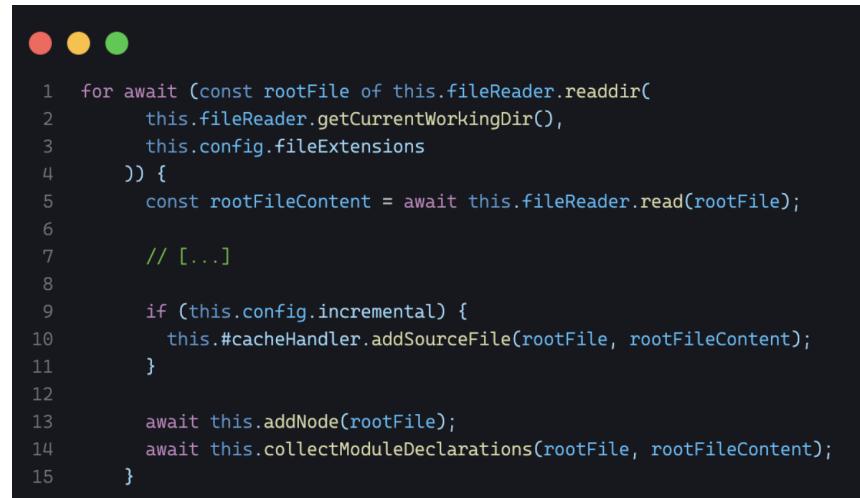
- Supports **JavaScript + TypeScript** projects
- Can be used via **CLI** or **JavaScript API**
- Written with **TypeScript**, running on **Node.js**
- Focused on providing great **developer experience**
- Lot of **display modes** out of the box to visualize graphs



skott needs what all softwares needs

skott's domain: mostly I/O

reading the file tree, module resolution, interactions with local cache



```
1 for await (const rootFile of this.FileReader.readdir(
2     this.FileReader.getCurrentWorkingDir(),
3     this.config.fileExtensions
4 )) {
5     const rootFileContent = await this.FileReader.read(rootFile);
6
7     // [...]
8
9     if (this.config.incremental) {
10         this.#cacheHandler.addSourceFile(rootFile, rootFileContent);
11     }
12
13     await this.addNode(rootFile);
14     await this.collectModuleDeclarations(rootFile, rootFileContent);
15 }
```

Also common things

logging, control flows, error recovery, dependency injection, concurrency...



```
1 export function resolveImportedModulePath(
2     module: string
3 ): EffectEffect<string, ModuleNotFoundError, FileReader | Logger> {
4     return Logger.pipe(
5         Effect.tap(Logger) =>
6             Effect.sync(() =>
7                 logger.info(`Start resolution for ${highlight(module)})`)
8             )
9         ),
10    Effect.zip(isExistingModule(module)),
11    Effect.flatMap(([logger, moduleExists]) => {
12        if (isFileSupportedByDefault(module) && moduleExists) {
13            return pipe(
14                Effect.sync(() =>
15                    logger.success(`Successfully resolved ${highlight(module)})`)
16                ),
17                Effect.map(() => module)
18            );
19        }
20    })
21 }
```

Developing reliable software is hard

When it comes to developing software, we can put in practice various disciplines

Test-Driven Development (TDD)



Type-Driven Development (TDD as well)



Introducing Effect-Driven Development

A streamlined and unified way of developing software

Effect enables both **Test** and **Type-Driven Development**

- **Dependency Inversion Principle** at heart
- Extreme **type-safety**
- Fast **feedback loop** overall



The trap: Third-Party-Driven Development

-  Composition between all dependencies is hard
-  Maintenance cost
-  Learning curve
-  Compatibilities issues
-  Higher risk of vulnerabilities

Select your difficulty level: Either<HardMode, EasyMode>

Option[HardMode]: `npm install *universe*`

⚠️ A fragmented ecosystem complexifying composable and maintainability

```
{  
  "dependencies": {  
    "fp-ts": "*",  
    "async": "*",  
    "p-queue": "*",  
    "p-retry": "*",  
    "inversify": "*",  
    "ts-pattern": "*",  
    "ts-results": "*",  
    "neverthrow": "*",  
    "ramda": "*",  
    "winston": "*"  
  }  
}
```

Option[EasyMode]: `npm install effect`

👉 A streamlined way of developing software with unified standard library and ecosystem

```
1  {  
2    "dependencies": {  
3      "effect": "latest"  
4    }  
}
```

Spoiler: I chose life on easy mode for skott

```
import { Effect, Either } from "effect";

declare const lifeChoice: Either.Either<HardMode, EasyMode>;
const easyModeOnly = lifeChoice.pipe(Effect.orDie, Effect.runSync);
```

The screenshot shows a GitHub pull request page for the repository `antoine-coulon / skott`. The pull request is titled `refactor: migrate to latest effect #136`. It has 15 issues and 1 pull request. The user `antoine-coulon` wants to merge 1 commit from the branch `migrate-to-latest-effect` into the `main` branch. The pull request has 0 conversations, 1 commit, 0 checks, and 2 files changed. A comment from `antoine-coulon` was made recently.

Code Issues 15 Pull requests 1 Actions Projects Wiki Security |

refactor: migrate to latest effect #136

Open antoine-coulon wants to merge 1 commit into main from migrate-to-latest-effect ↗

Conversation 0 Commits 1 Checks 0 Files changed 2

antoine-coulon commented now

Thanks for listening

- skott: <https://github.com/antoine-coulon/skott>
- Effect introduction: <https://github.com/antoine-coulon/effect-introduction>

