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Building Modular Mobile Applications in Flutter

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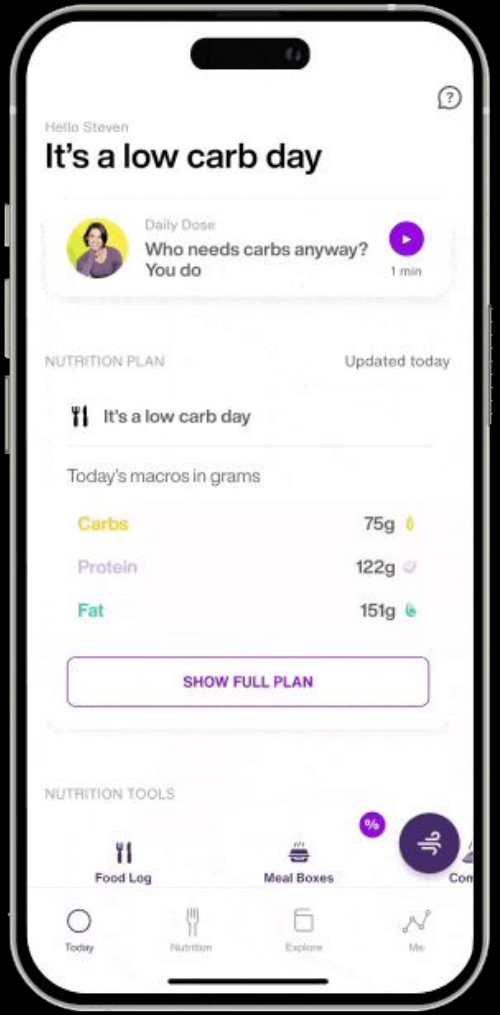
The Problem:

Some apps are Complex

Reference:

The Lumen App



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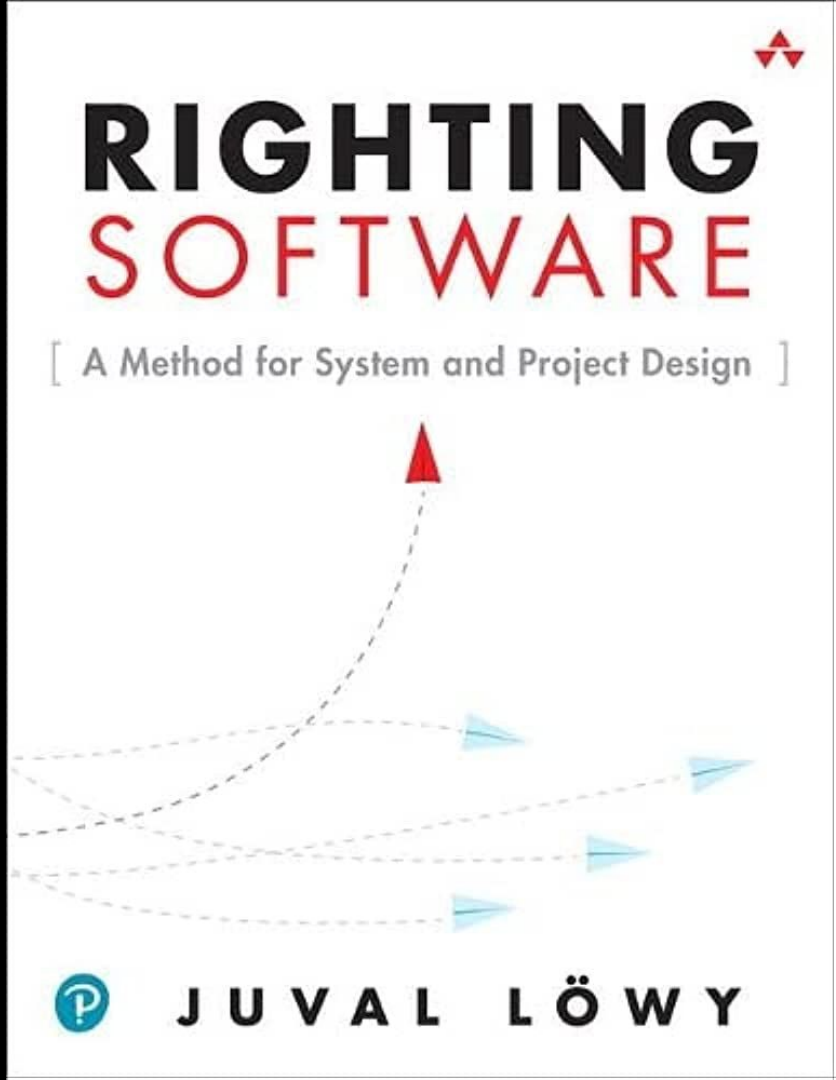
A solution:

“Good” Architecture



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Functional decomposition

Example: Building a House

Cooking	Playing	Resting	Sleeping	Eating
Bathing	Growing	Cleaning	Fixing	Working

…

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Functional decomposition

Example: Building a House

Kitchen	Bedroom 1	Garage
Bedroom 2	Living Room	Attic

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Volatility decomposition

Example: Building a House

Electricity	Furniture	Occupants
Structure	Neighbors	City

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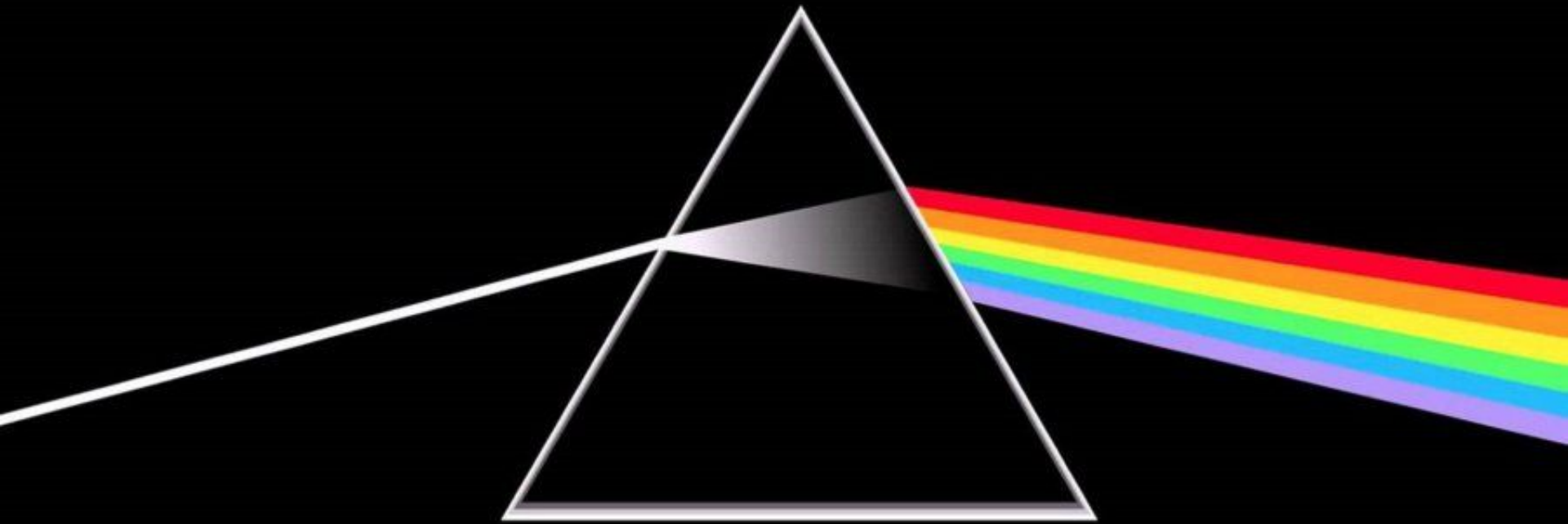
“Good” Architecture

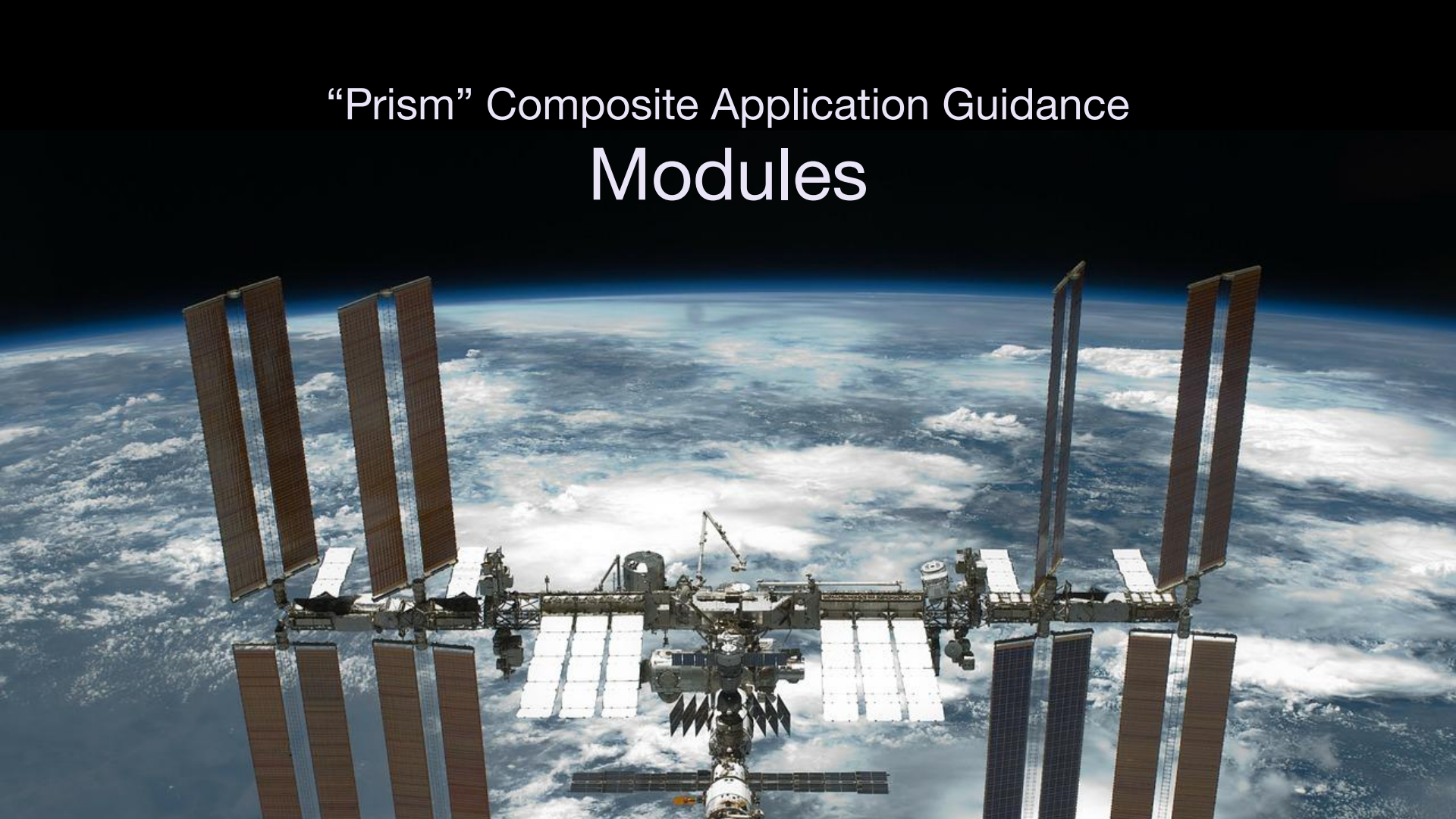
Volatility decomposition > Functional decomposition

“Prism” Composite Application Guidance



“Prism” Composite Application Guidance

Modules



“Prism” Composite Application Guidance

Modules

Bootstrapper

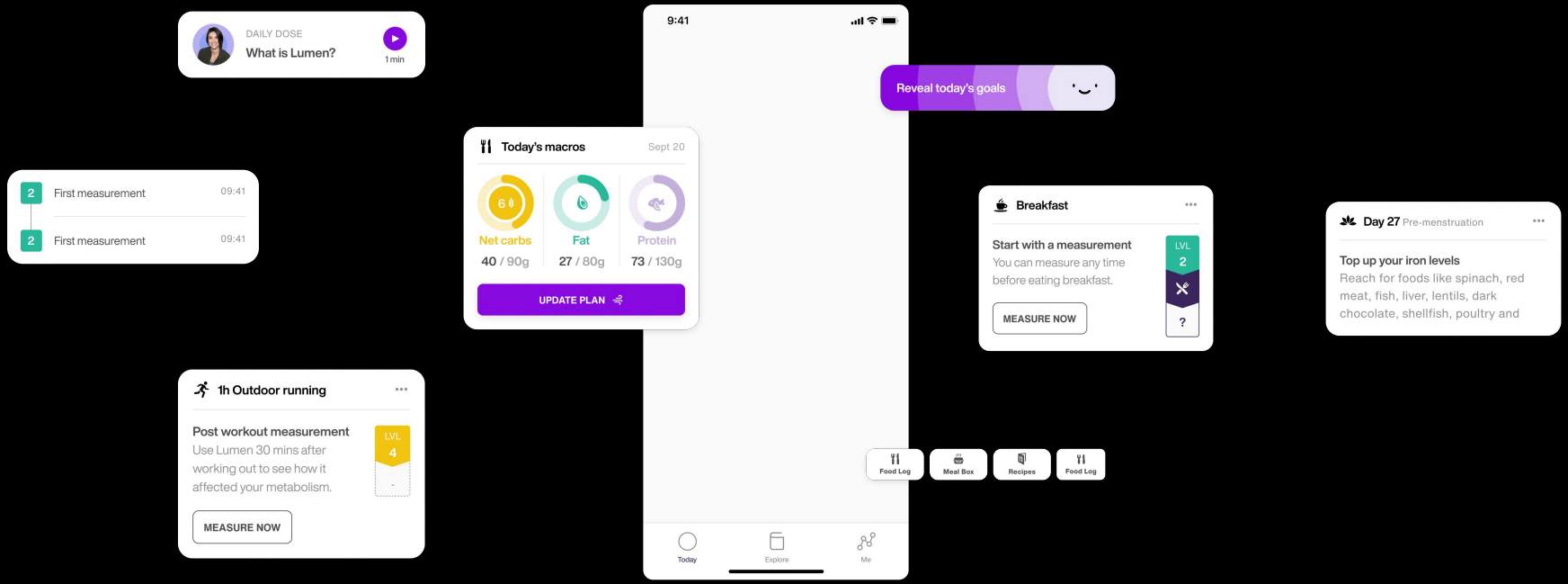
- Setting up modules to boot.
- Initializing startup components: navigation, etc

Modules

- Initializing app “features”.
- Registering services, widgets, events, etc.

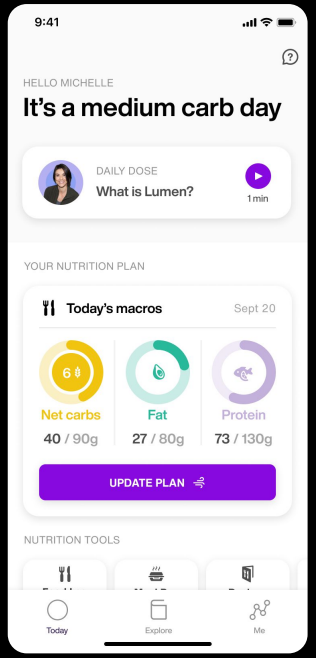
“Prism” Composite Application Guidance

Regions



“Prism” Composite Application Guidance

Regions




```
    final regionManager = container<RegionManager>();
    regionManager.registerView(
      RegionNames.actionArea.name,
      RegionWidgetRegistration(
        metadata: RegionMetadata("addDevice"),
        registration: (context) => const
FloatingAddDeviceWidget(),
      ),
    );
```

“Prism” Composite Application Guidance

Publisher-Subscriber

“Prism” Composite Application Guidance

Publisher-Subscriber

Register → Subscribe → Publish

```
class DeviceAddedEvent extends Event<String> {}
...
locator<EventAggregator>().register(DeviceAddedEvent());
```

“Prism” Composite Application Guidance

Publisher-Subscriber

```
locator<EventAggregator>().getEvent<DeviceAddedEvent>(
)?.subscribe((payload) => ...);
```

“Prism” Composite Application Guidance

Publisher-Subscriber

```
locator<EventAggregator>().getEvent<DeviceAddedEvent>(
)?.publish(widget.deviceId);
```

“Prism” Composite Application Guidance

Navigation

“Prism” Composite Application Guidance

Navigation

Bootstrapper

- Setting up Shell area: Tabs as regions, eg.

Modules

- Defining routes and enforcing isolation between modules.

DEMO

Q&A

Thank you!

Looking for the code and slides?
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