



LoopBack

Write Scalable and Extensible
Node.js Applications using
LoopBack 4



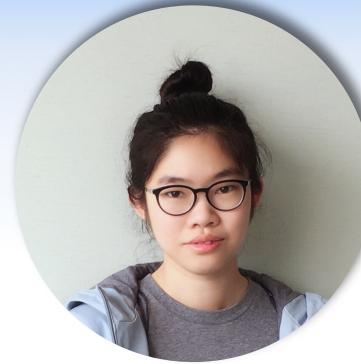
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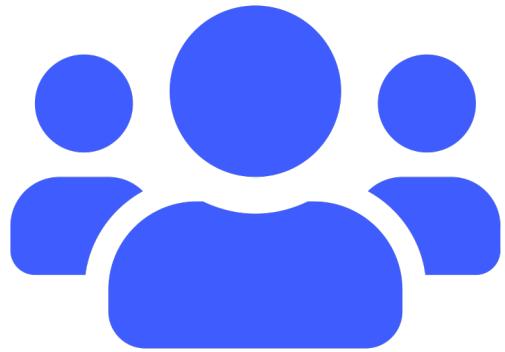
 @agnes512

Let's Run a Few Polls

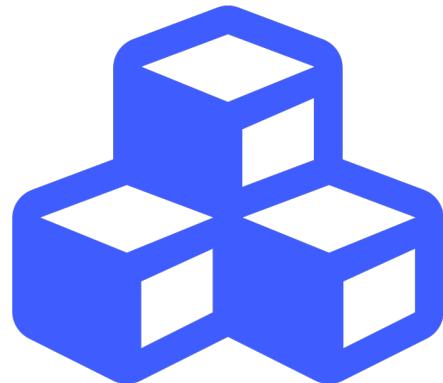


- Do you work on Node.js applications, frameworks, or modules?
- Do you think your Node.js project is large scale?
- What are the characteristics of a large scale Node.js project?

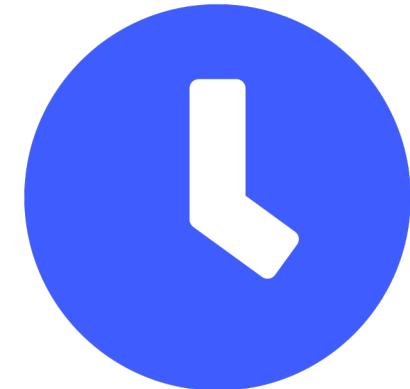
A Large Scale Node.js Application



of Teams,
Developers, Users



of NPM Packages,
GitHub Repos

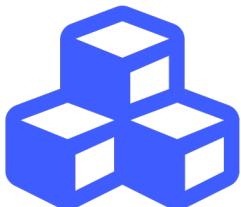


of Years & Releases of
Development and Maintenance

LoopBack – a large scale Node.js framework



12,000+ GitHub Stars



50+ NPM Modules



150,000+ Monthly Downloads



8 Full-time Maintainers
+ Many Community Contributors



Created 5+ Years Ago



2 Major Releases (v3 and v4)

**BEST IN
API MIDDLEWARE**

**PRESENTED TO
LoopBack**

**COMPANY
IBM**

THE 2019
API AWARDS



presented at

{API:WORLD™}

OCT 8-10, 2019 | SAN JOSE, CA

Challenges We Addressed



Customize the behavior of certain features



Extend the capabilities of your framework/application



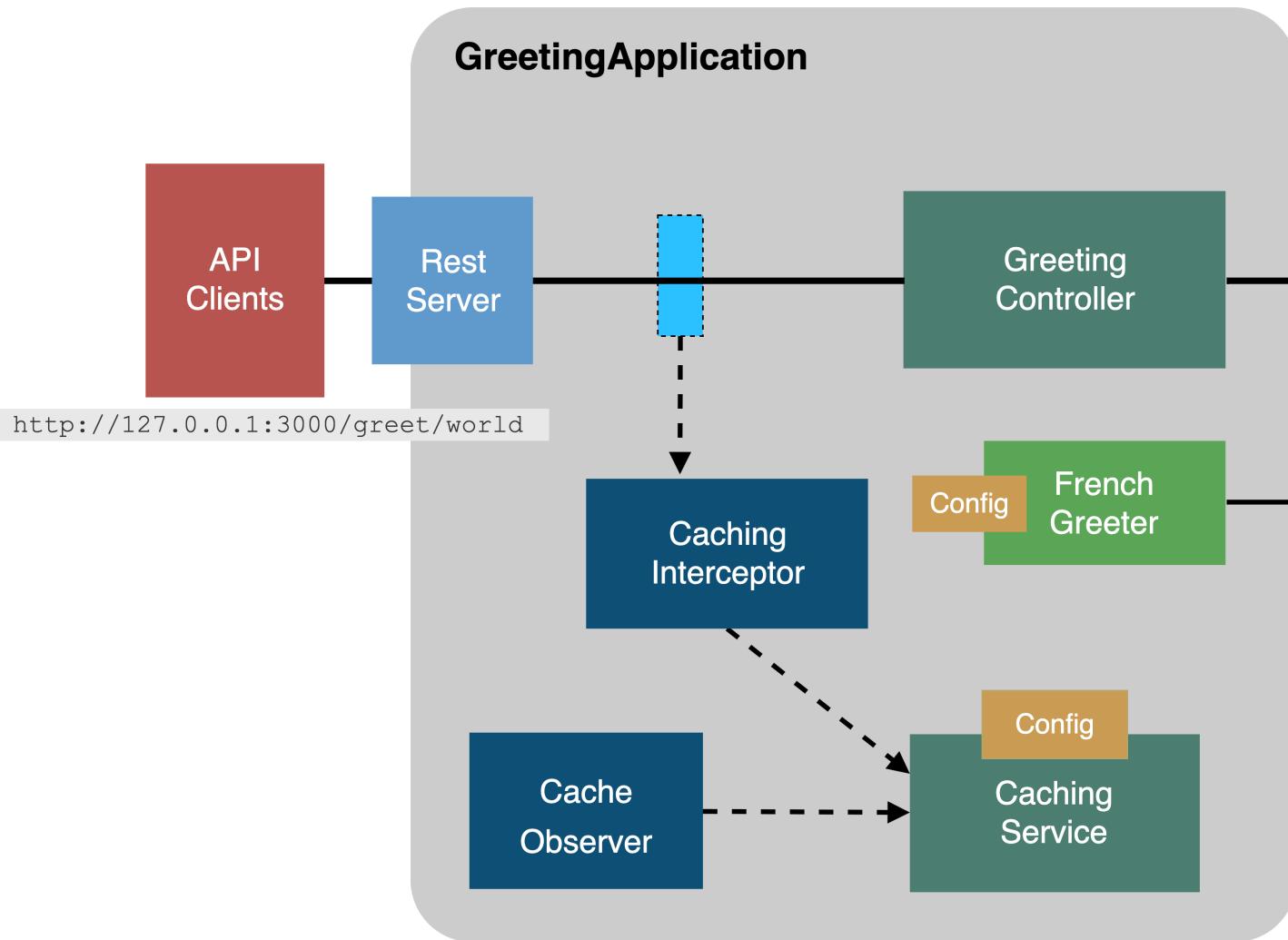
Decompose a sequence of processing flow into actions



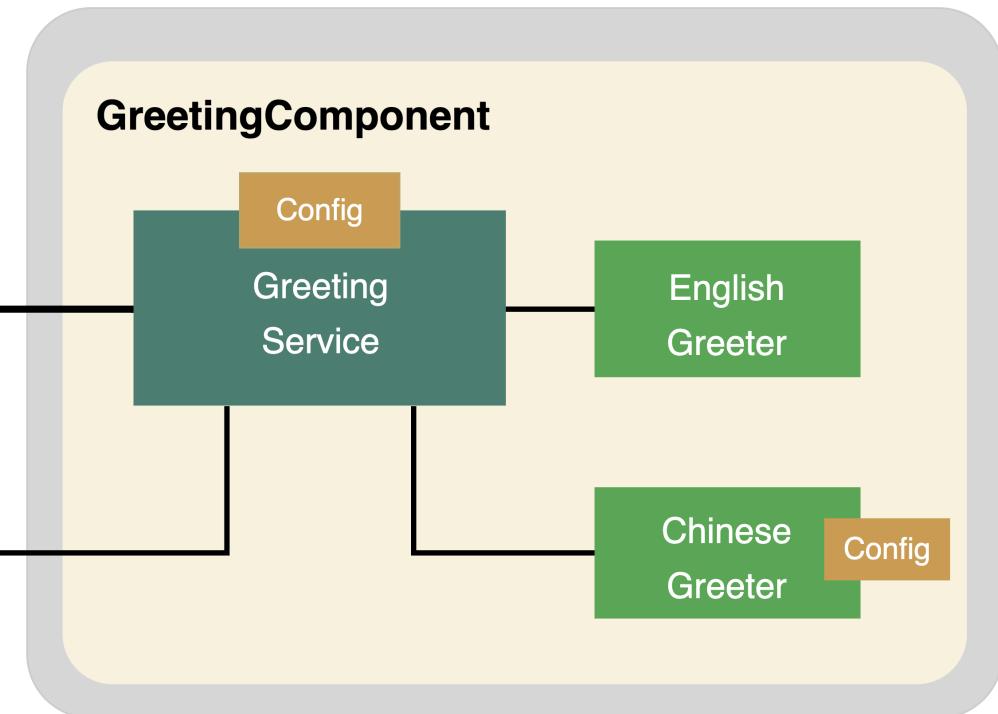
Compose a set of actions into a meaningful flow/sequence

Application Scenario

greeting-app:



greeter-extension:



Part 0

Before We Get Started

- + Install Node.js version 8.9 or higher

- + Set up development environment

- + Install LoopBack 4 CLI

```
$ npm i -g @loopback/cli
```

- + Clone our git repository

```
$ git clone https://github.com/strongloop/cascon2019.git
$ cd cascon2019
```

>> The code you need for the workshop are all in the instruction

Part 1

Enter the following command to start get started:

```
$ git checkout master
```

Part 1

Simple Application

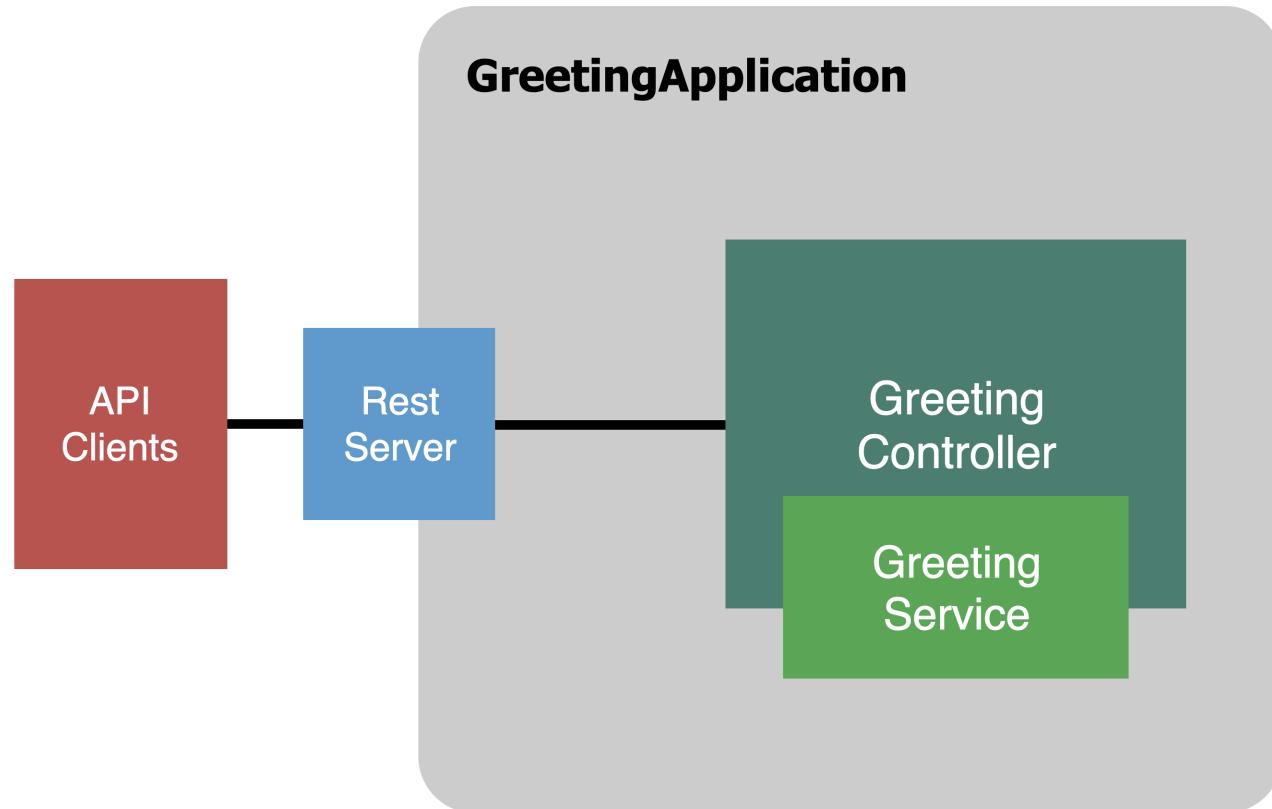


Simple



One Module

greeting-app:



Part 2

If you haven't finished the previous step,
enter the following commands to start on next part

```
$ git stash  
$ git checkout workshop-part1-completed
```

Part 2

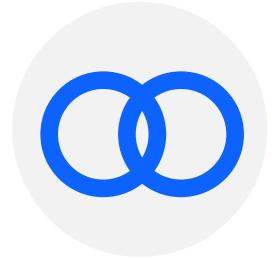
Decouple the Application



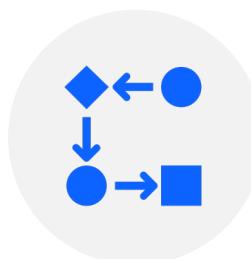
Component



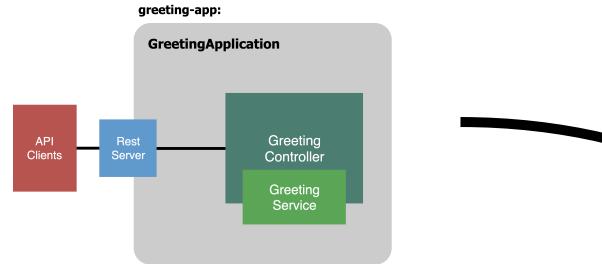
Dependency Injection



Binding

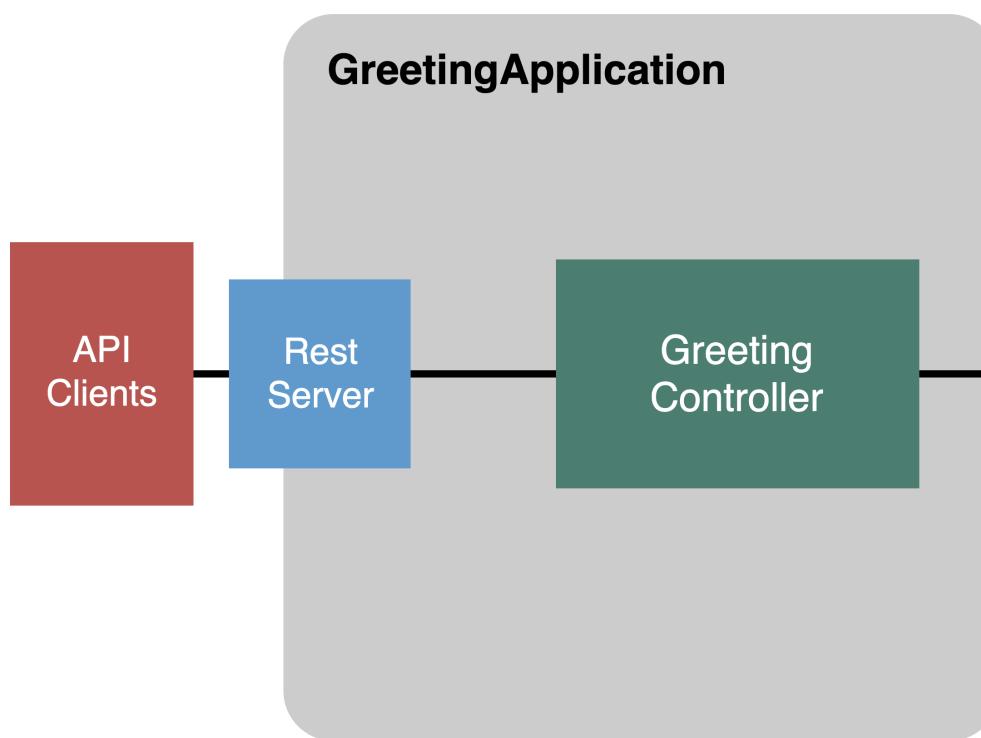


Inversion of Control

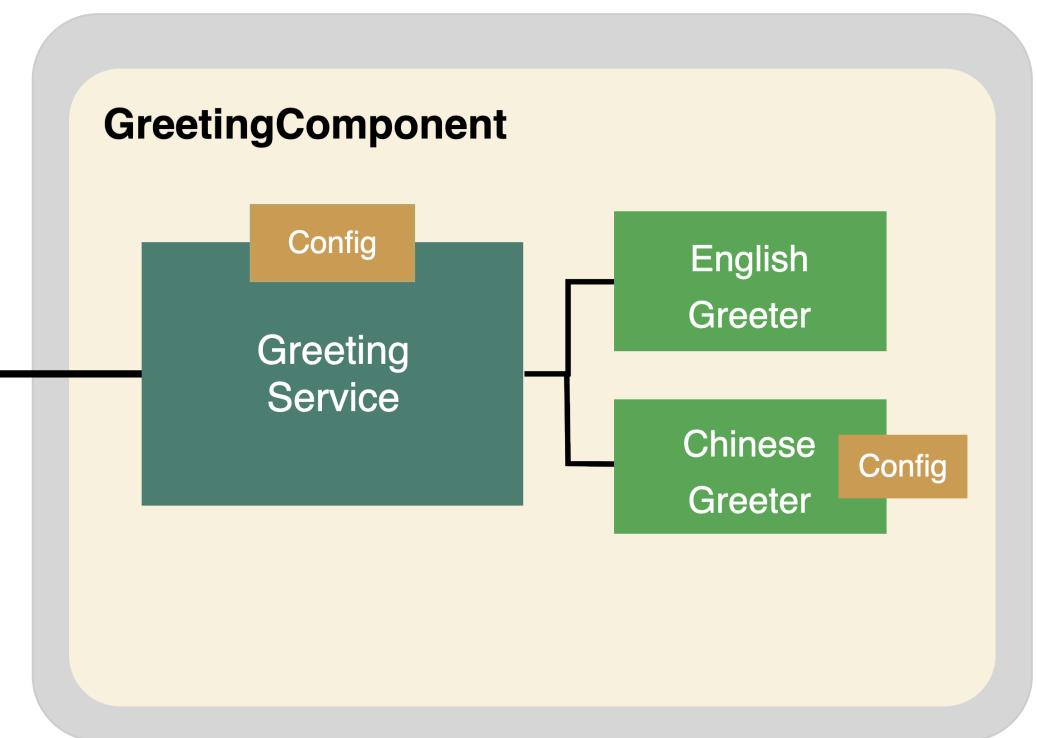


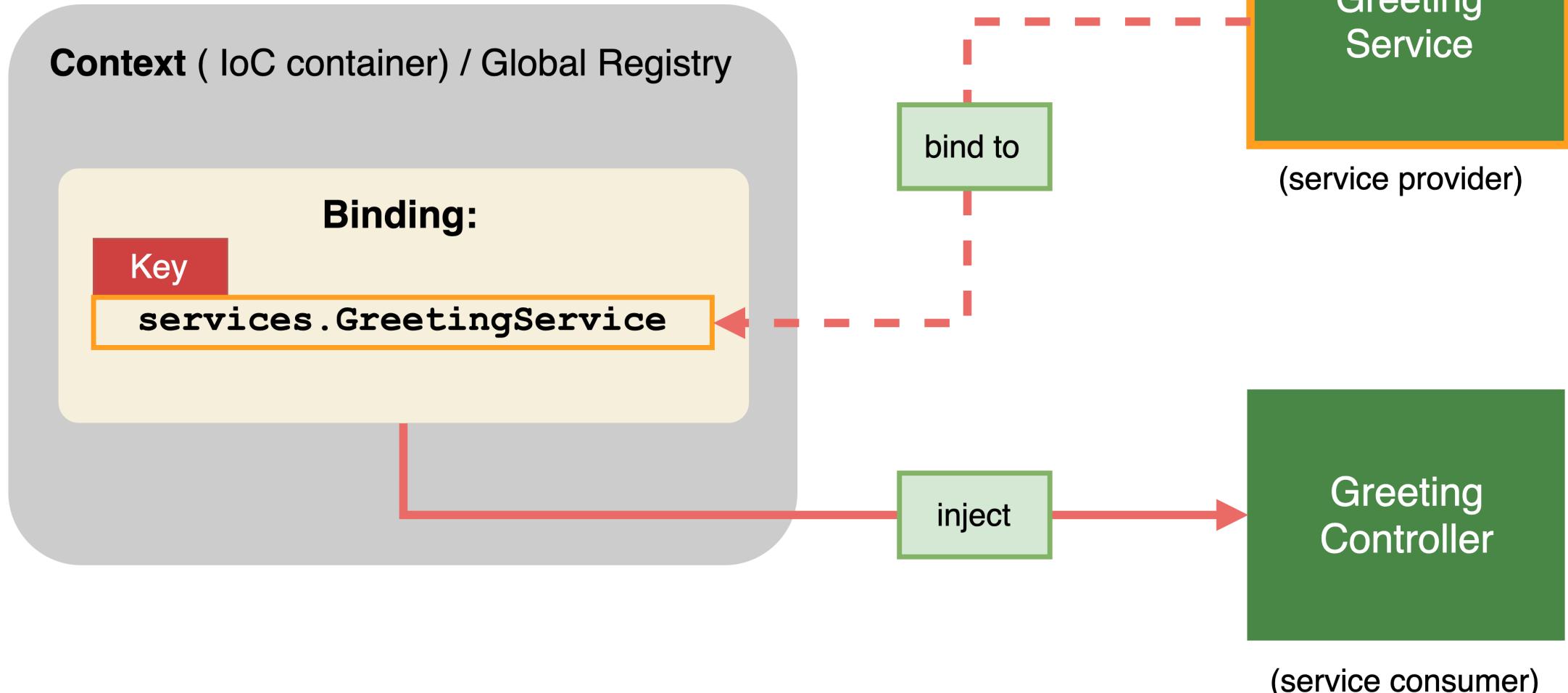
Separate into 2 modules

greeting-app:

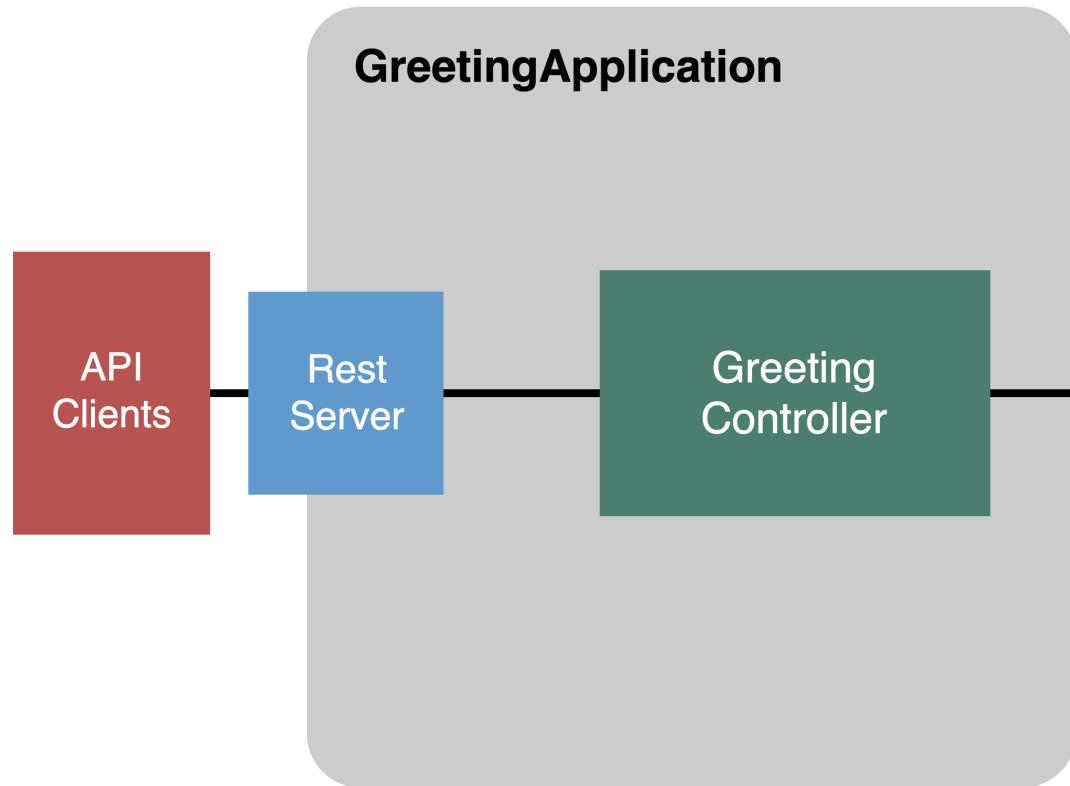


greeter-extension:

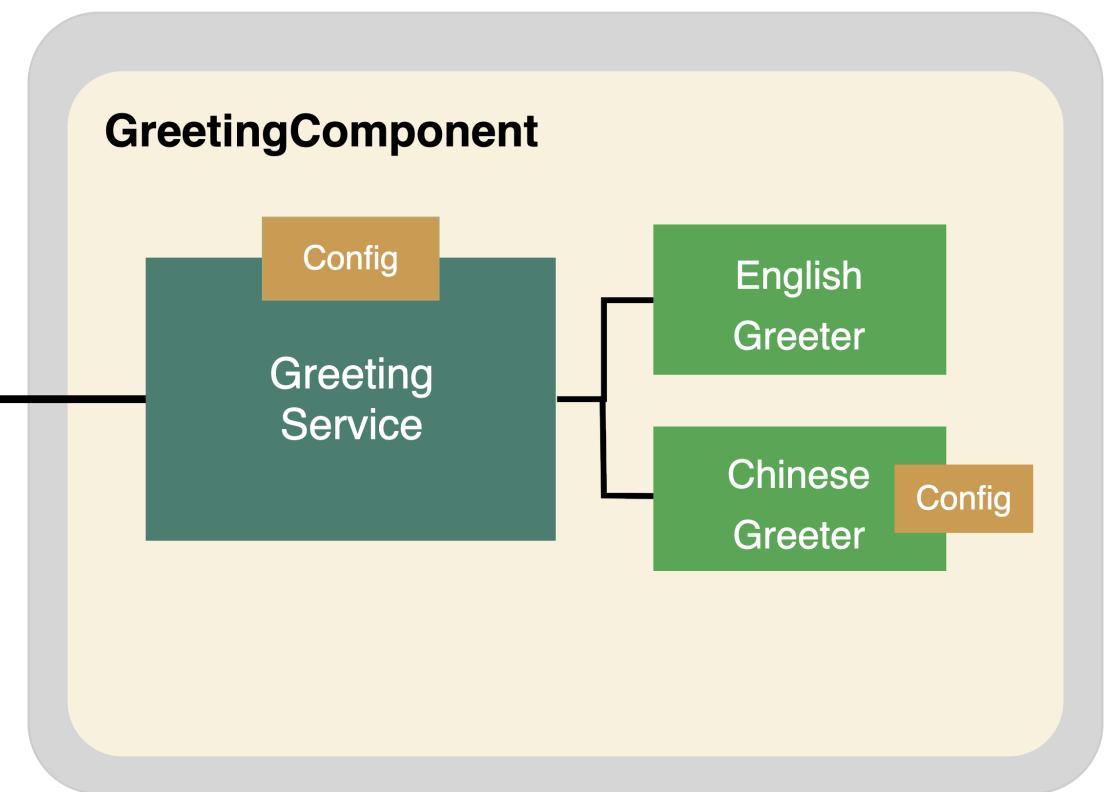




greeting-app:



greeter-extension:



Part 3

If you haven't finished the previous step,
enter the following commands to start on next part

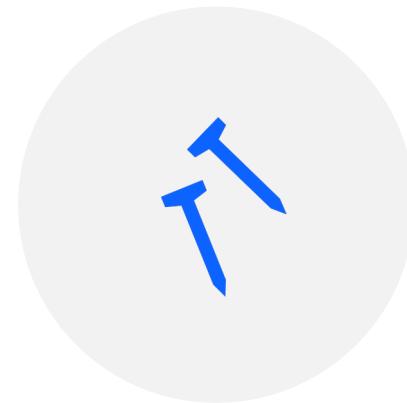
```
$ git stash  
$ git checkout workshop-part2-completed
```

Part 3.1

Add a New Language Extension

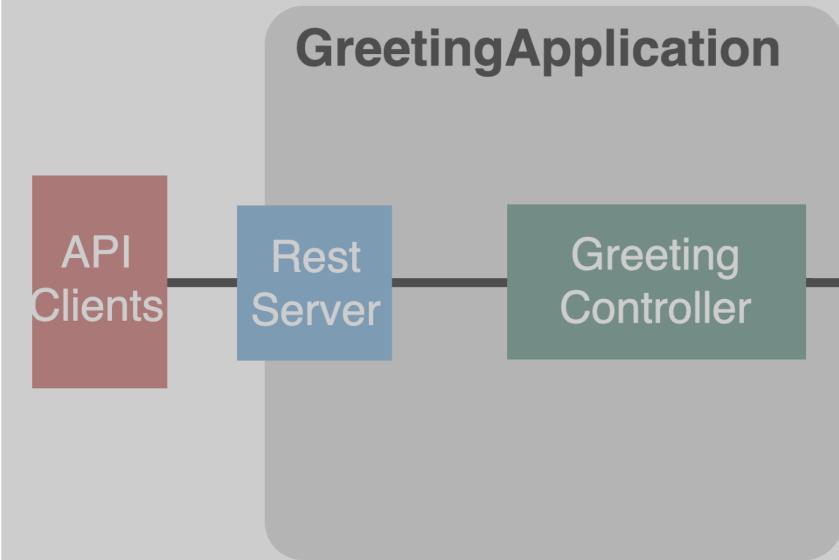


Extension Point

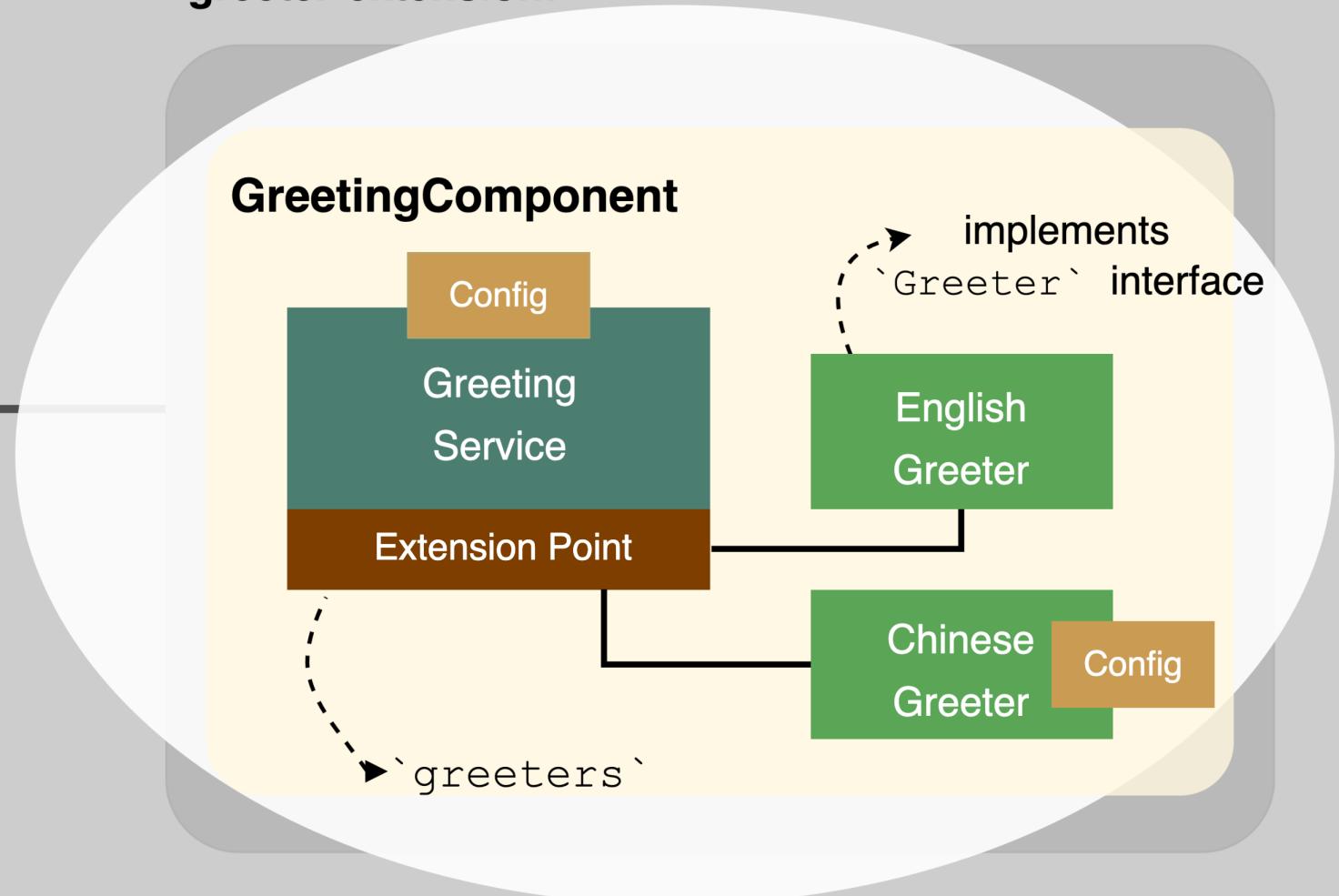


Extension

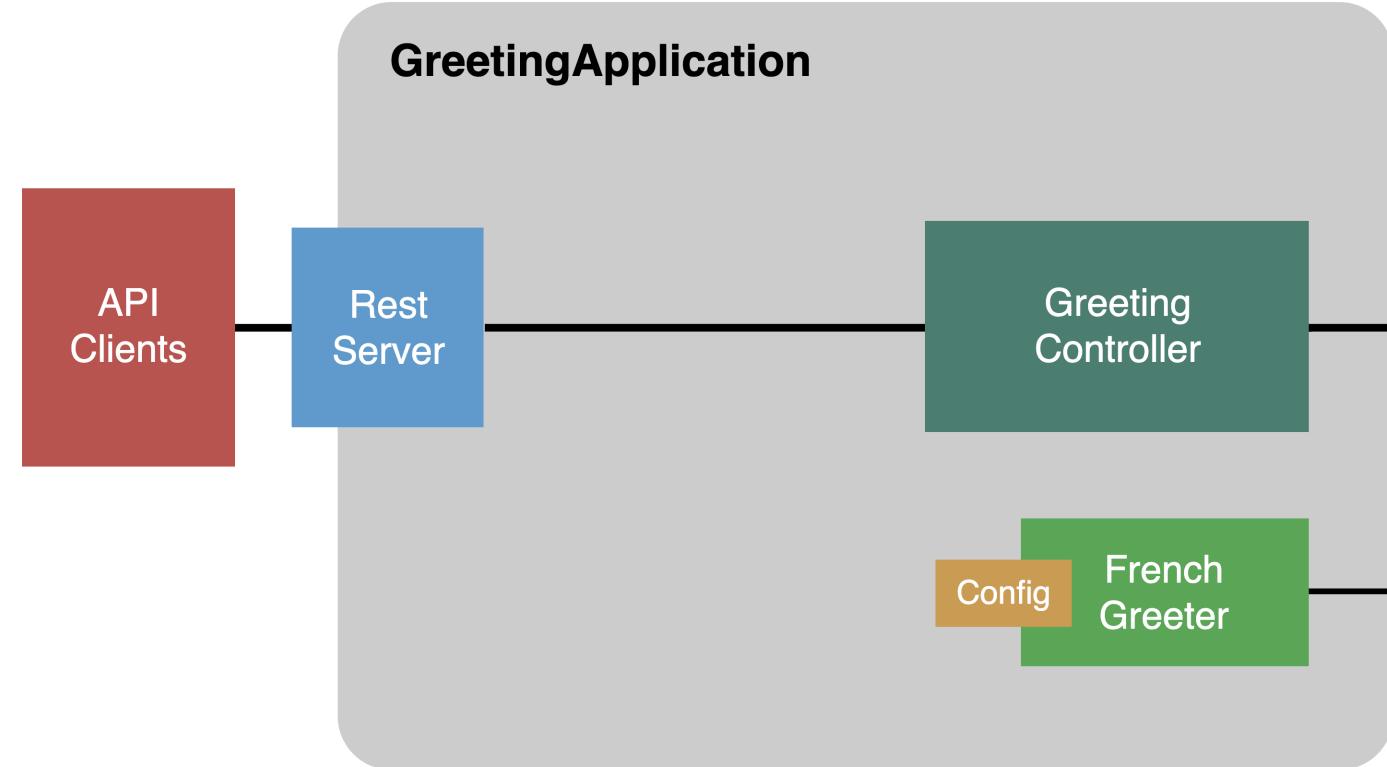
greeting-app:



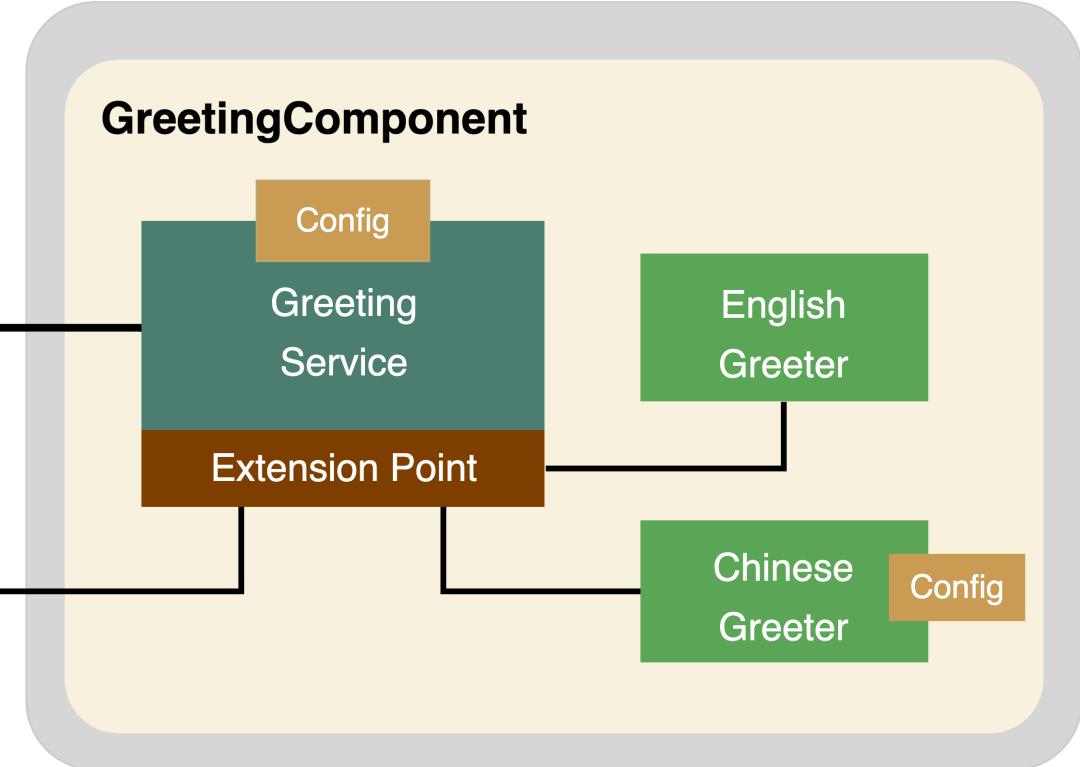
greeter-extension:



greeting-app:



greeter-extension:



Part 3.2

Configuration



Configuration

greeting-app:

GreetingApplication

API
Clients

Rest
Server

Greeting
Controller

Config
French
Greeter

greeter-extension:

GreetingComponent

Config

Greeting
Service

Extension Point

English
Greeter

Chinese
Greeter

Config

Part 4

If you haven't finished the previous step,
enter the following commands to start on next part

```
$ git stash  
$ git checkout workshop-part3-completed
```

Part 4

Enable Caching



Interceptor

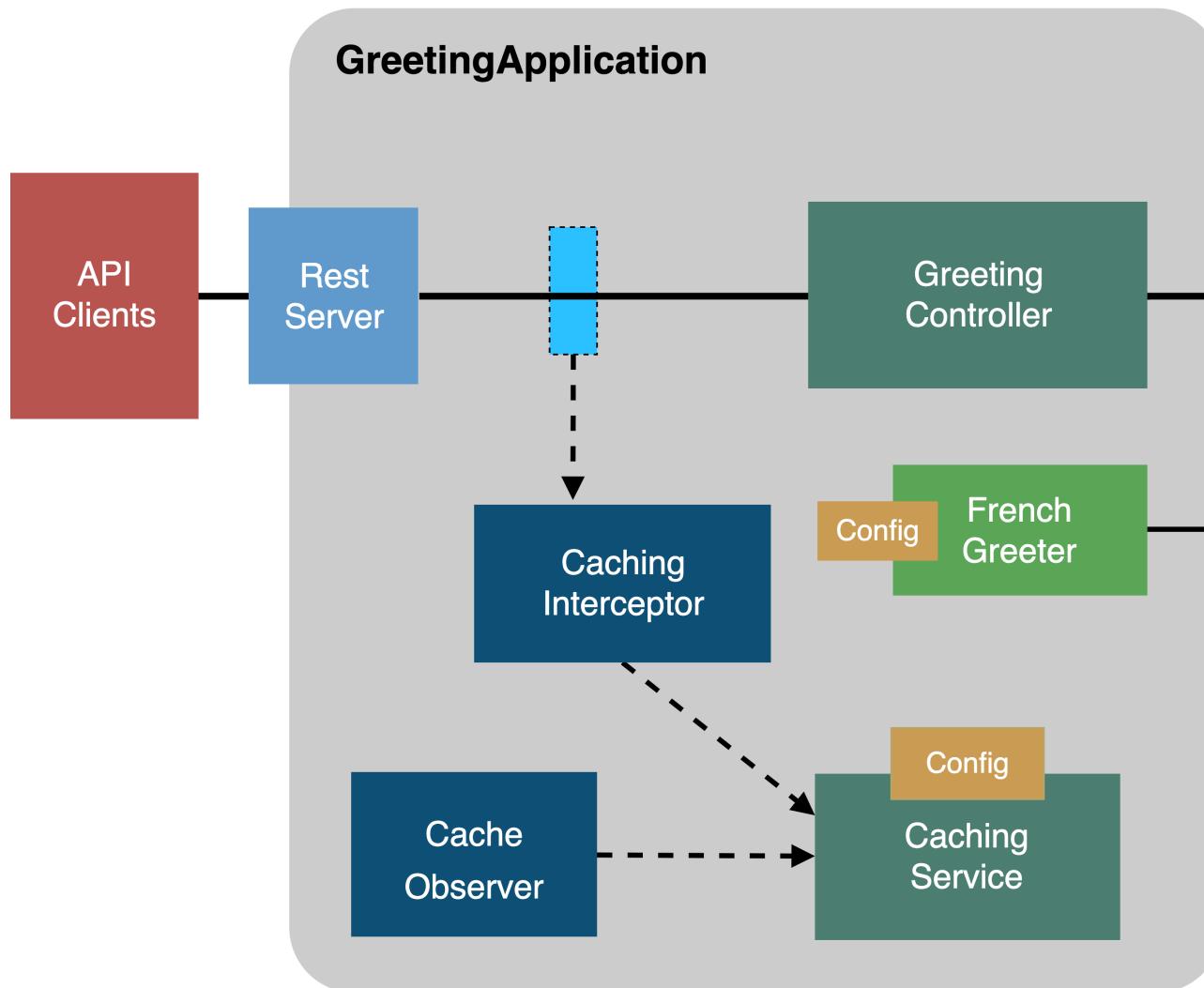


Observer

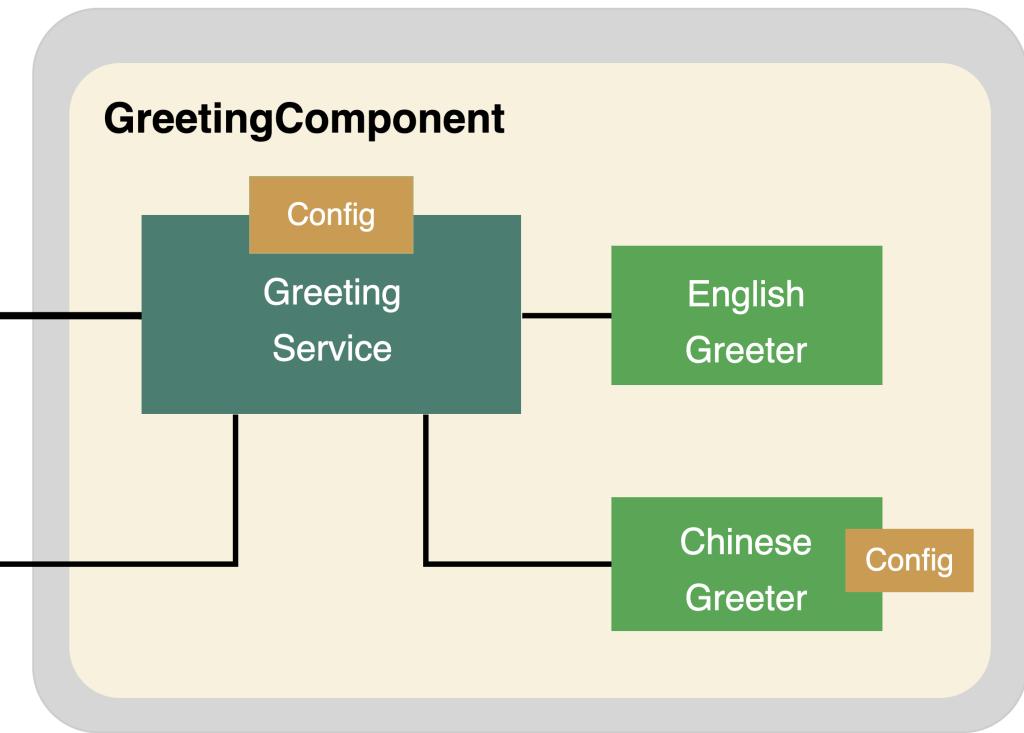
Let's Build a Caching System That Does:

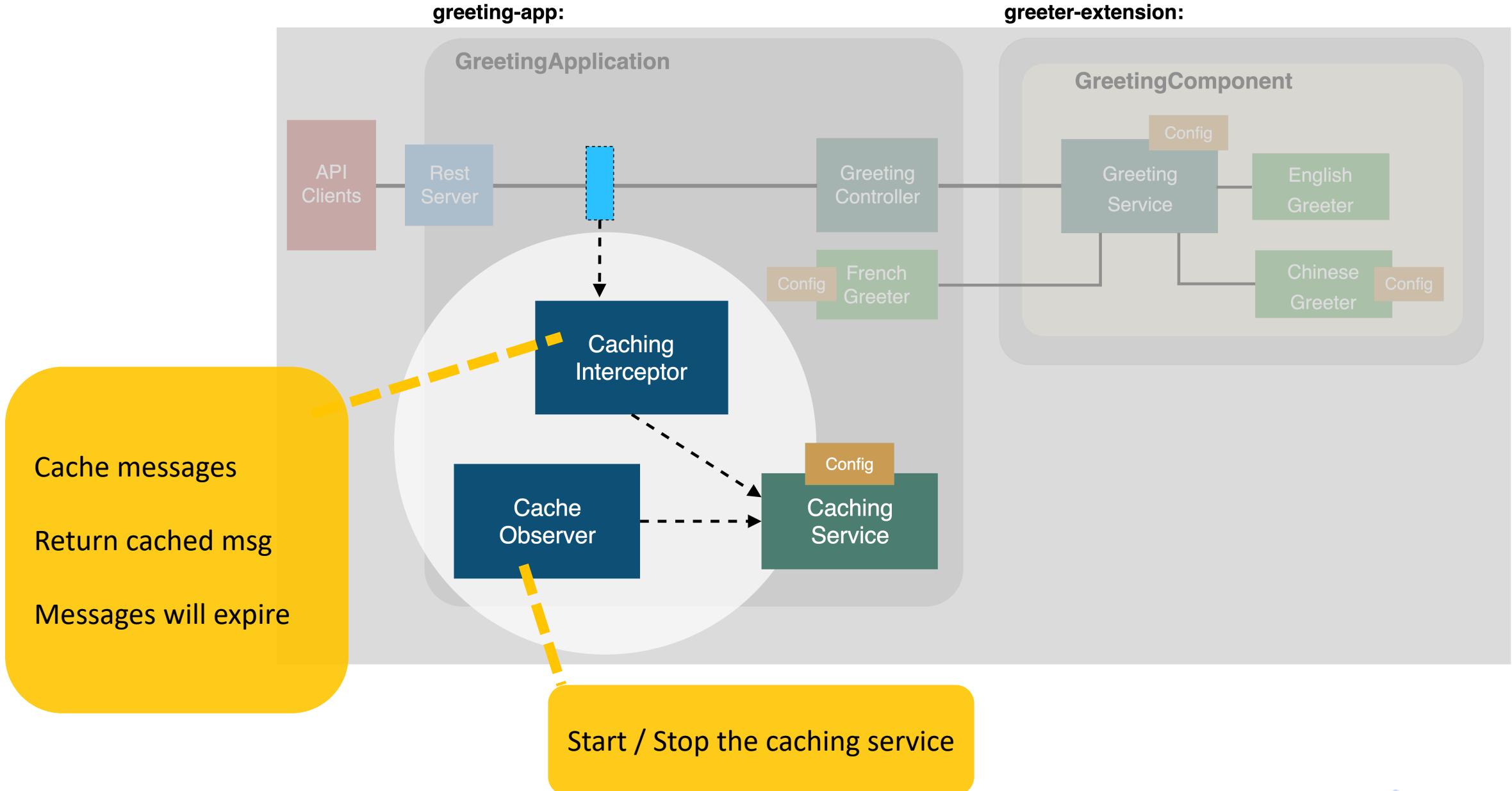
- + Cache the result using the request's URI and language as the key
- + The cached message has an expiration time
- + Expired messages will be swept out periodically

greeting-app:



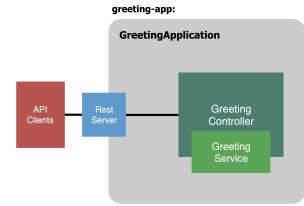
greeter-extension:





Congratulations! You've completed the workshop

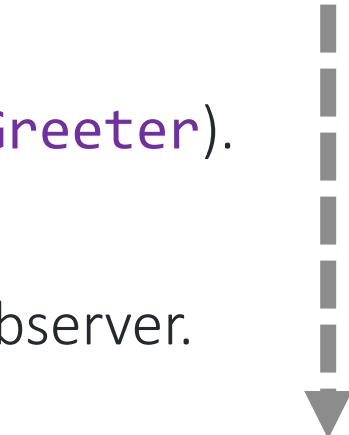
★ Built a LoopBack application and separated it into two modules.



★★ Enriched the functionality of the app by adding extensions (**FrenchGreeter**).

★★★ Created a caching service that is started and stopped by a lifecycle observer.

★★★★ Retrieved/stored request responses from/in the cache with an interceptor.



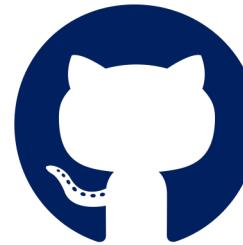
You can find the completed code of this workshop in the git branch:

```
$ git checkout workshop-part4-completed
```

Thank You!



loopback.io



[Strongloop/loopback-next](https://github.com/Strongloop/loopback-next)



[@StrongLoop](https://twitter.com/StrongLoop)

Acknowledgement

- The LoopBack team at IBM and our contributors from the community making good things happen in open source
- Taranveer Virk and Raymond Feng - allowing us to reuse some of their slides
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