Courage-Oriented Programming

How I Learned to Stop Worrying and Love the Static Typing

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/whoami

and the current project "Currents"

- Background: Java, Ruby, JS, TS

- Influenced by: Scala, Haskell, Lisp, Rust

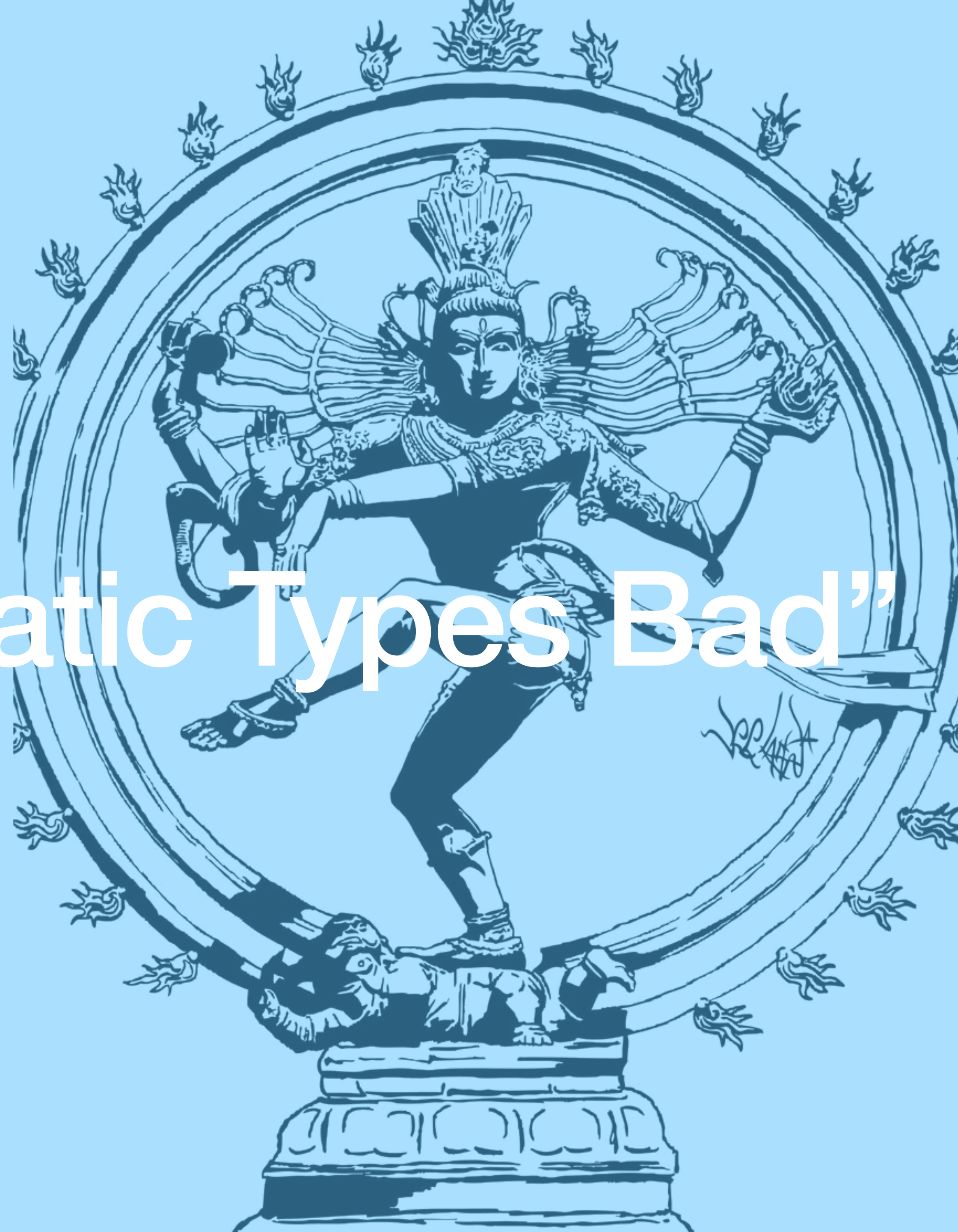- Project: a money distribution system

about:talk

Goals

Intuition in static types and how we can benefit from those. A showcase of the approach.

Not about: declarative vs. imperative
Not about: functional vs. object-oriented
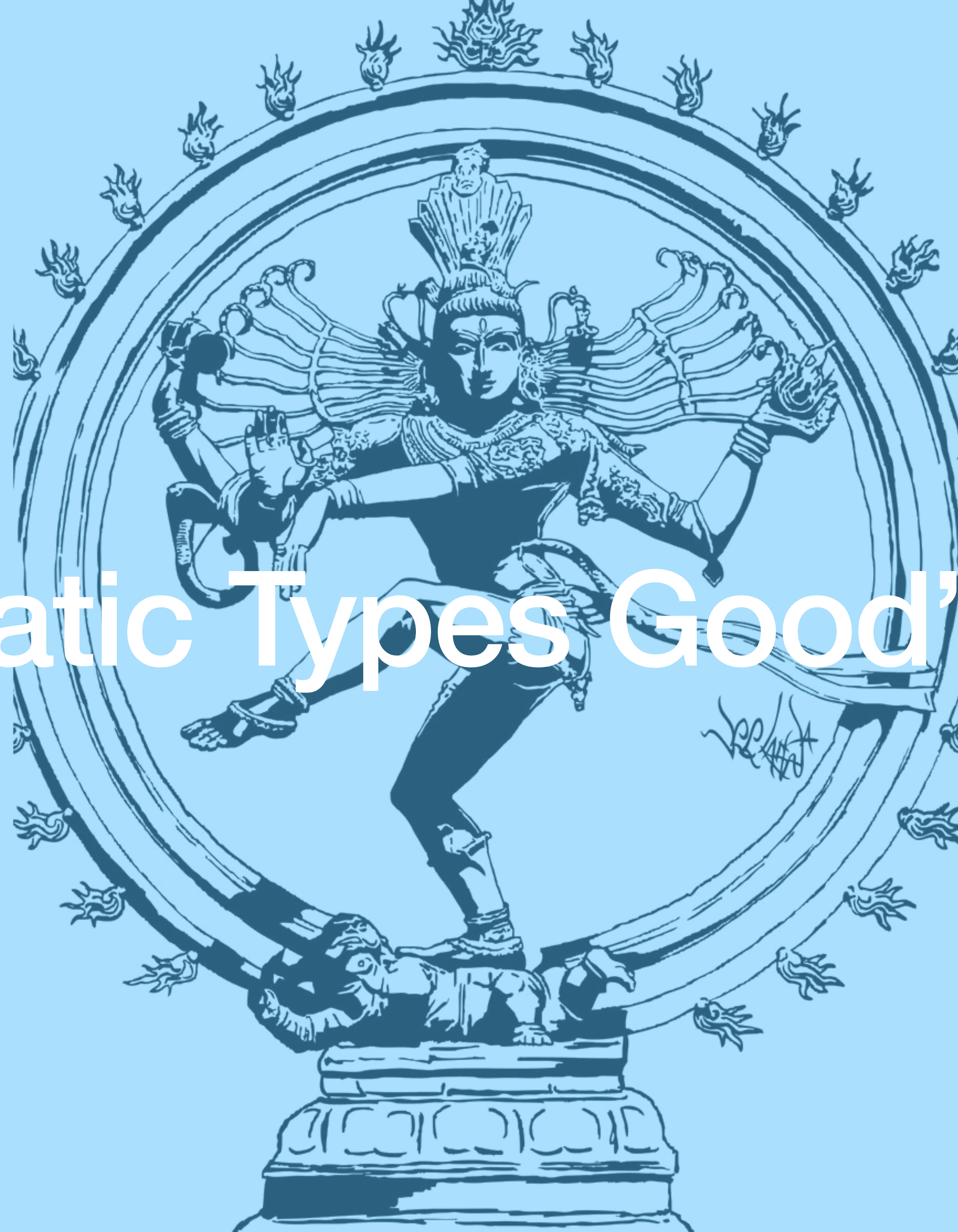Not about: static vs. dynamic

"Why Static Types Bad"

Why Static Typing is Bad
Disadvantages

- Harder to start coding

- And to change existing code

- Harder to hire

- Bloated type-level code

- Your variant here

"Why Static Types Good"

Why Static Typing is Good

Advantages

- Tests you don't have to maintain*

- Docs you don't have to keep in sync

- Brave and worry-free refactoring

- Understand existing codebases

- Code You Change Often

- Gradual Typing

Javascript and Typescript

The compiler should make you suffer*

- Javascript culture perpetuates low-effort solutions

- Business Value made by cutting corners is a lie

- A lie is always sweet until it's not

- Strict typing is there to render lies impossible

- "It's easy to start a project. It's not easy to finish it"

- Dynamic type systems are for very smart people
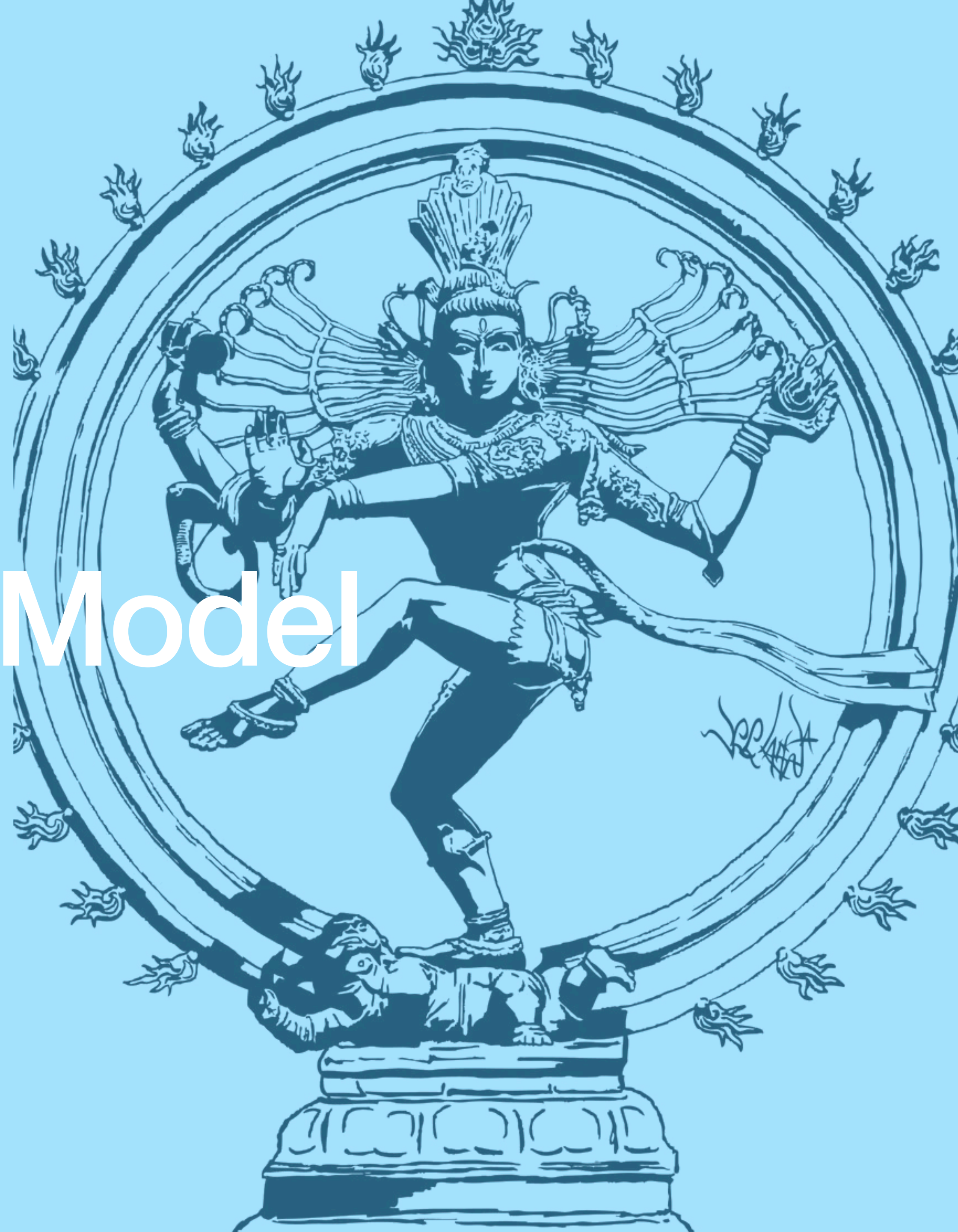
Tipping Point
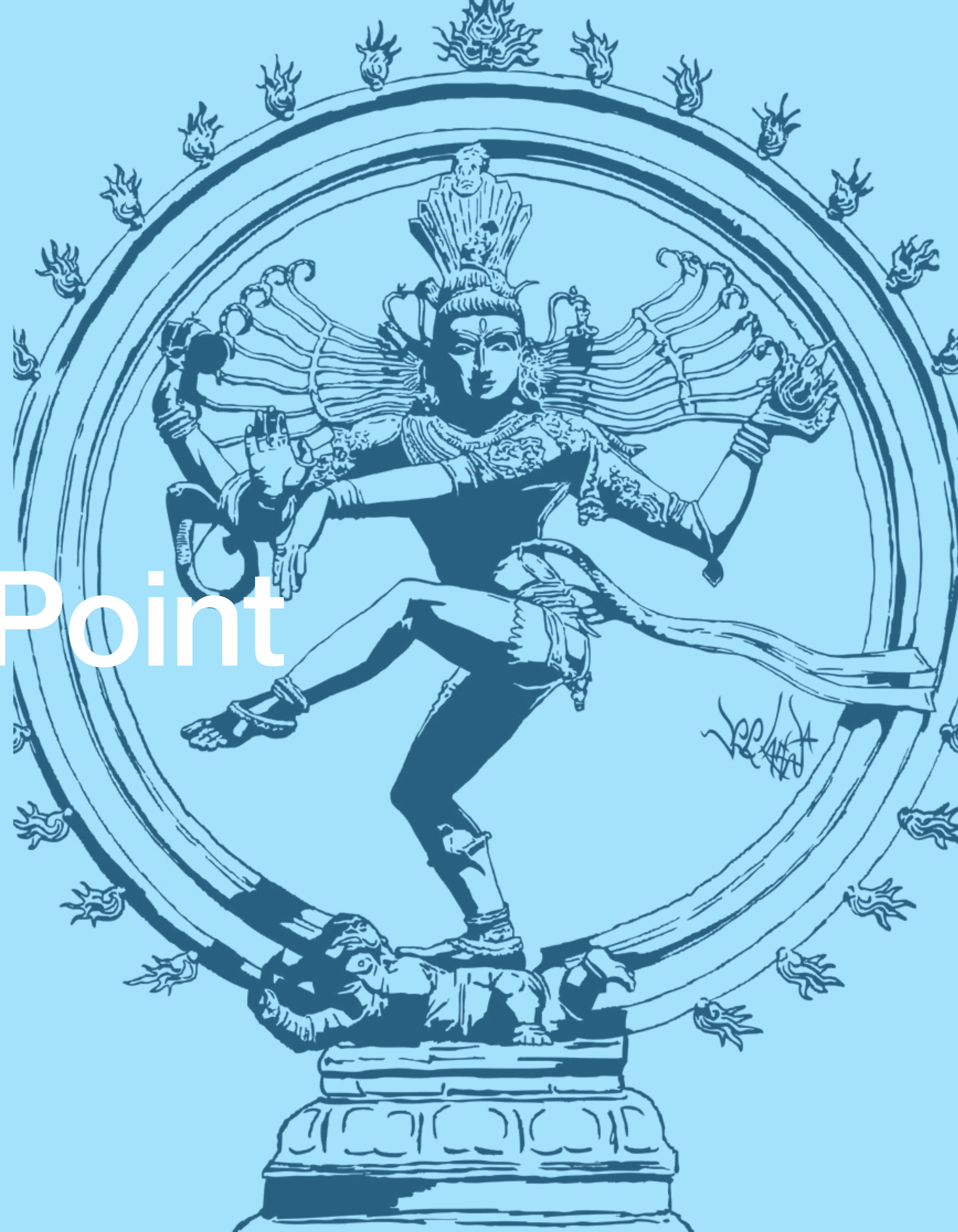
Tipping Point
"If it compiles, it works"

- Write code without running it for days

- Discover issues without running

- You don't need to debug it if it works

- You're welcome to have short attention span

Domain Model

Domain Model
And worry-free changes, again

- Code is documentation

- Interlinked

- UUID ID UID userId userMetaId customerId accountId
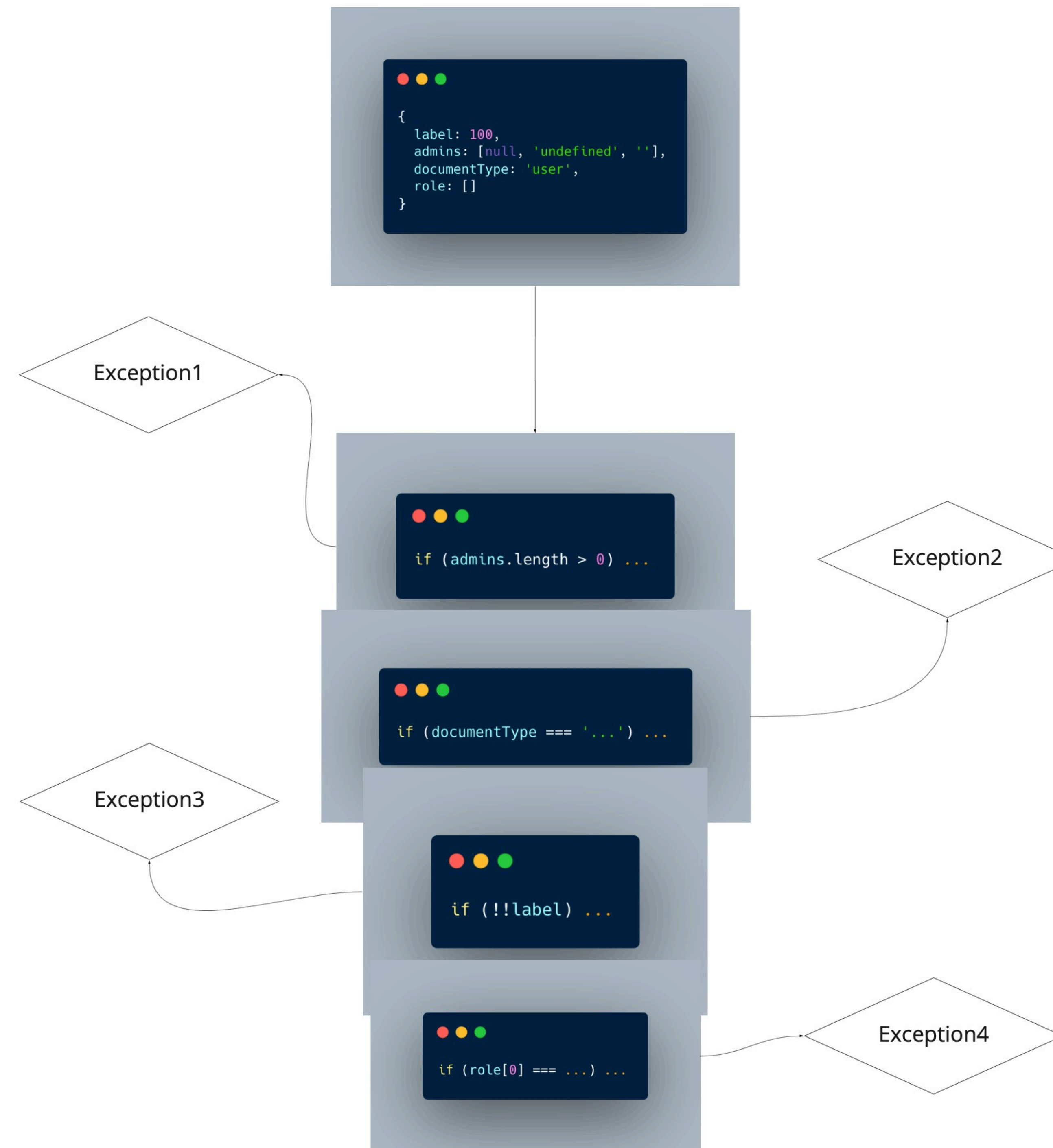
- status status status

Dealing with the real world

Dealing with the real world

"Parse, don't validate"

- Never enough validations (and it makes us think)

- MaybeId, LooksLikeId, CertainlyId, CertainlyIdAtPoT

- Don't trust your frontend

- And maybe your backend too

```
{
  label: 100,
  admins: [null, 'undefined', ''],
  documentType: 'user',
  role: []
}
```

Exception1

```
if (admins.length > 0) ...
```

Exception2

```
if (documentType === '...') ...
```

Exception3

```
if (!!label) ...
```

```
if (role[0] === ...) ...
```

Exception4

Don't worry

And go break your codebase