Calling REST APIs with WebClient

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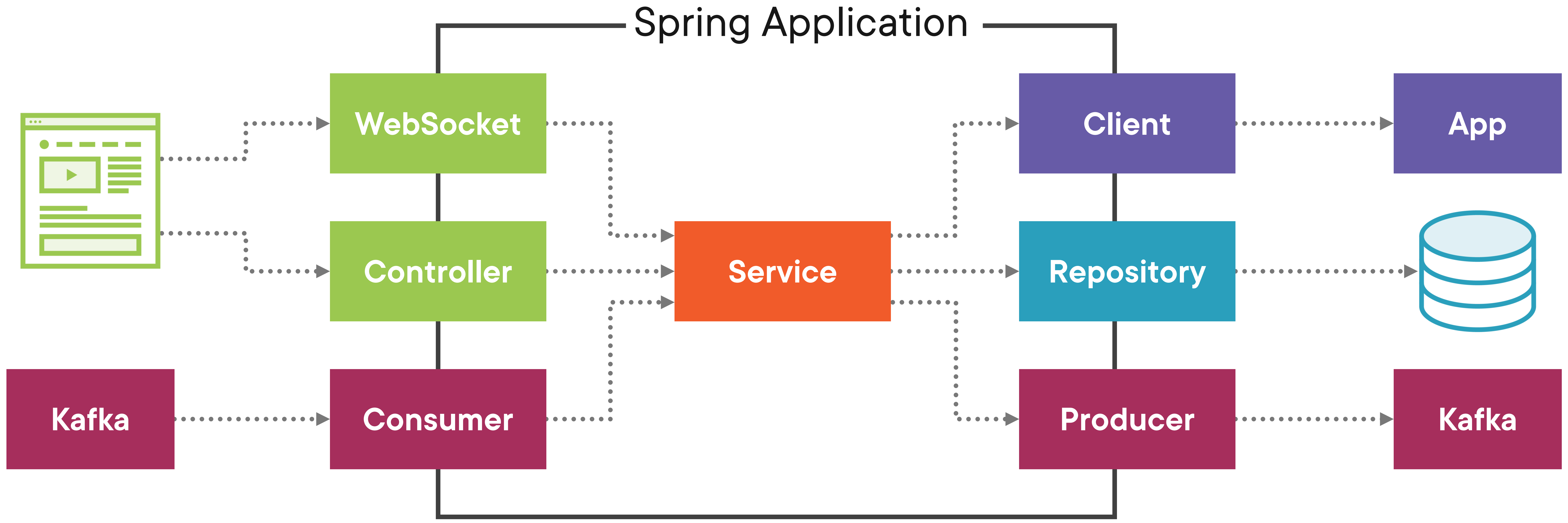
Layered Architecture



WebClient

Reactor Netty

Jetty Reactive HttpClient

Apache HttpComponents

```
WebClient.create()

WebClient.create(String baseUrl)



WebClient.builder()
         .uriBuilderFactory(...)
         .defaultUriVariables(...)
         .defaultHeader(...)
         .defaultCookie(...)
         .defaultRequest(...)
         .filter(...)
         .exchangeStrategies(...)
         .clientConnector(...)
         .build()
```

◀ **Create WebClient**

◀ **Create WebClient with base URL**

◀ **Builder**

◀ **Provide base URL**

◀ **Default values to use when expanding URI**

◀ **Provide default headers**

◀ **Provide default cookies**

◀ **Customize request**

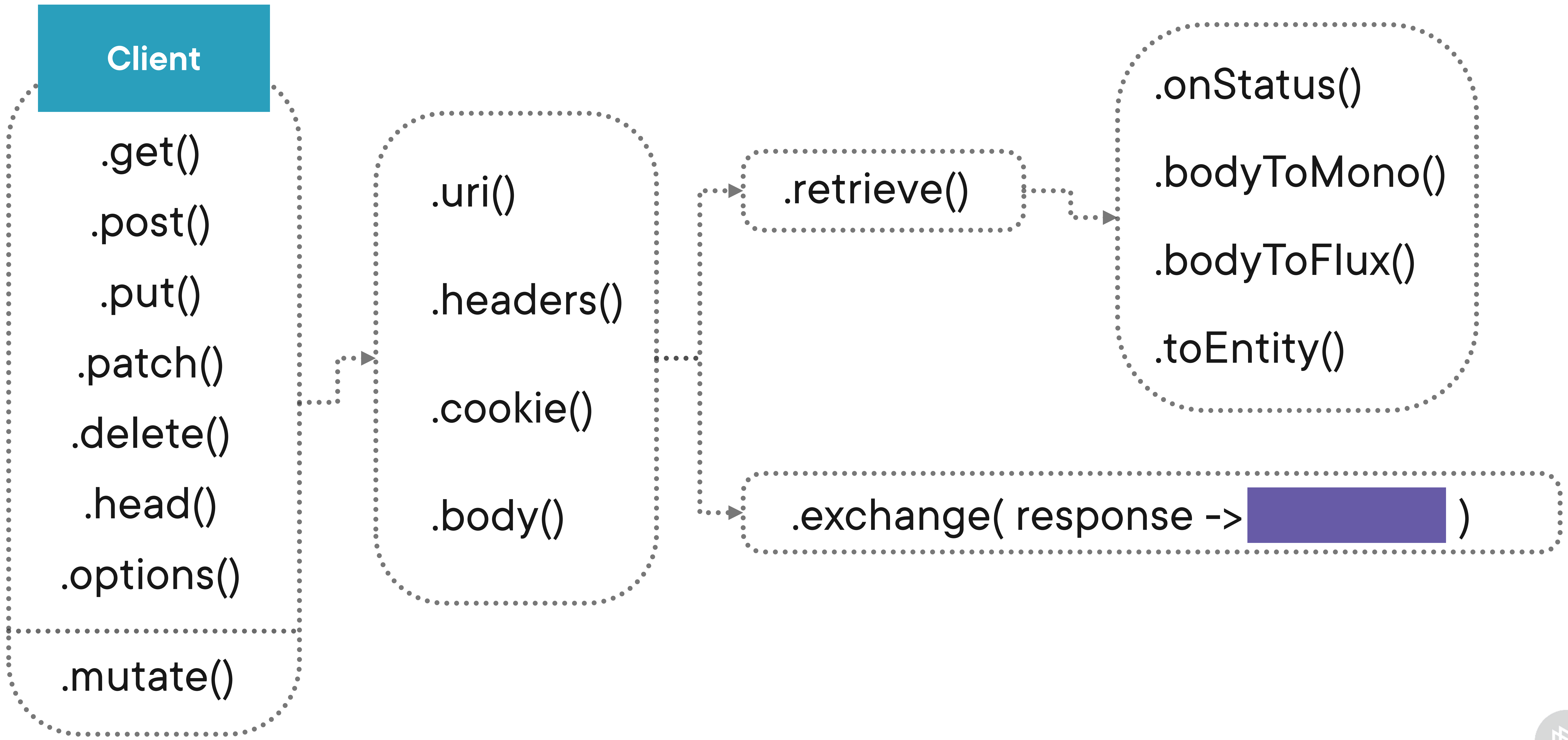
◀ **Client filter**

◀ **HTTP reader/writer customization**

◀ **HTTP client library settings**

◀ **Finalize build**

WebClient


Client
.get()
.post()
.put()
.patch()
.delete()
.head()
.options()
.mutate()
.uri()
.headers()
.cookie()
.body()
.retrieve()
.onStatus()
.bodyToMono()
.bodyToFlux()
.toEntity()
.exchange(response ->)

Demo

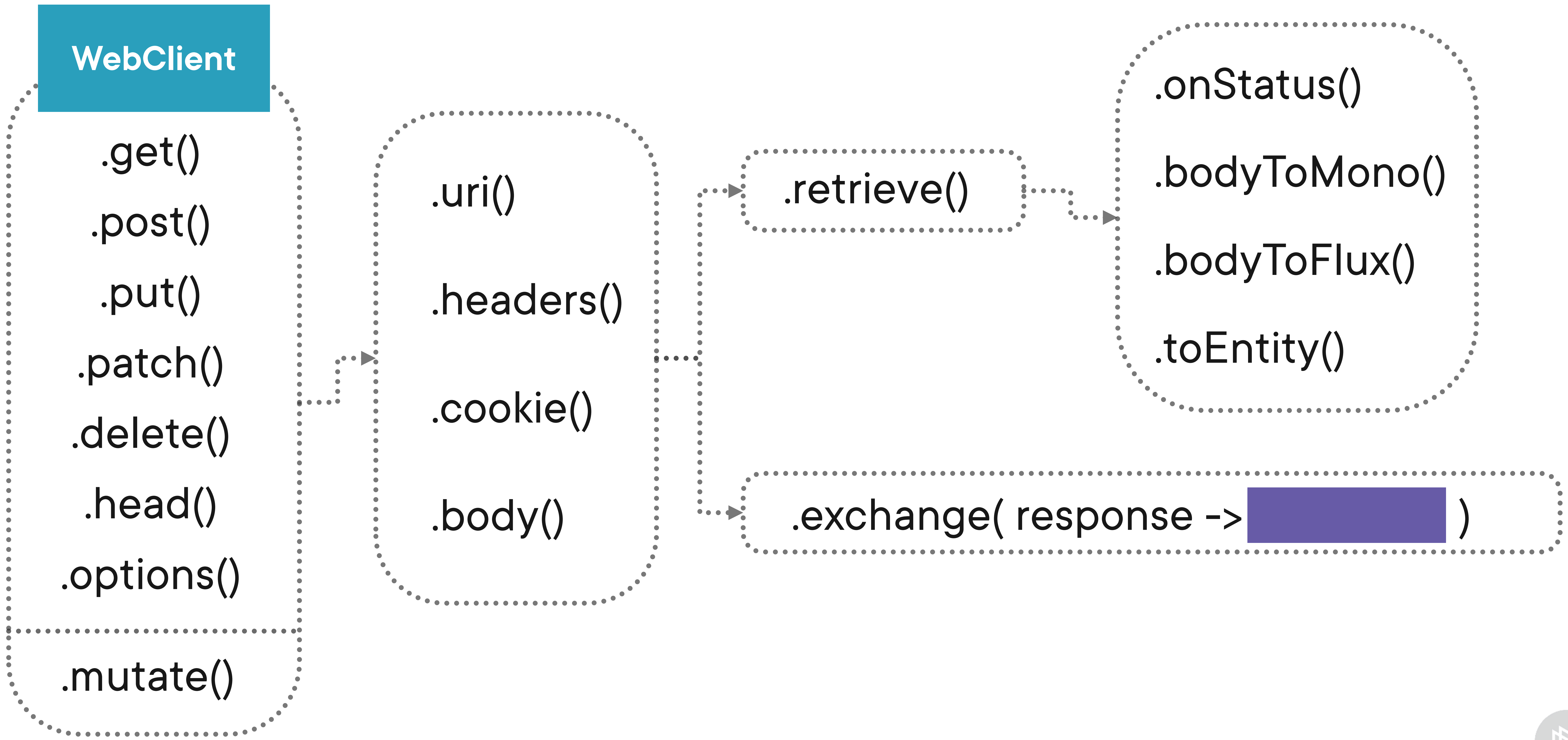
Build the Stock Market WebClient

Use WebClient to make GET calls

Use WebClient to make POST calls

Error Handling

WebClient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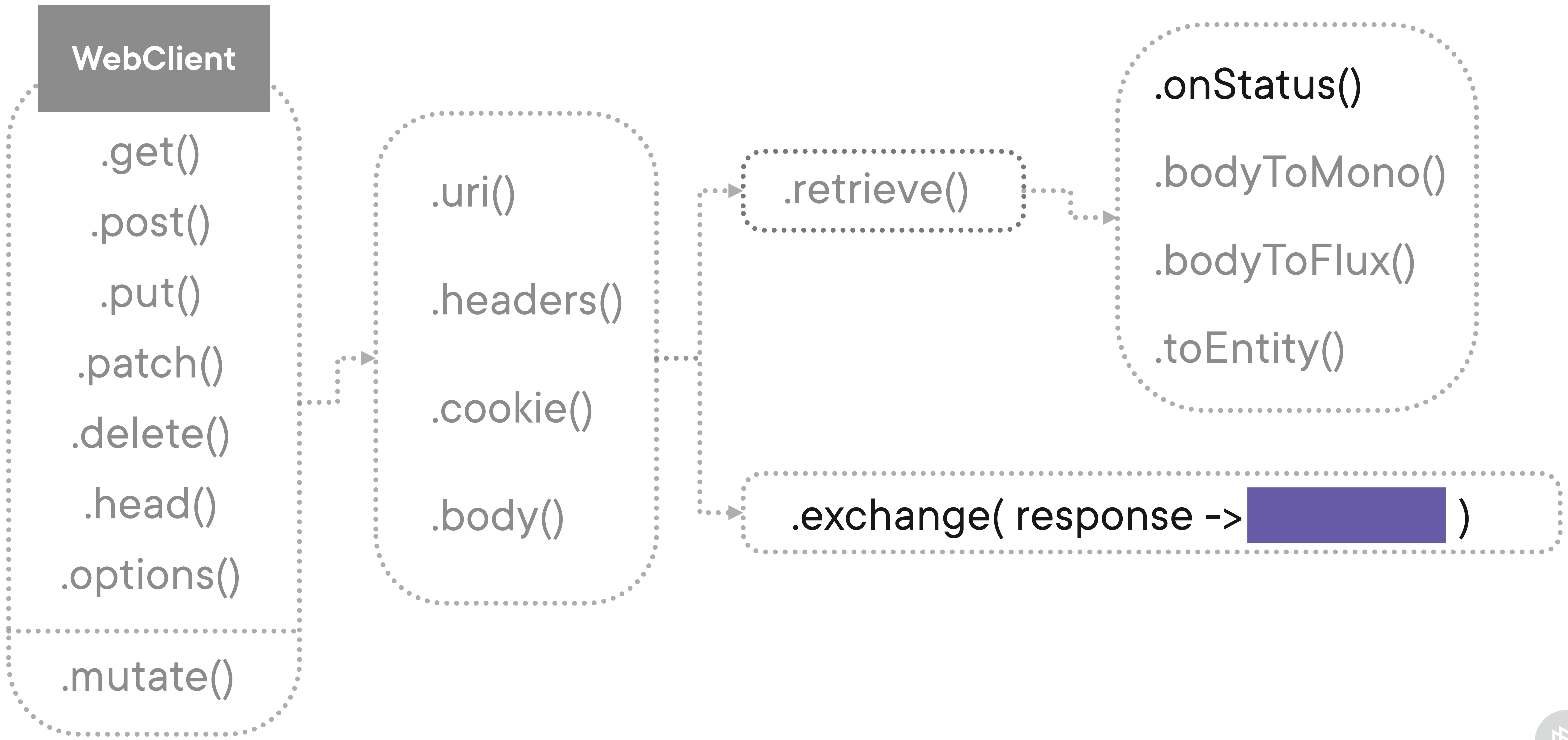
WebClient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.exchange(response ->)

Error Handling with OnStatus

```
webClient.post()
          .retrieve()
```

2xxResponse	`.bodyToMono(2xxResponse.class)`
4xxResponse	`.onStatus(HttpStatus::is4xxClientError, response -> 🟧 )`
5xxResponse	`.onStatus(HttpStatus::is5xxServerError, response -> 🟪 )`

Error Handling with OnStatus

```
webClient.post()
        .retrieve()
```

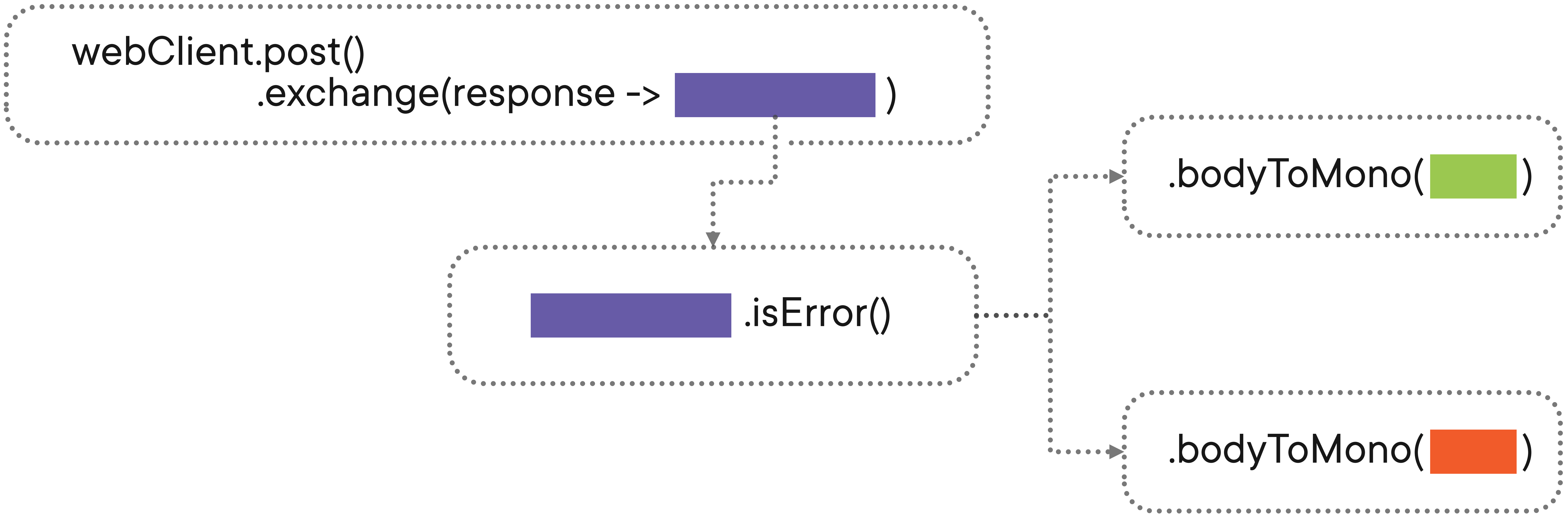
4xxResponse	`.onStatus(HttpStatus::is4xxClientError, response -> 🟧 )`
5xxResponse	`.onStatus(HttpStatus::is5xxServerError, response -> 🟪 )`
2xxResponse	`.bodyToMono(2xxResponse.class)`

Error Handling with OnStatus

```
response.createException()
            .flatMap(webClientResponseException -> Mono.error(  ))
```

```
response.bodyToMono(ErrorResponse.class)
            .flatMap(errorResponse -> Mono.error(  ))
```

Error Handling with Exchange

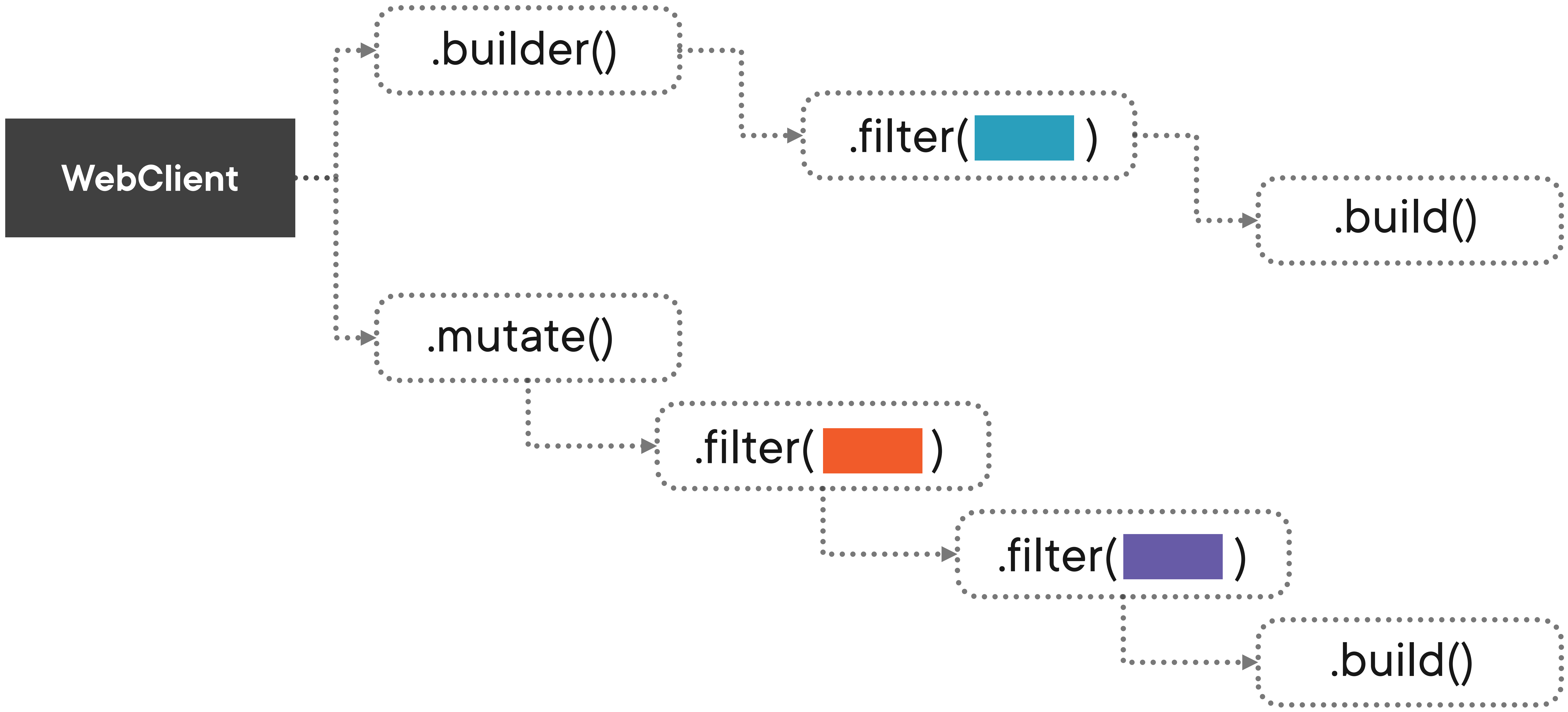


Demo

Error handling with exchange

Filters

WebClient Filters



WebClient Filters

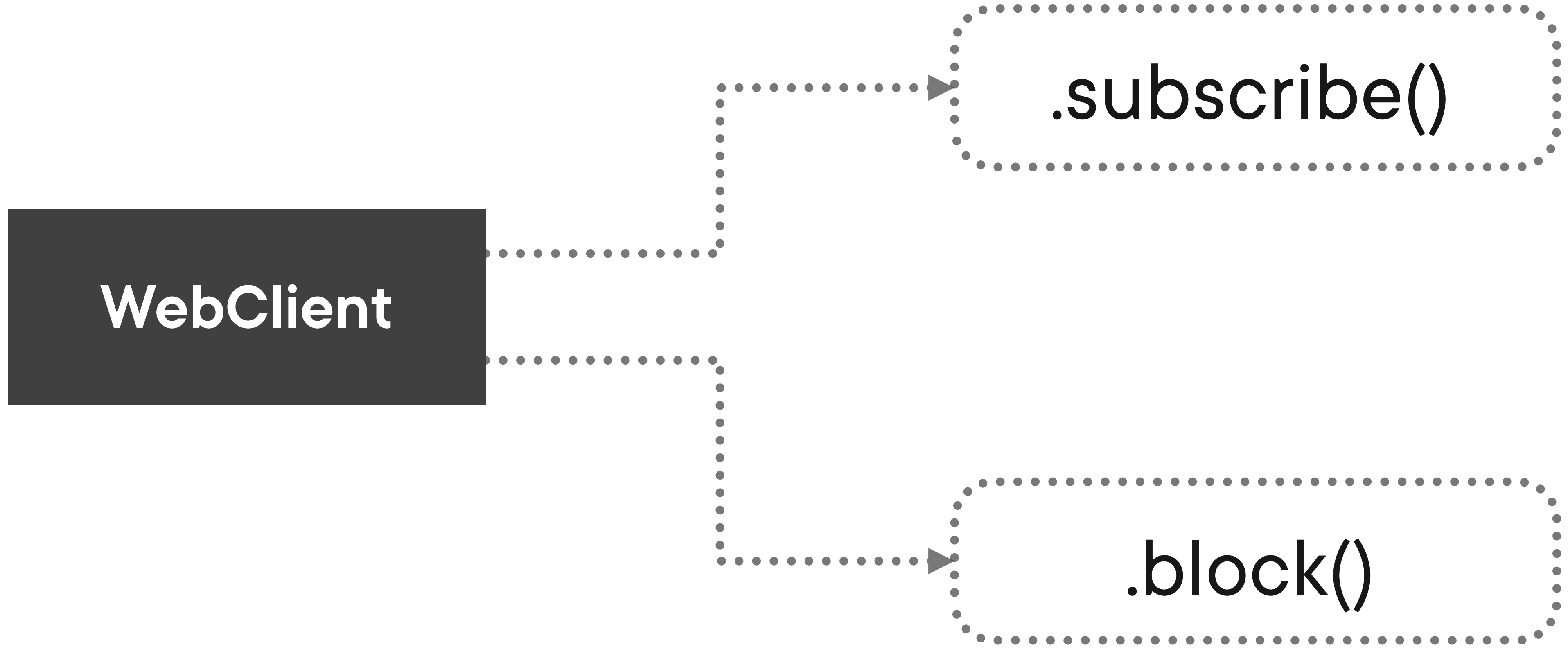
Lambda expression

(request, next) -> ...

Built-in exchange filter functions

Custom exchange filter functions

Synchronous Calls



Demo

Create custom filter

Up Next:
Testing Reactive Streams