Ruby DX Past & Future

Stan Lo

About me

Taiwan 🇹🇼

London 🇬🇧

Since 2021. Love pubs 🍺 (300+)

Maintainer

IRB, Reline, RDoc, Ruby LSP, ruby-lsp-rspec…etc.

Ruby committer

Contributed to ZJIT & Ruby documentation

Ruby DX @Shopify

We do a lot of work related to Ruby DX

About me

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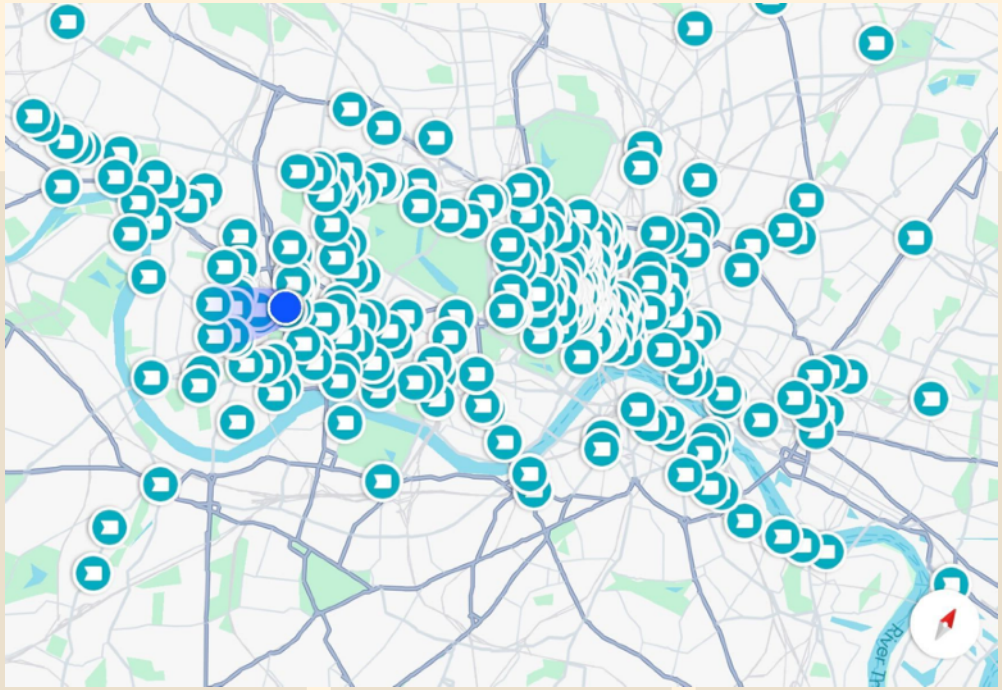

Ruby DX
@Shopify

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Acknowledgement

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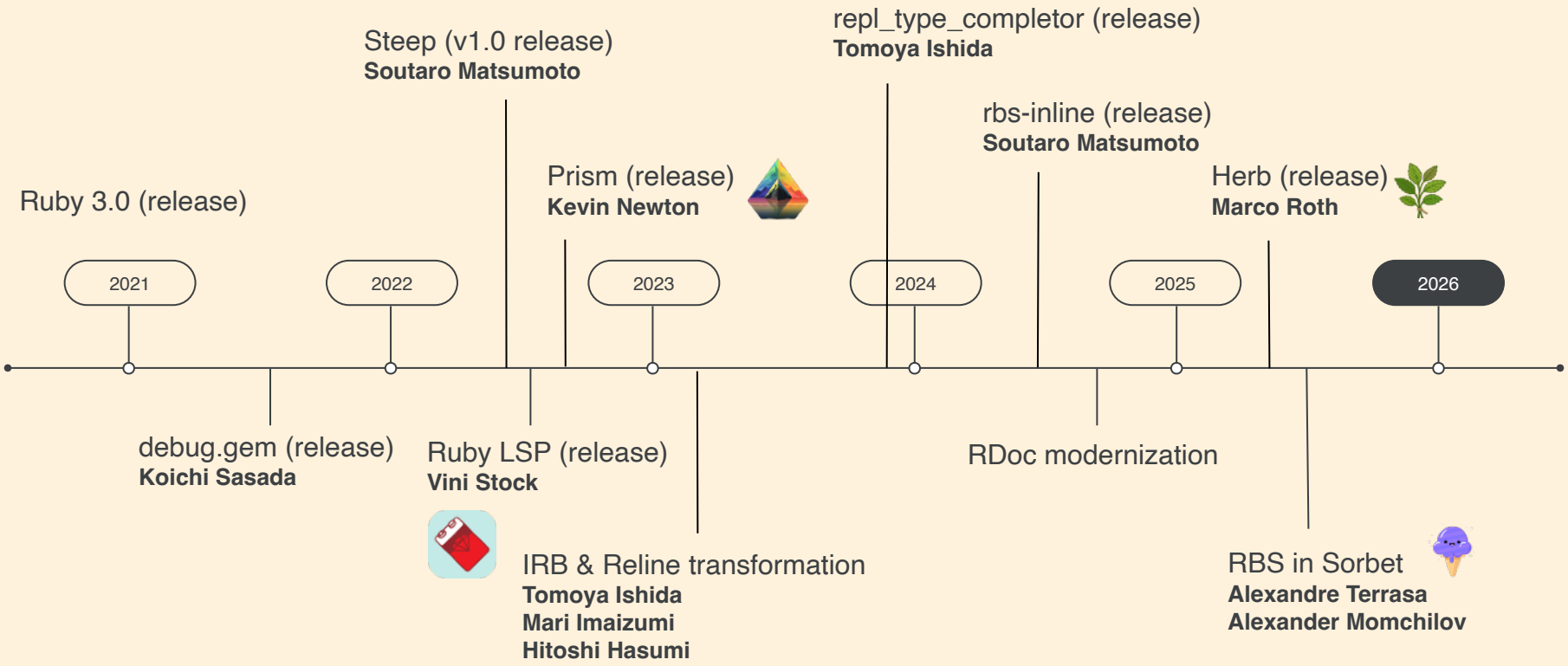
(Development)

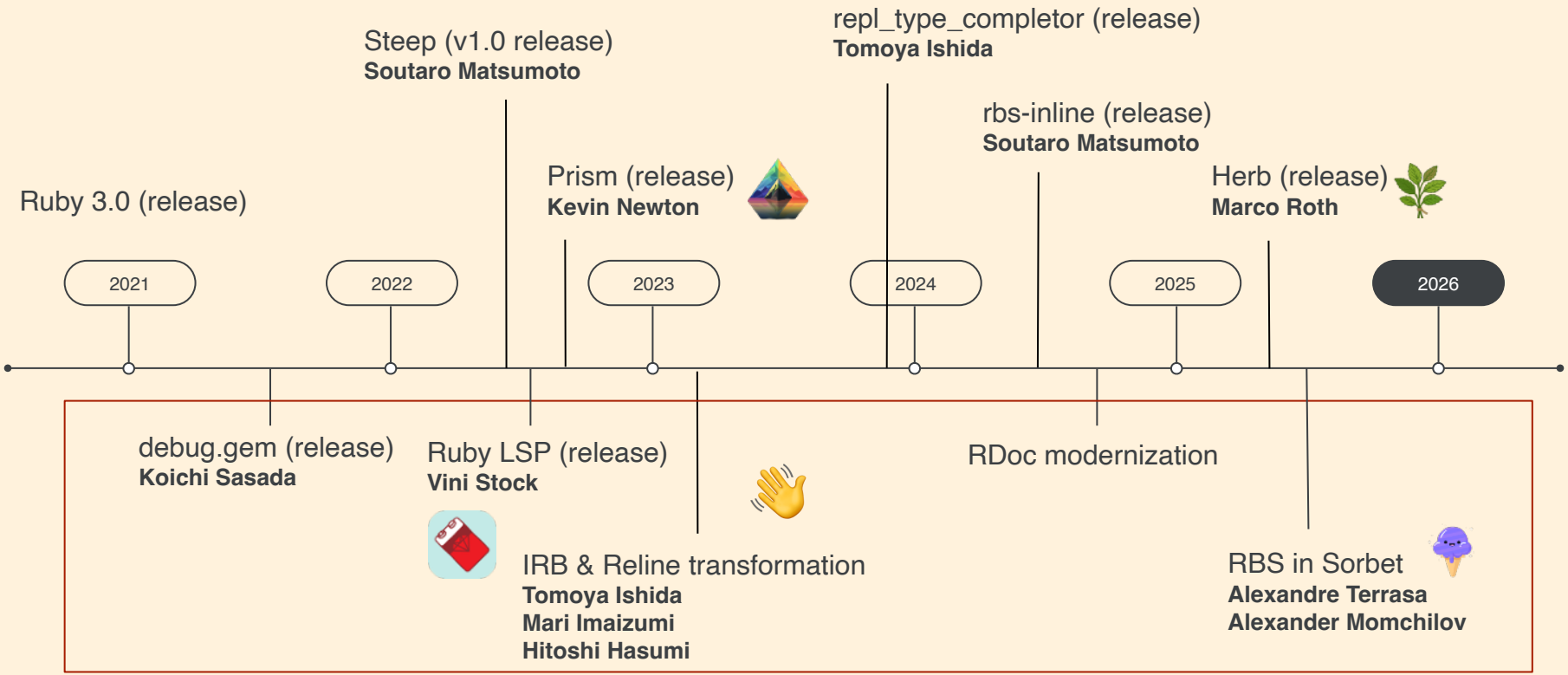
Developer Experience

What Have We Achieved

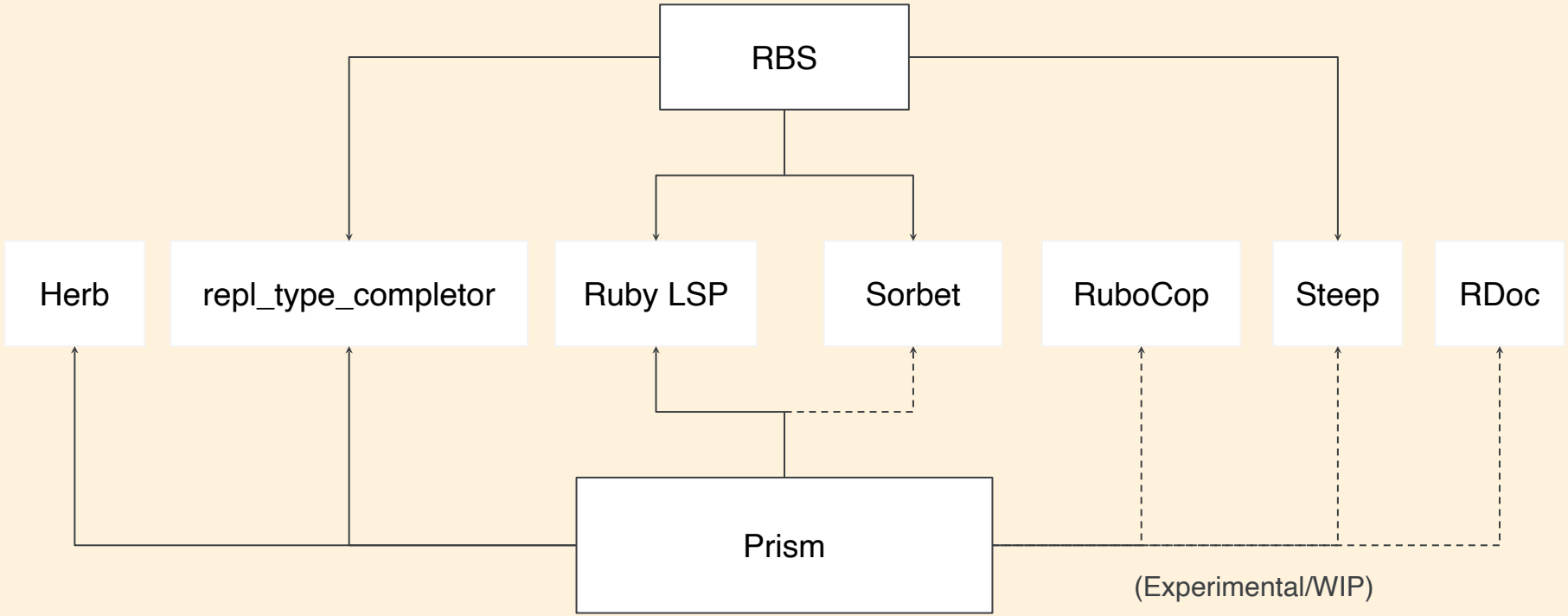
Major Ruby DX Events Since Ruby 3.0



Major Ruby DX Events Since Ruby 3.0



Importance of Shared Infrastructure



Since Ruby 3.0

- Healthy and diverse development in developer tools
- Prism was key to enable this development
- More tools are utilizing type information through RBS

What Should We Do Next?

AI Is Changing DX

AI Coding Tools

- Cursor
- GitHub Copilot
- OpenAI Codex
- Claude Code
- And more

How Can AI Understand Your Ruby Program Better?

- Type Information
- Code Intelligence

Type Information

Declaring Types =
Declaring Intent

Clear Intent =
More Context for Human
More Context for AI

Type Information

- Types help tools understand the data flow, which enhances features like autocompletion (e.g. repl_type_completor)
- Types can enable more accurate and flexible linting and code modification
- (Potentially) Types can reduce the time JIT compilers need for warmup
- Not for typechecker, but for tools

Writing Types In Ruby Becomes Easier

Inline RBS

```ruby
#: (Integer, Integer) -> String
def add_to_string(a, b)
  (a + b).to_s
end

add_to_string(1, 2)
```

AI Powered Editors

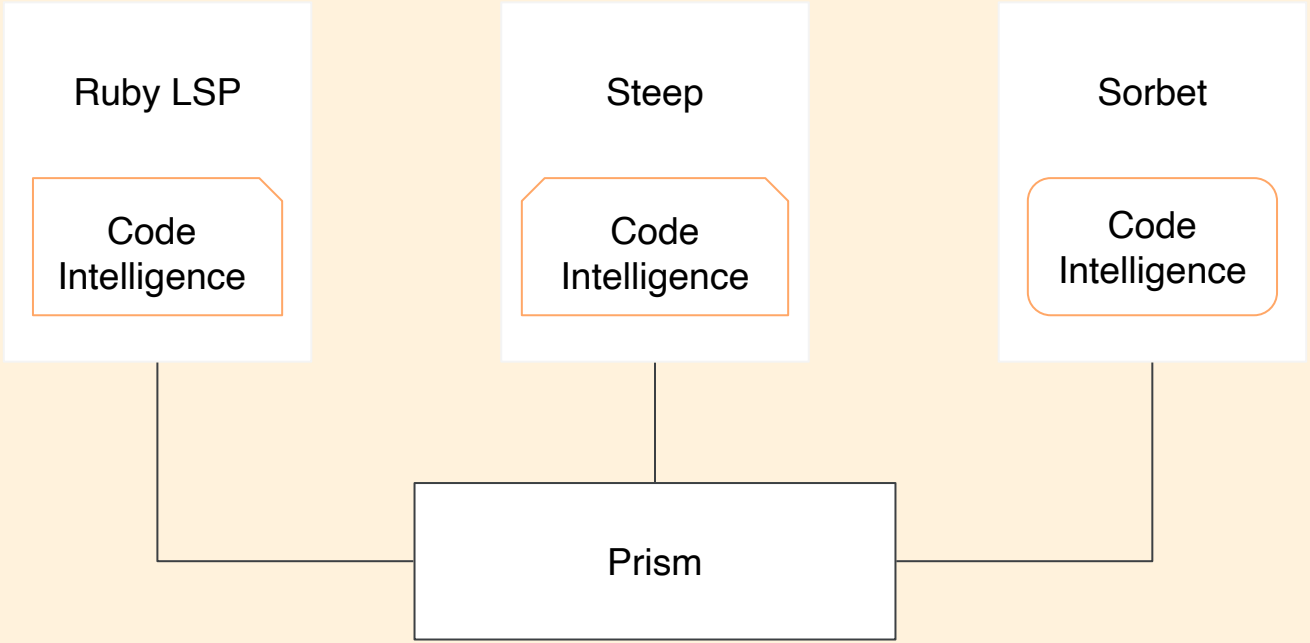
```ruby
#: (Integer, Integer) -> String
def add_to_string(a, b)
  (a + b).to_s
end

add_to_string(1, 2)
```

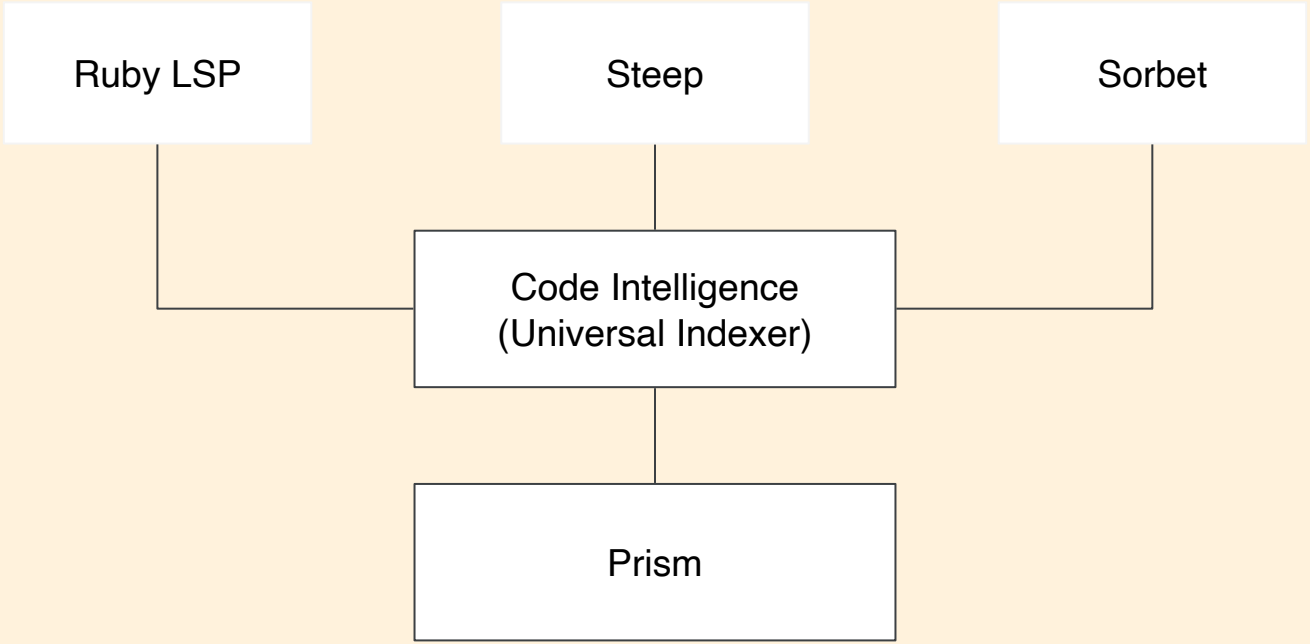
Code Intelligence

- Where is this class/module defined?
- What ancestors does this class/module have?
- Where is the source of this method?
- …and more

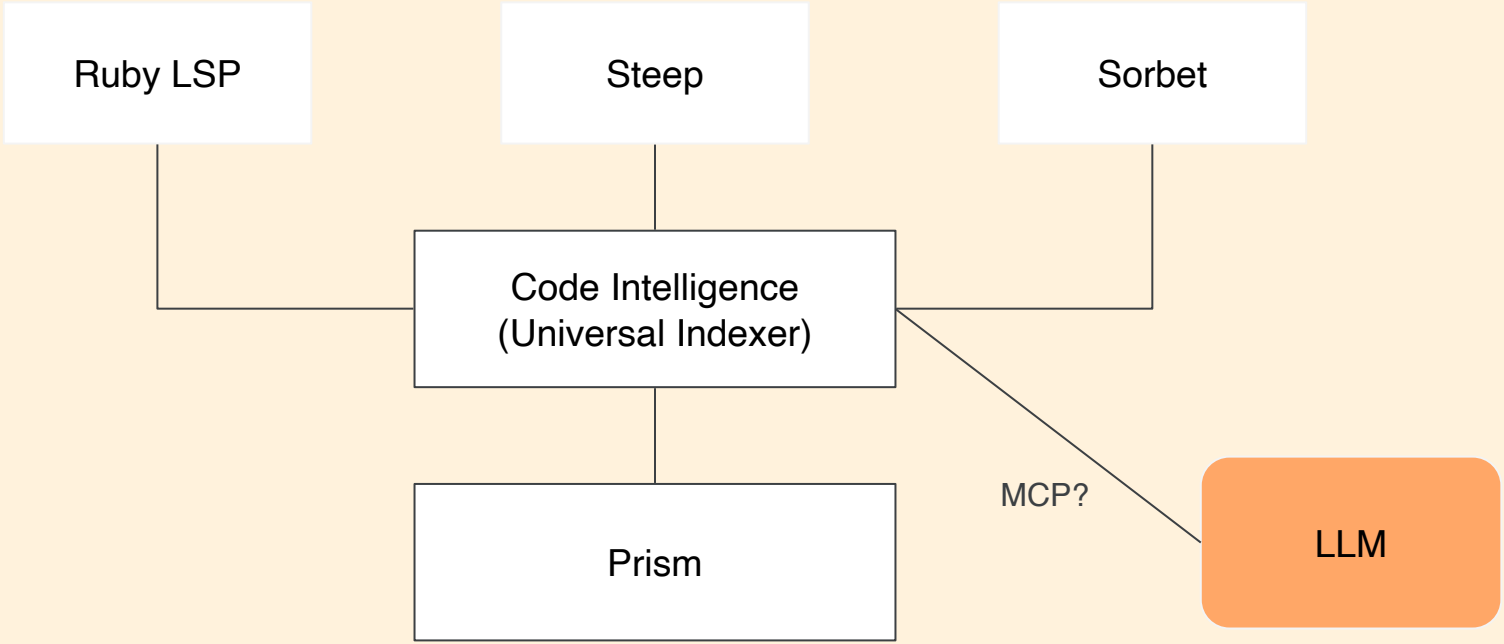
Universal Parser, Fragmented Code Intelligence



Universal Parser, Universal Indexer



Universal Parser, Universal Indexer



Static Code Intelligence

- Booting apps is fragile (dependencies, database migrations, environments…etc.)
- Booting apps is slow
- Evaluating code can trigger side-effects (e.g. making and keeping connections to the database)

A Universal Indexer Is Coming

1. Type Information
    - Provides crucial context for tools and AI
    - Easier to write with AI assistance
2. Universal Indexer
    - Shared foundation reduces duplication
    - Makes Ruby expertise accessible to tools and AI
3. The Result
    - Better AI assistance for Ruby developers
    - More consistent tooling experience
    - Ruby developers can focus on solving problems

More and Better Tools for both Humans and AI

Thank you

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