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Professional NgRx

2 - Architecture

Agenda

1. Modules & dependencies
2. API
    a. Facade or repository
    b. Inter-module dependencies
3. StateModel vs. ViewModel

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Modules and dependencies

Requirements

- Encapsulation
  - Module-internal changes shouldn't affect the rest
  - Exposed features are clearly defined
- Dependency Rules
  - Module hierarchy
  - Reduce/localise the risk of changes
- Automated verification
  - Nx linting rules

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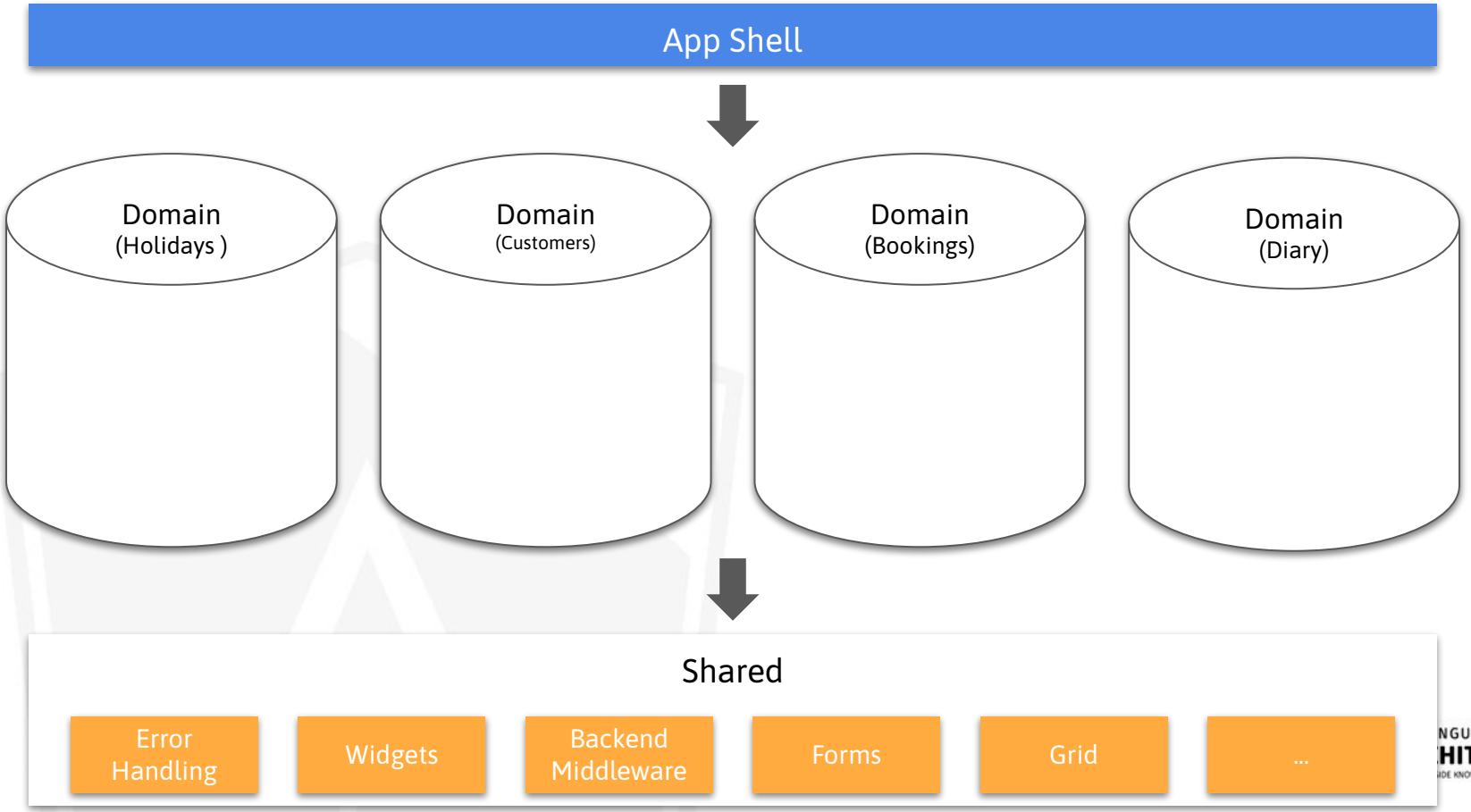
Tier 1 - Domain modules



Tier 1 - Domain modules

- Independent parts
- Maintainability
- Team Scalability
  - Feature teams
  - Library teams
- Architecture Scaling
- Better protection from bugs

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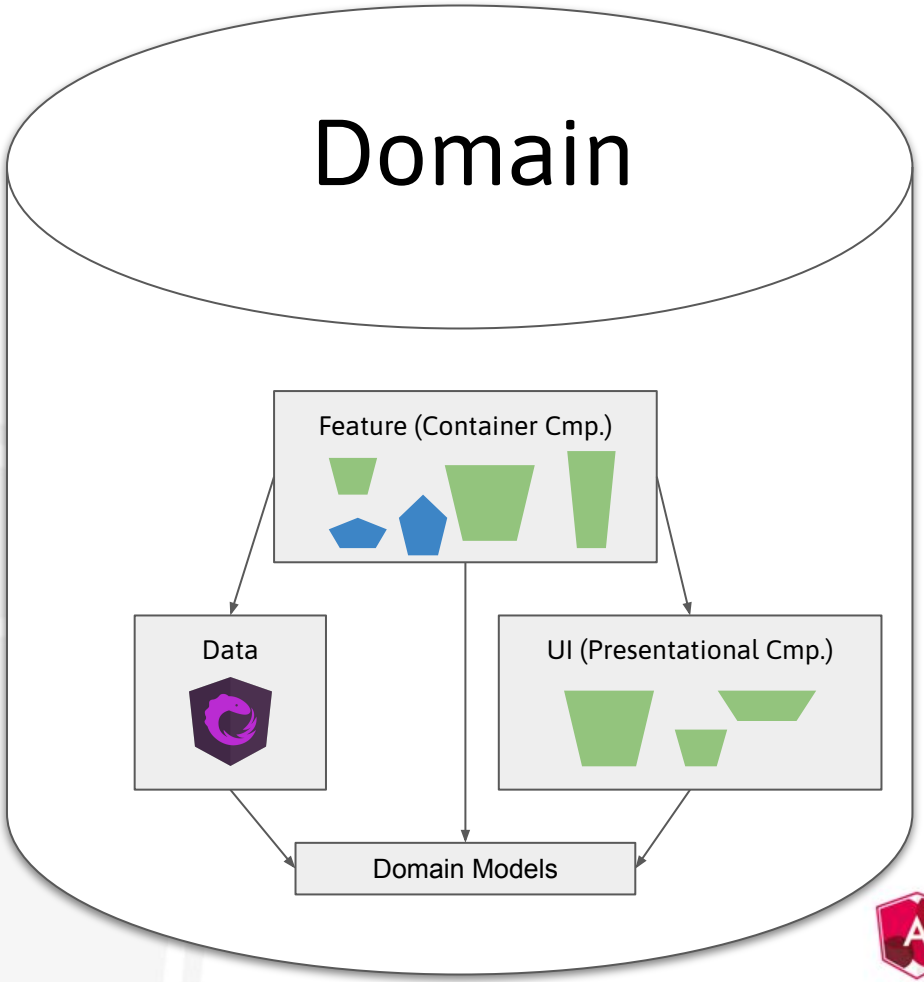
Tier 2
Sub Modules



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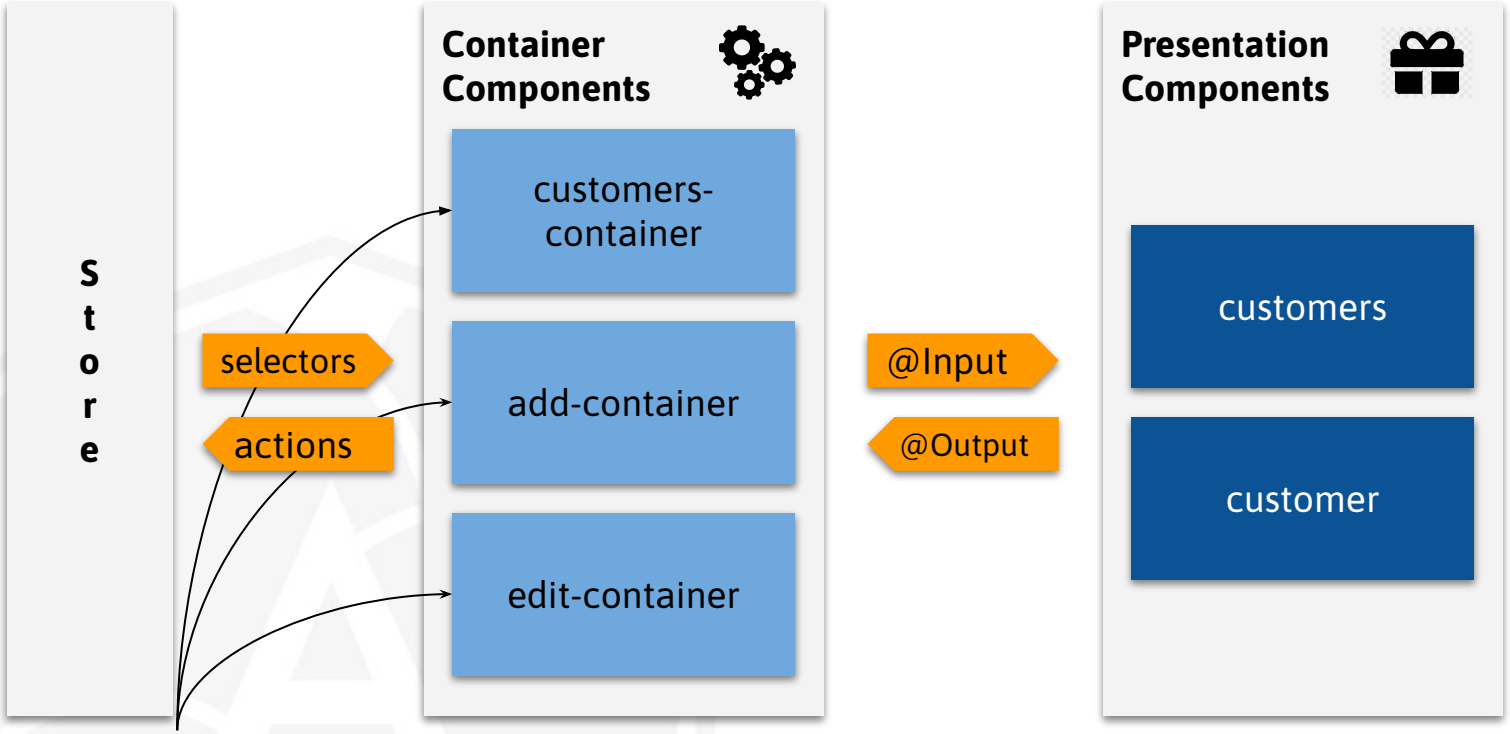
Container & Presentational Components



Routing Configuration
/customer
/customer/add
/customer/edit/{id}

- Least Possible Template
- Reading from Store
- Dispatching to Store

- Least Possible Typescript
- No Dependency Injection, only @Input and @Output
- No Observables!

Restricted NgRx access makes only sense with container/presentational components

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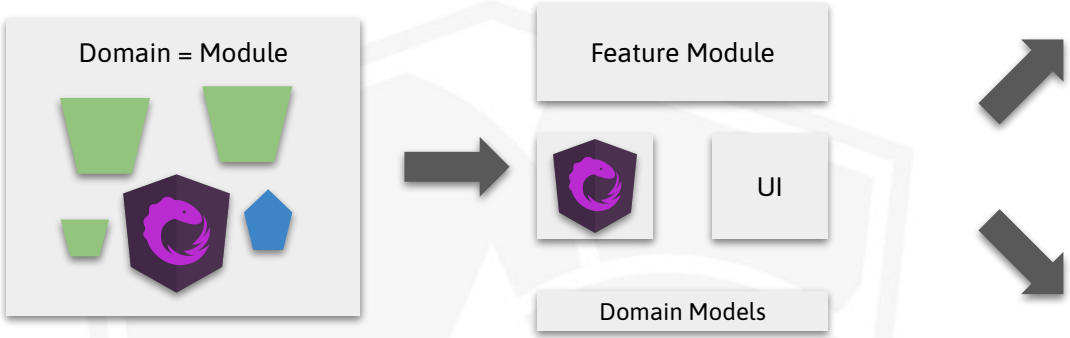
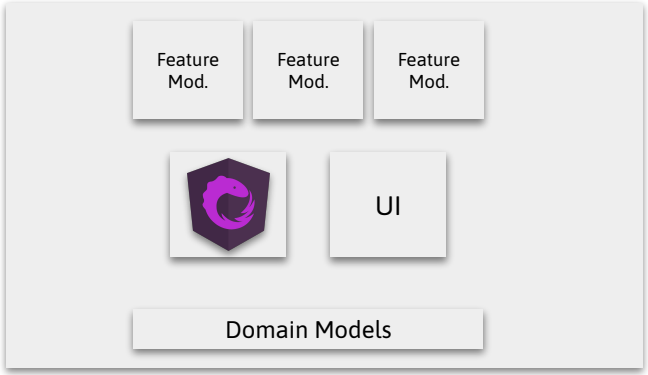
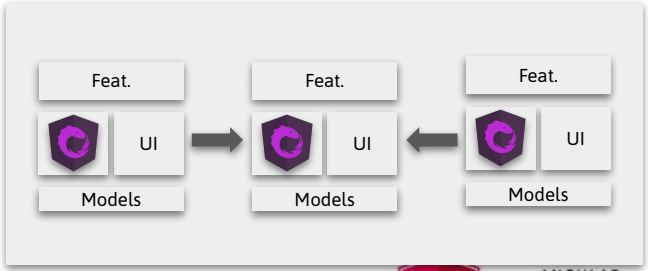
Tier 2 Evolution Process



Multiple feature operating on same state



Sub-Domains with core-domain



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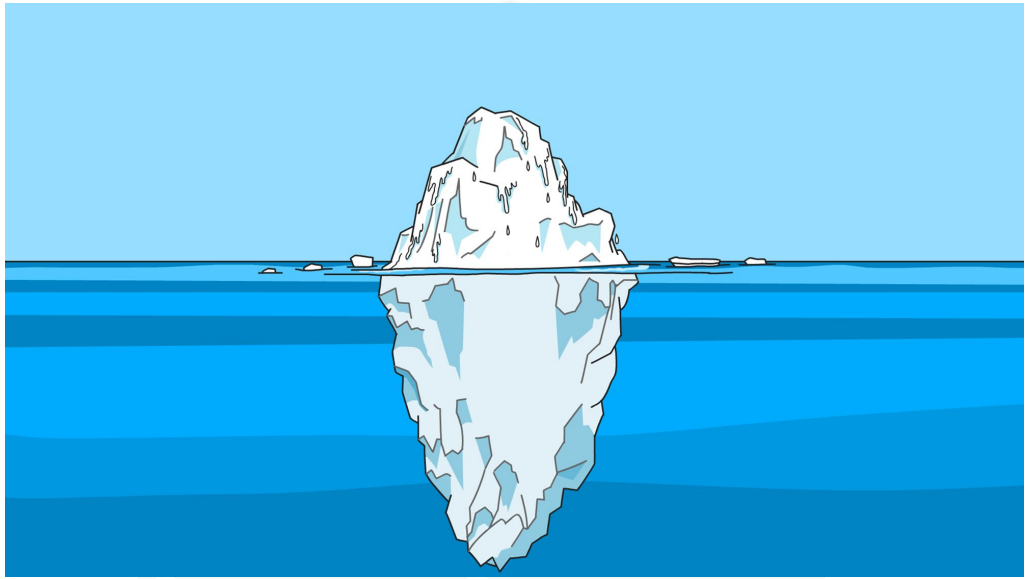
Lab Time

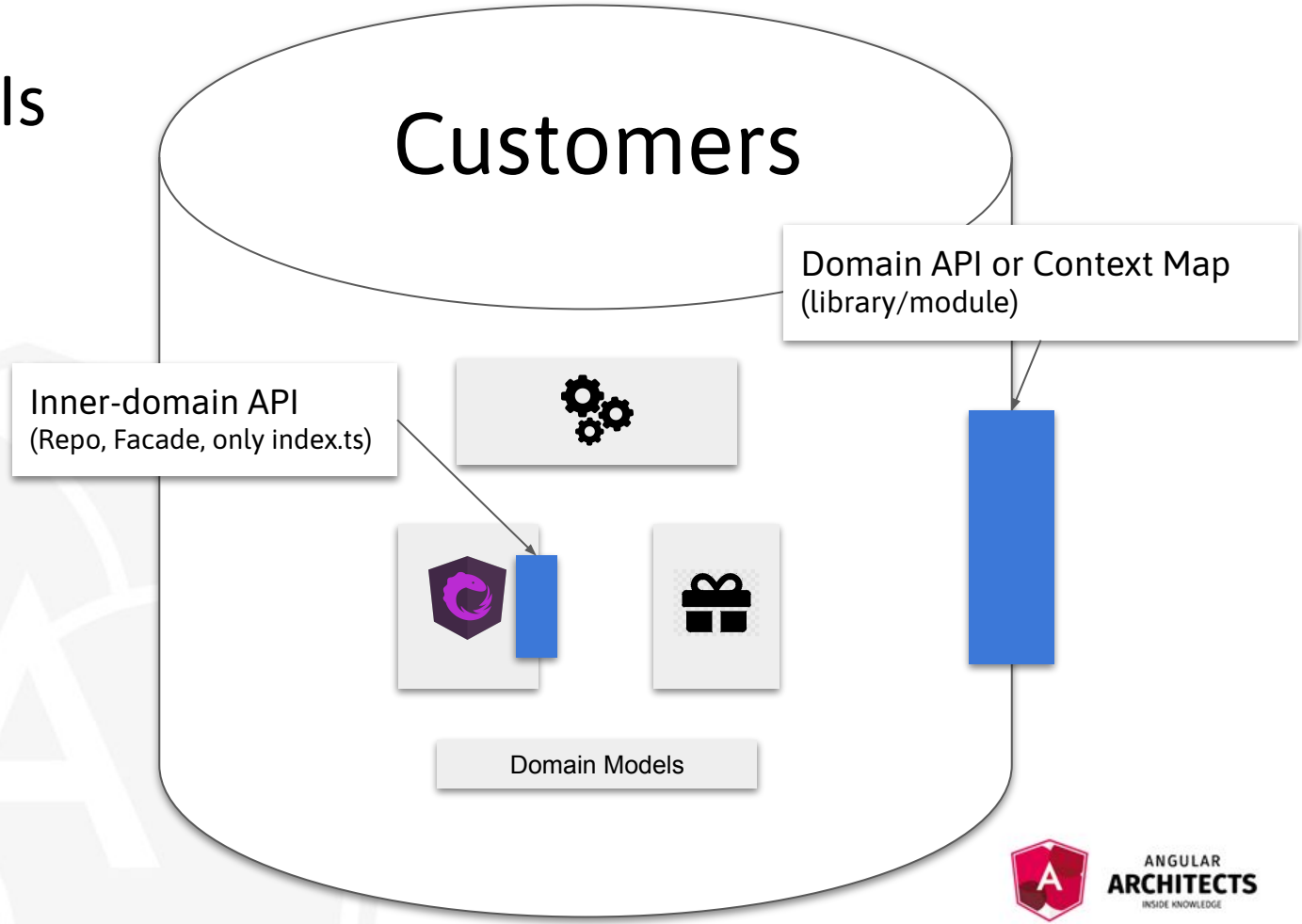
Dependency Types

- Module Type per Domain
  - Generic
  - Hierarchy after type
- API
  - Individual
  - Above feature module(s)
  - Mostly open to feature or data modules
- Shared
  - Individual
  - Access to generic module type

API



2 Types of APIs



Trade-Off

Architecture: Generic API

- Hide selectors
- Looser coupling because NgRx is completely hidden
- More overhead and work for feature modules
  - combineLatest
- Cannot combine selectors of multiple features

Performance: Combining selectors

- Selectors are more performant
- Tight coupling to NgRx
- Simpler

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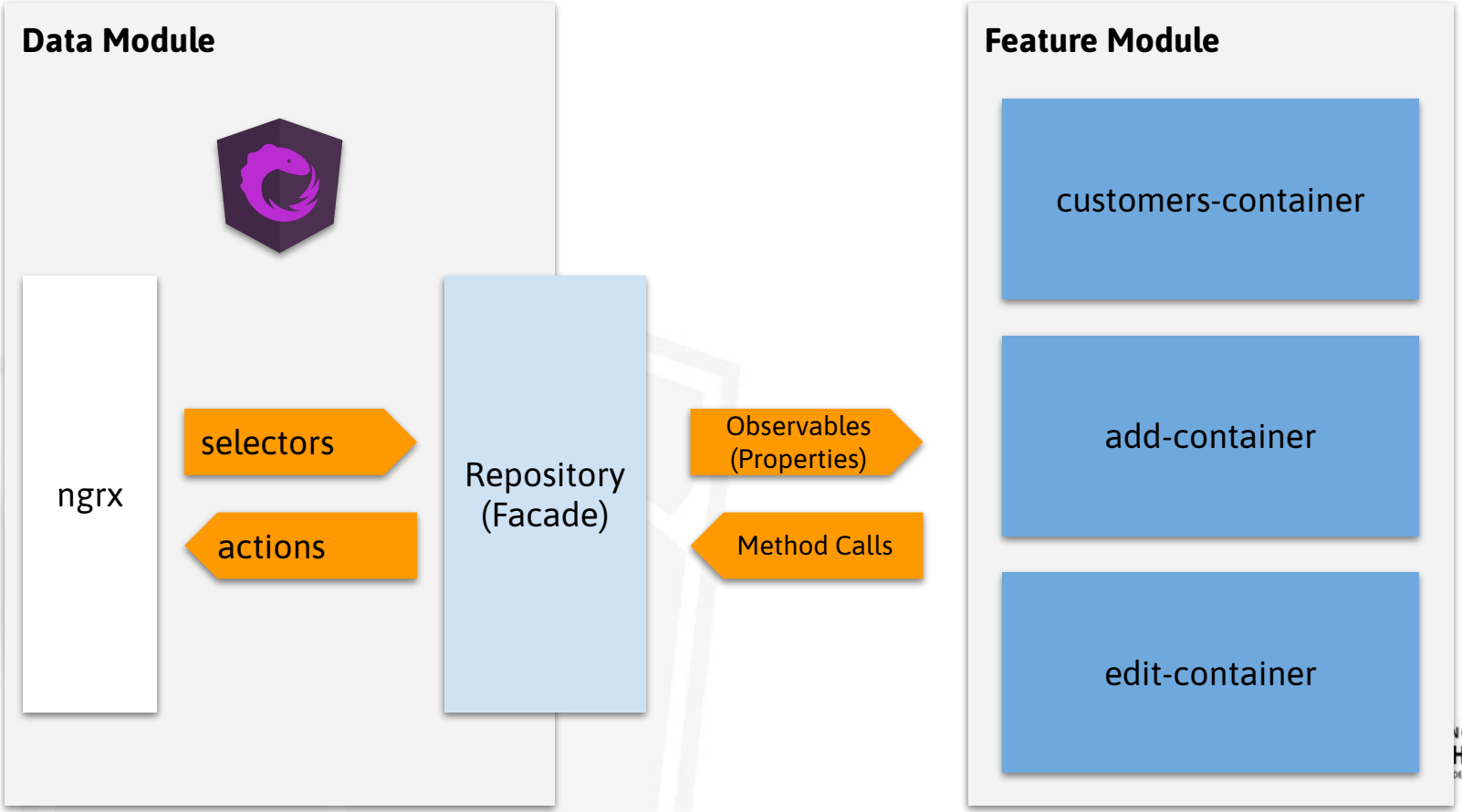
NgRx repository/facade



Repository/Facade/API

1. Single element,
2. exposing module's functionality,
3. in a "user-friendly" way

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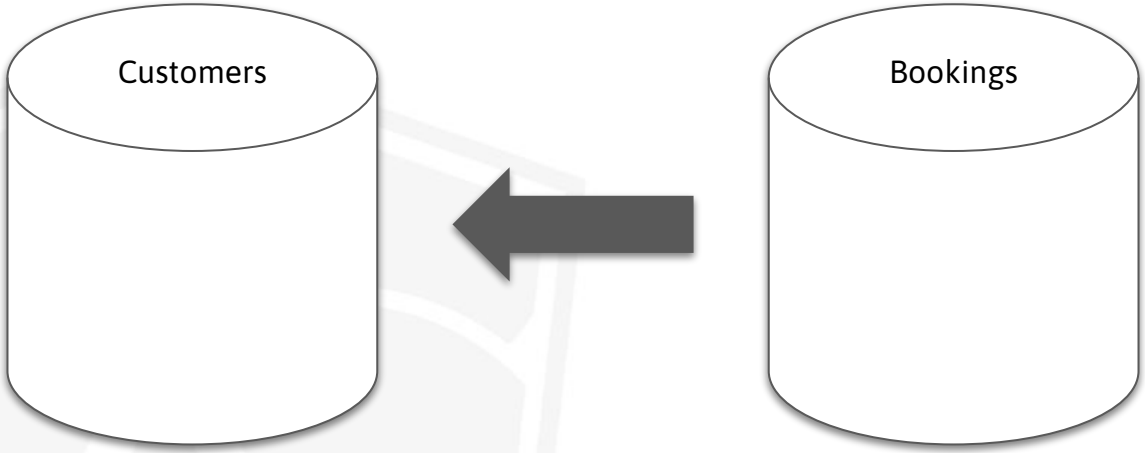
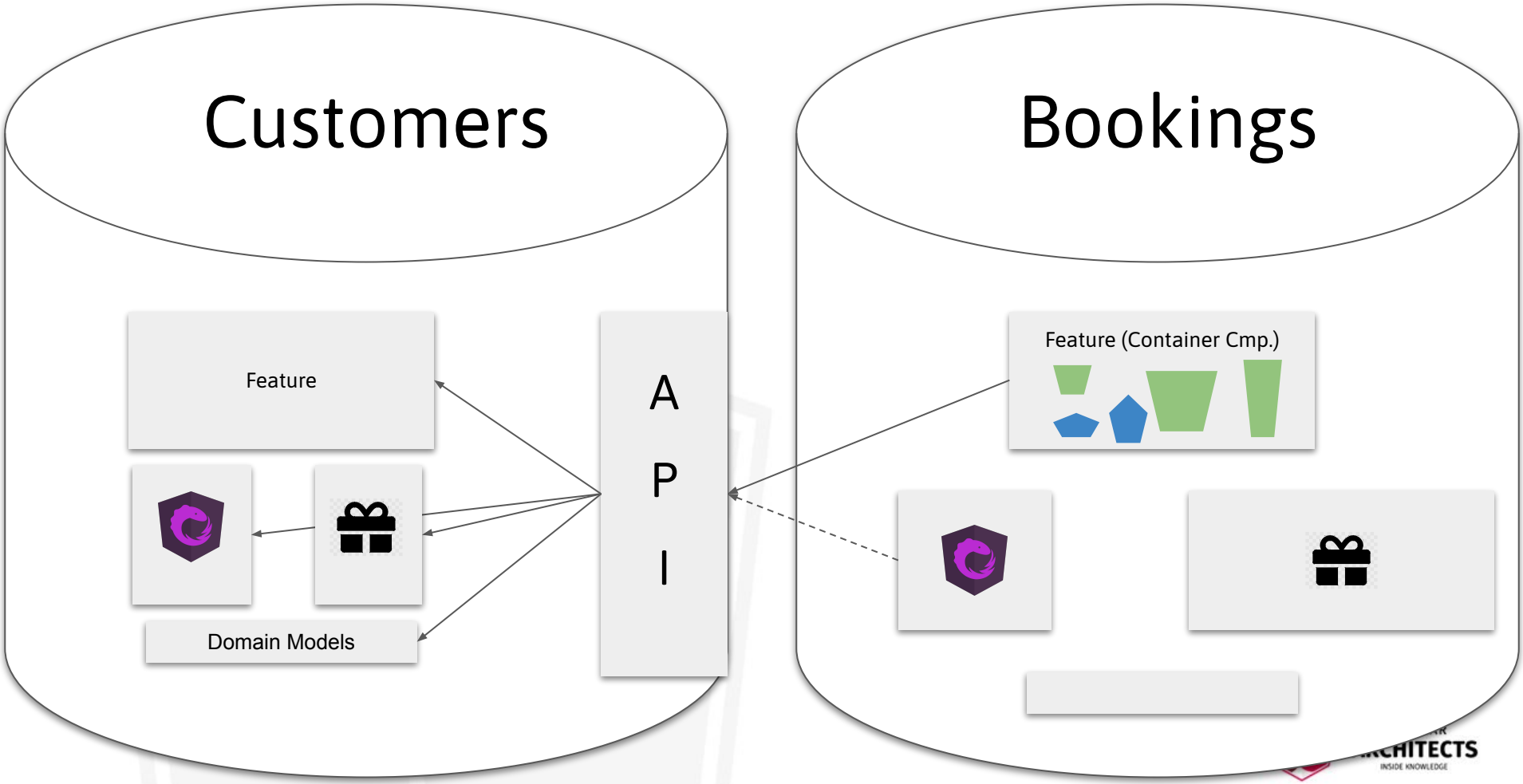
Module Type: API




Customers
Feature
Domain Models
A
P
I
Bookings
Feature (Container Cmp.)

API-related rules

```
{
  "sourceTag": "domain:customers:api",
  "onlyDependOnLibsWithTags": ["domain:customers"]
}
```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API-related rules

```
{
  "sourceTag": "domain:customers:api",
  "onlyDependOnLibsWithTags": ["domain:customers"]
}, {
  "sourceTag": "type:api",
  "onlyDependOnLibWithTags": ["type:feature", "type:data", "type:ui", "type:model"]
}
```

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API-related rules

```
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  "sourceTag": "domain:customers:api",
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}, {
  "sourceTag": "type:api",
  "onlyDependOnLibWithTags": ["type:feature", "type:data", "type:ui", "type:model"]
}, {
  "sourceTag": "domain:bookings",
  "onlyDependOnLibsWithTags": ["domain:bookings", "domain:customers:api", "domain:shared"]
}
```

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API-related rules

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}, {
  "sourceTag": "type:feature",
  "onlyDependOnLibWithTags": [
    "type:api"
    // ...
  ]
}
```

StateModel vs. ViewModel

Direct Consequence

- Applies to Entity-based states
- Hide NgRx and still use selectors from other features
- Dispatching actions from other feature states?
- How should NgRx know about UI?

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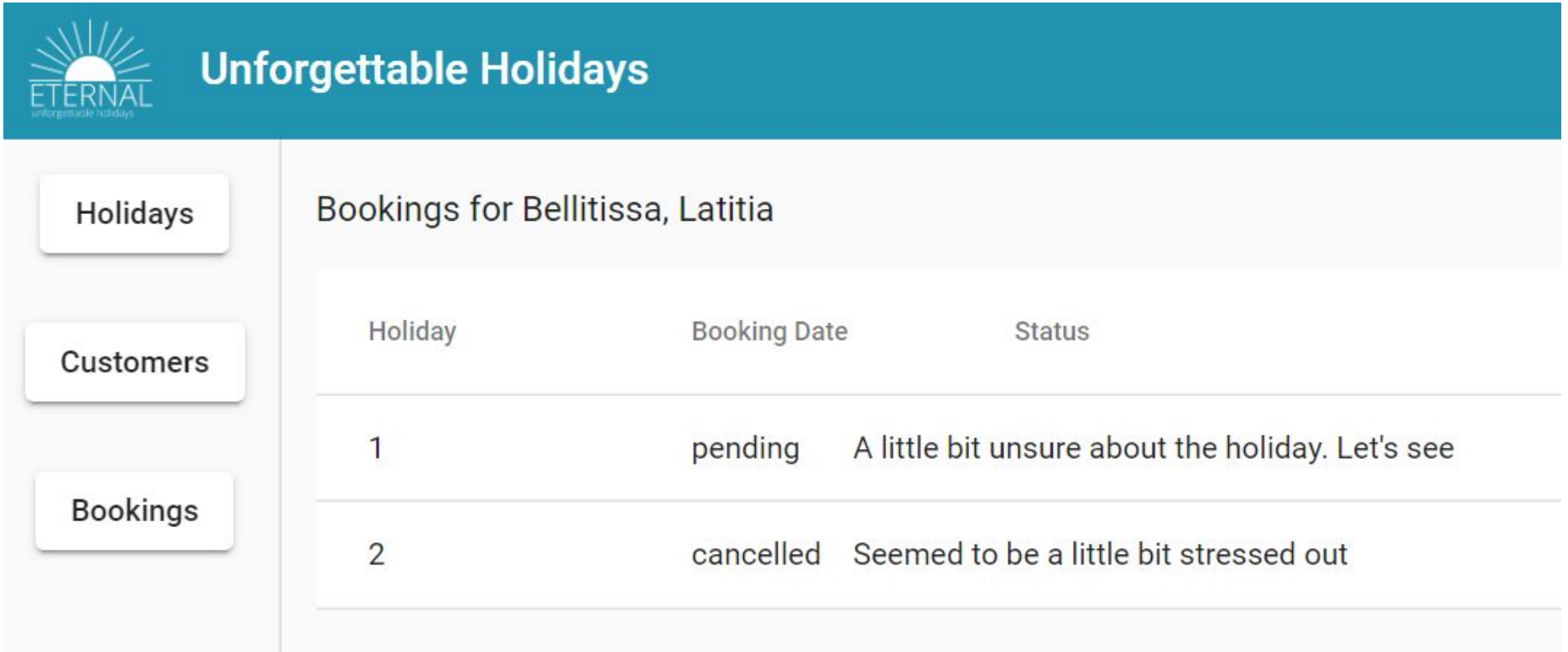
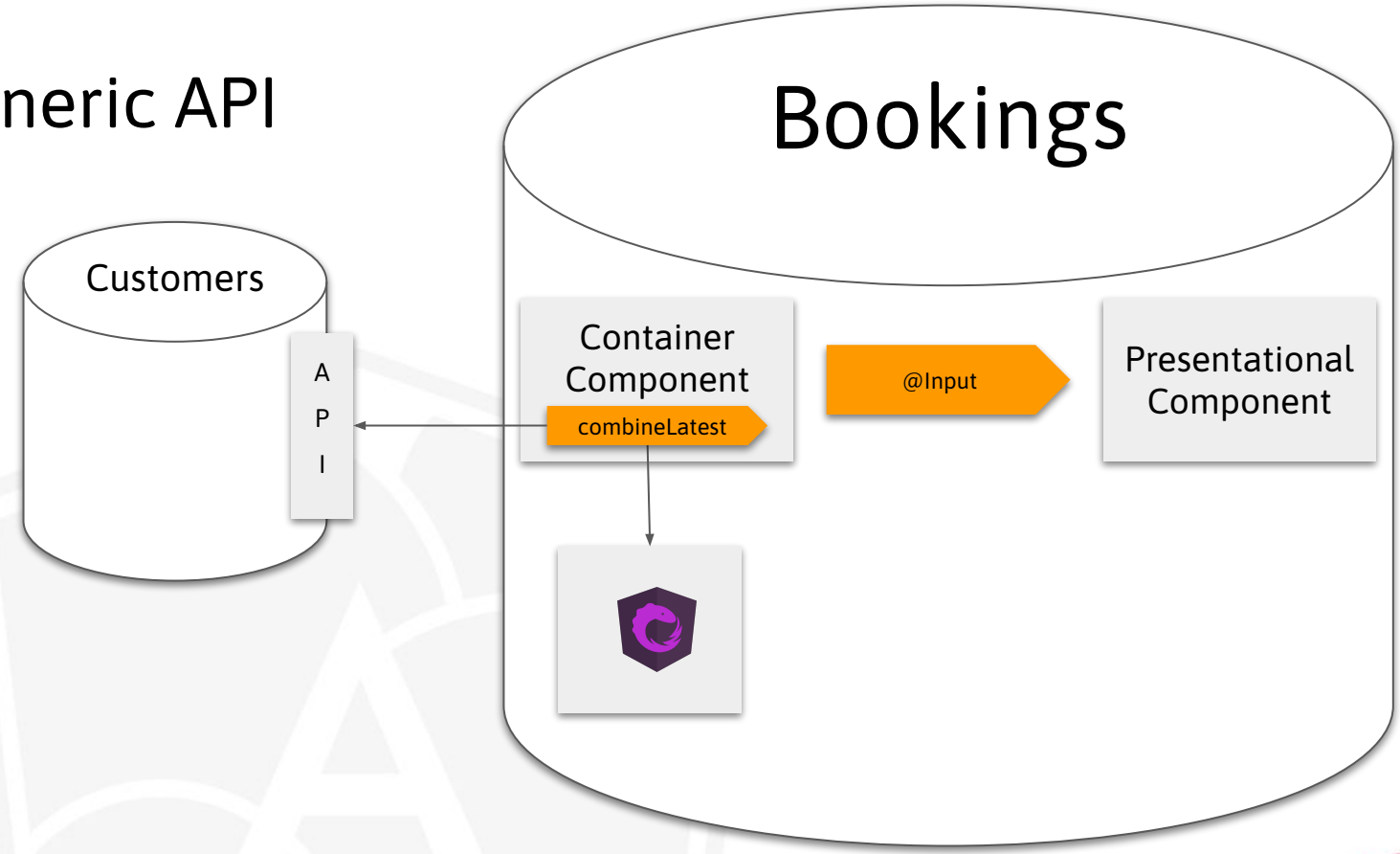


Generic API



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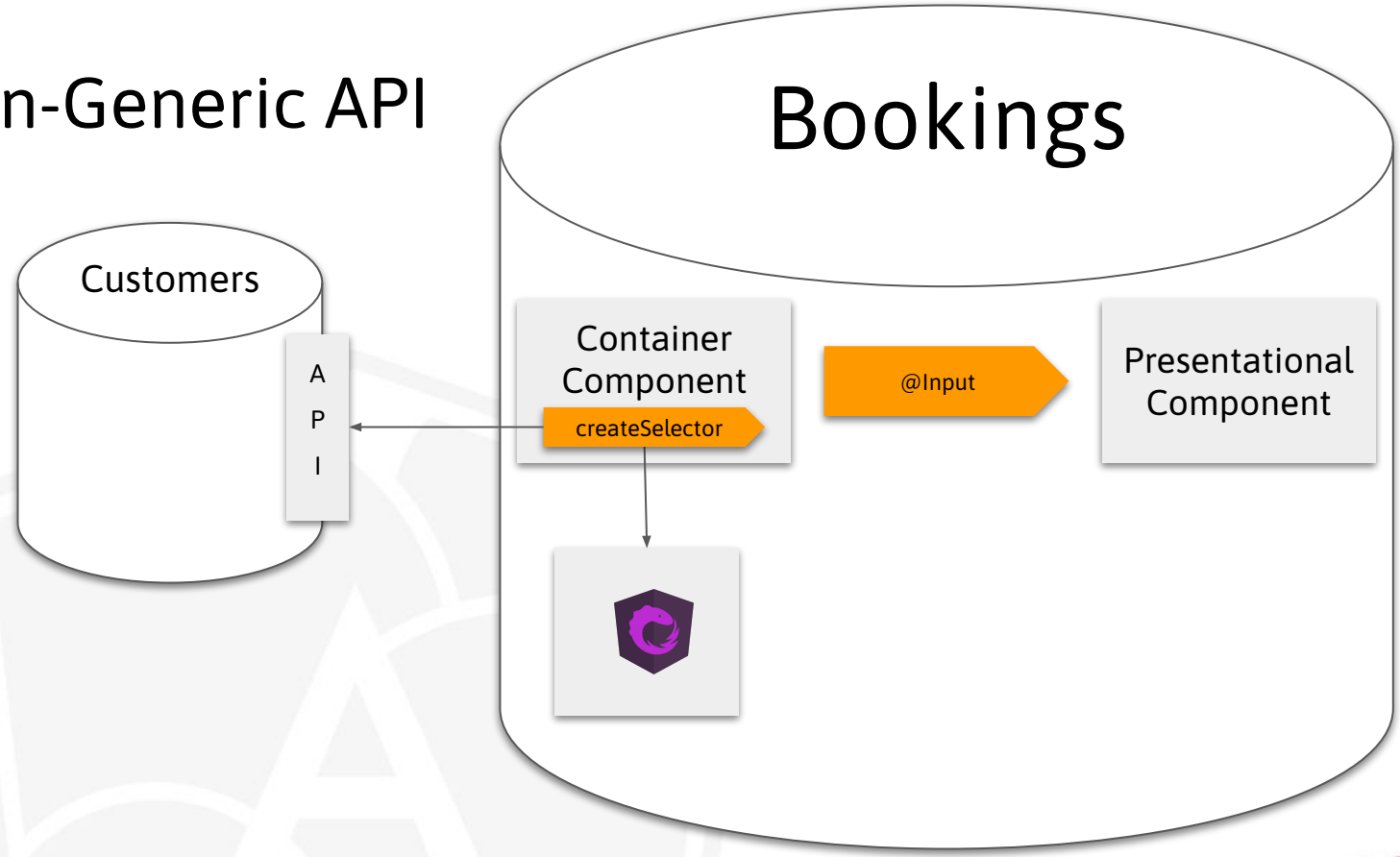
Non-Generic API



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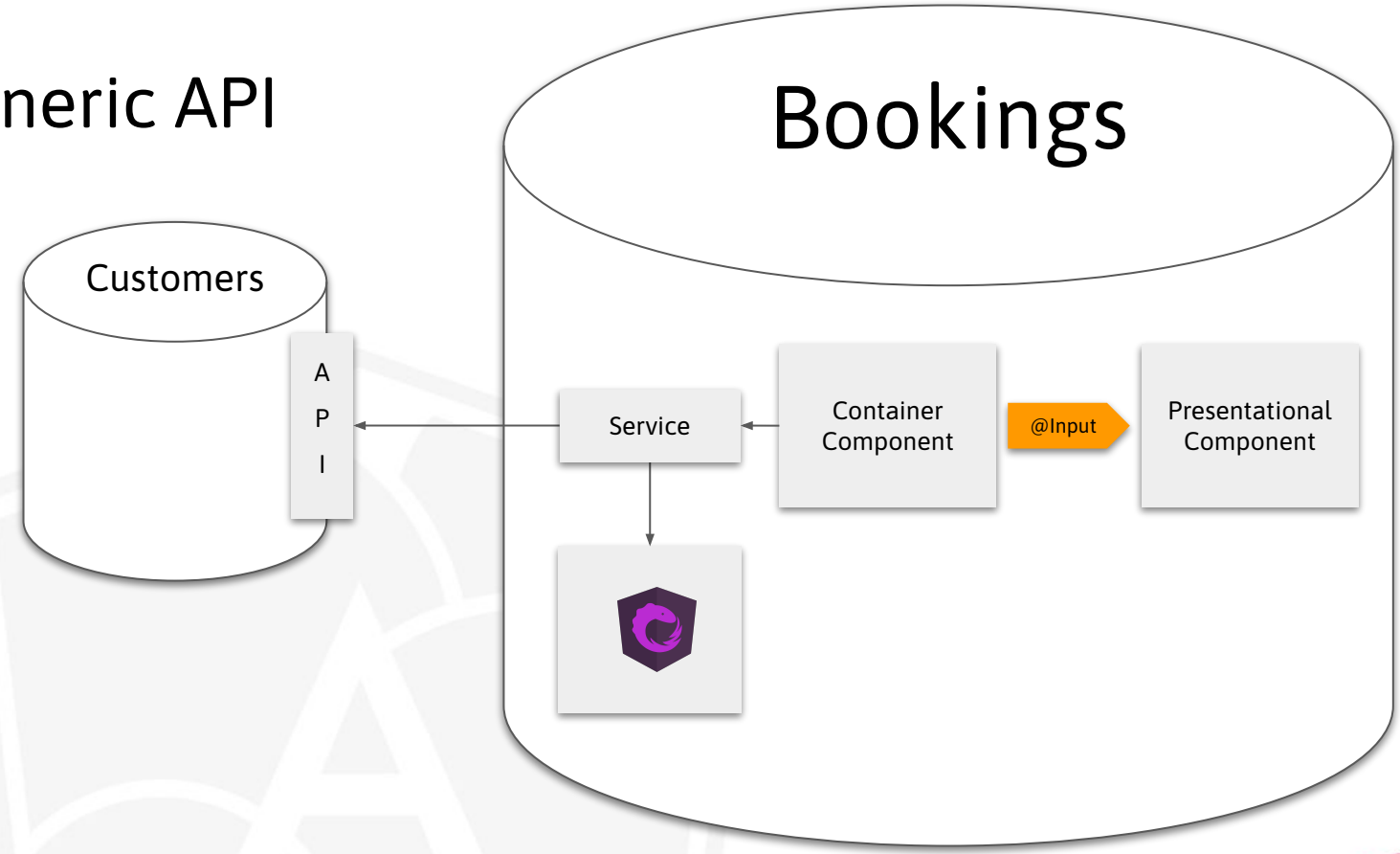
Generic API



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Summary

- Use Nx's linting rules
  - Encapsulation
  - Dependency rules
- Use repository for simplification
- Use an API module for domain dependencies
- combineLatest for complex ViewModels