REST APIs - REST Web Services

You will learn how to …

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- Create REST APIs / Web Services with Spring

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- Discuss REST concepts, JSON and HTTP messaging

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- Create REST APIs / Web Services with Spring
- Discuss REST concepts, JSON and HTTP messaging
- Install REST client tool: Postman
- Develop REST APIs / Web Services with **@RestController**
- Build a CRUD interface to the database with Spring REST

Practical Results

Practical Results

- Introduction to Spring REST development

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- Not an A to Z reference … for that you can see Spring Reference Manual

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https://projects.spring.io/spring-framework/

Business Problem

Business Problem

- Build a client app that provides the weather report for a city

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- Build a client app that provides the weather report for a city
- Need to get weather data from an external service

Application Architecture

Application Architecture

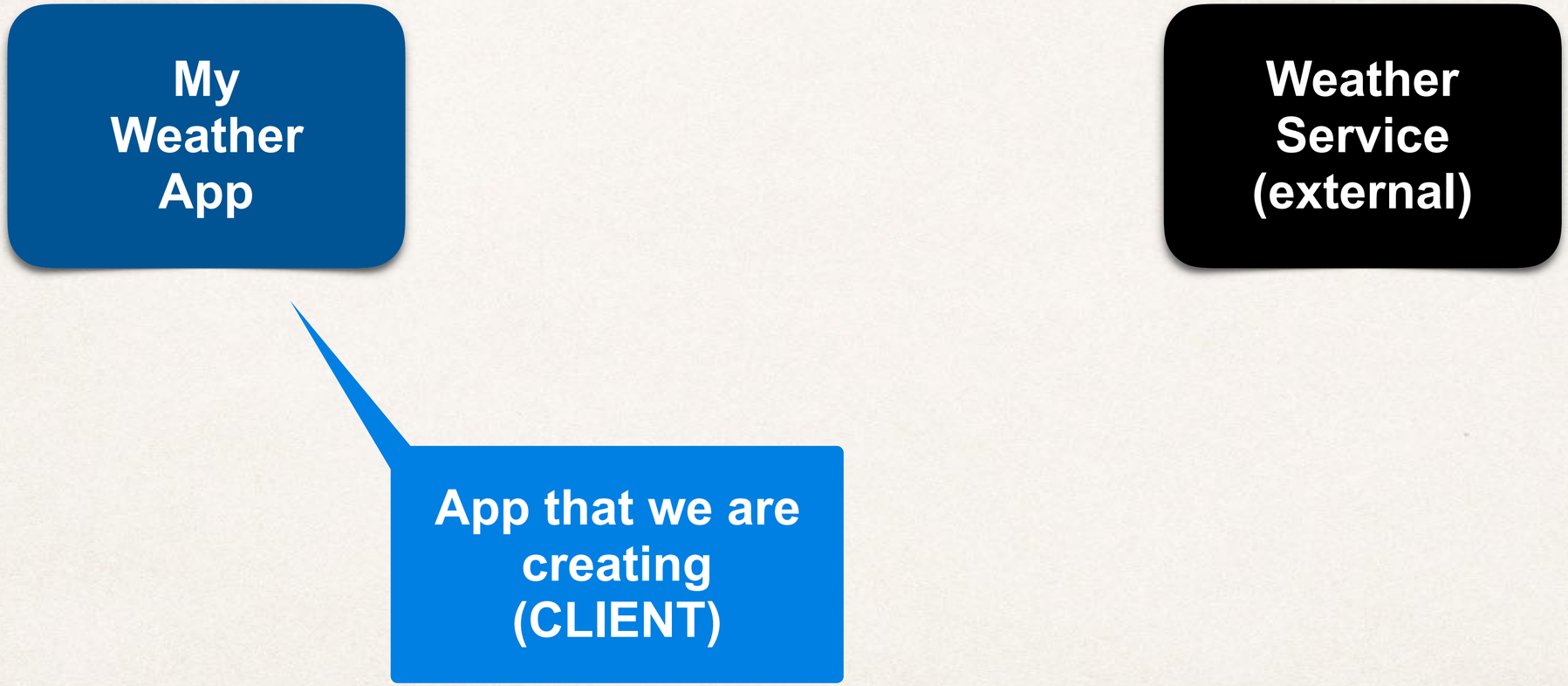
My
Weather
App

Application Architecture

My
Weather
App

App that we are
creating
(CLIENT)

Application Architecture



Application Architecture

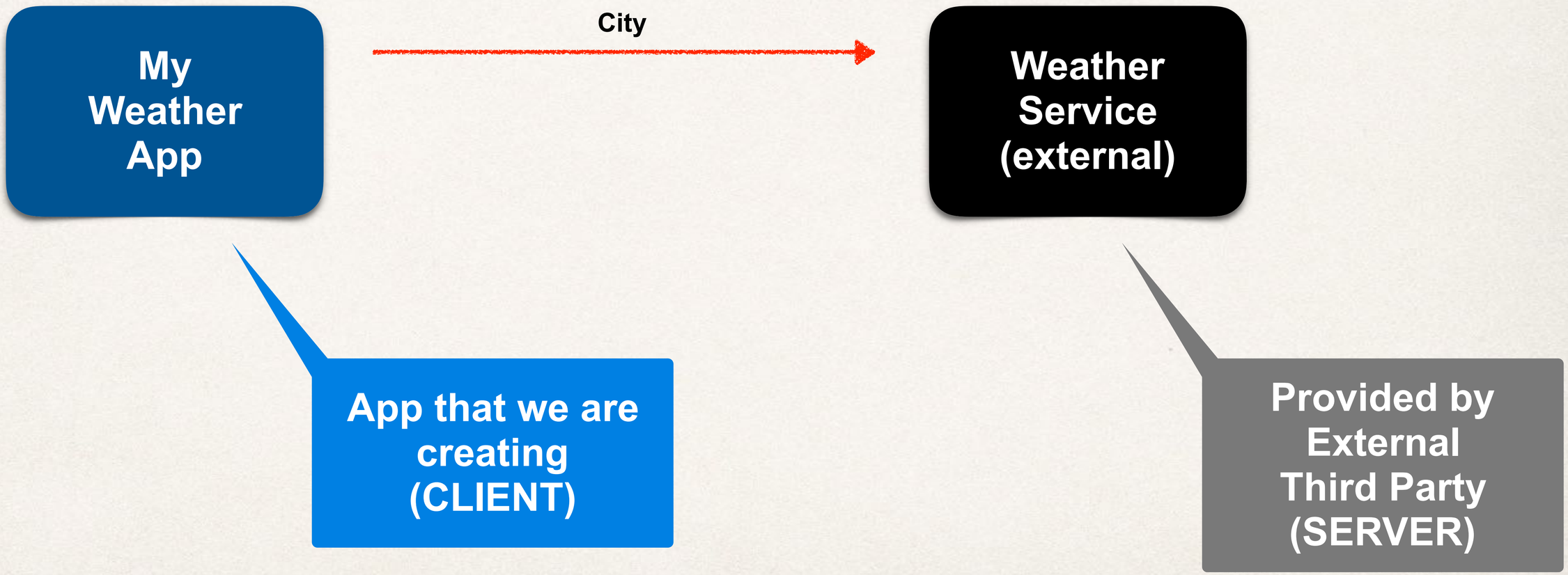
My Weather App

App that we are creating (CLIENT)

Weather Service (external)

Provided by External Third Party (SERVER)

Application Architecture



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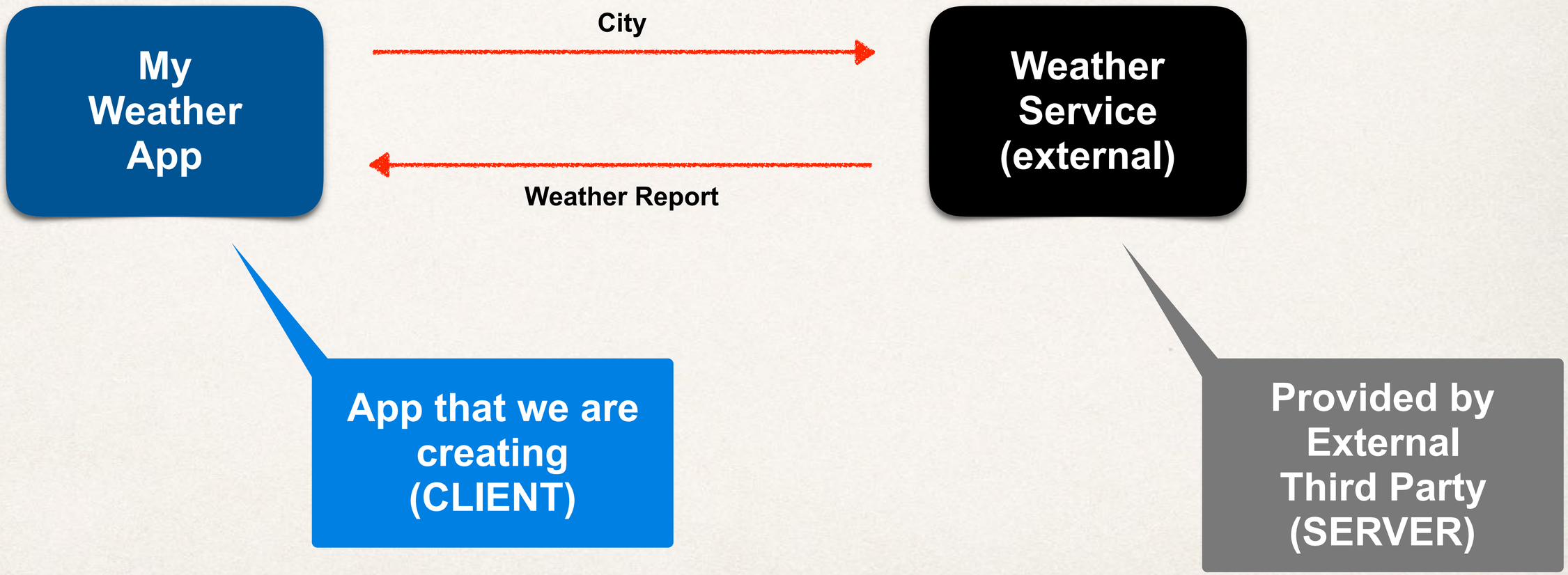
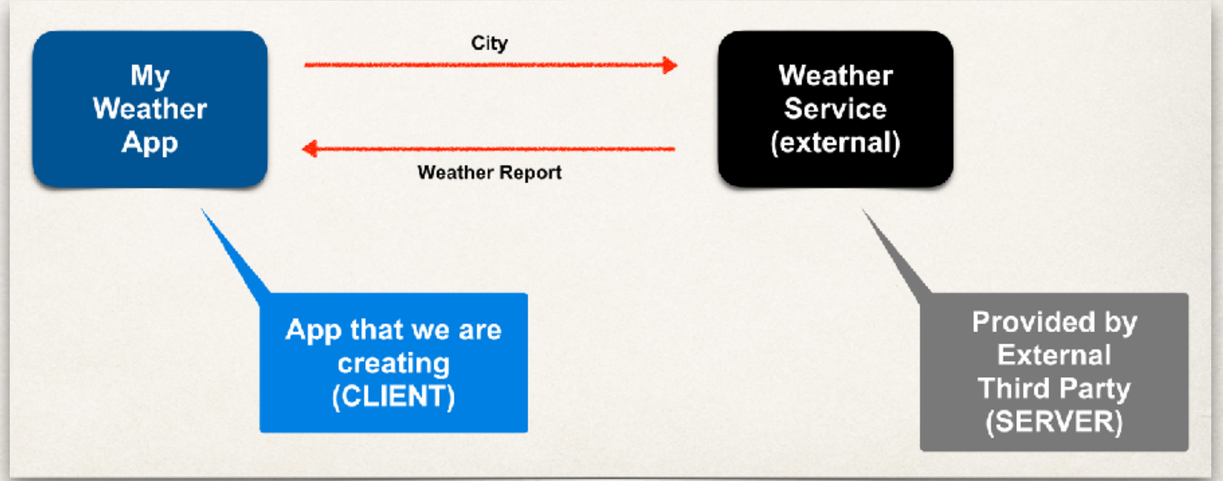


Questions


My Weather App
City
Weather Report
Weather Service (external)
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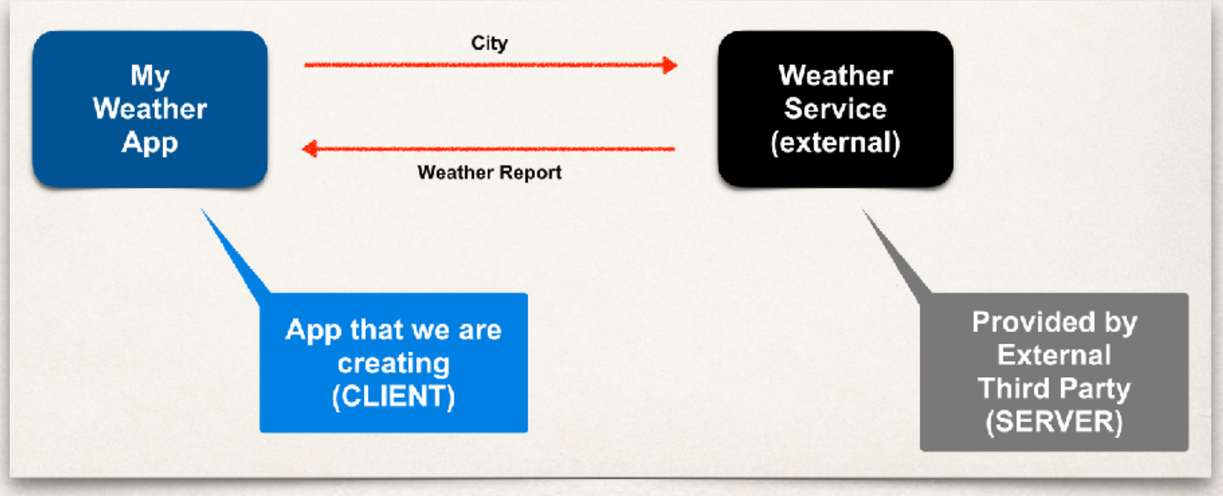
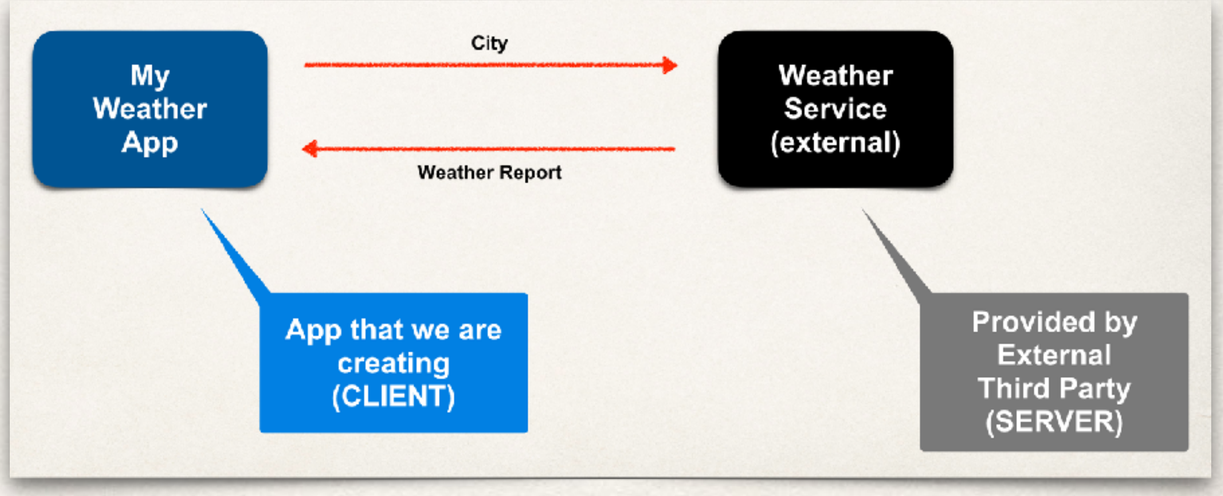


Questions

- How will we connect to the Weather Service?

- What programming language do we use?



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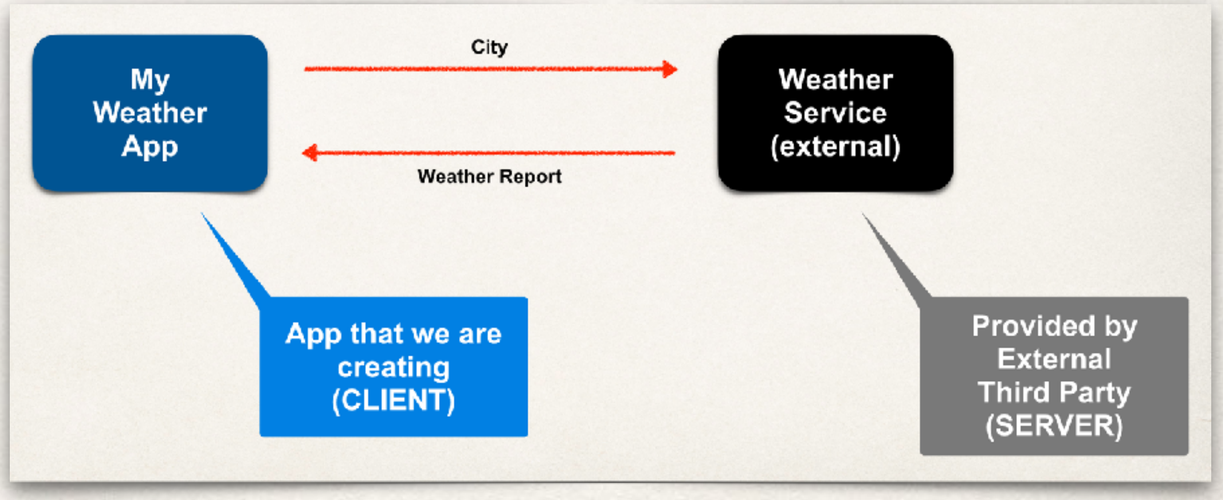
- What is the data format?



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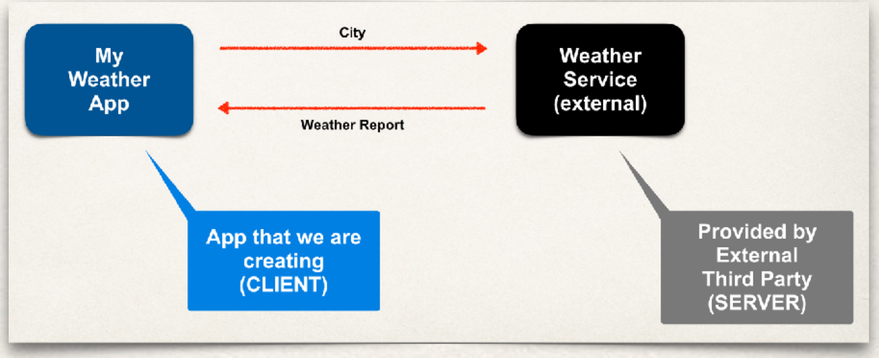
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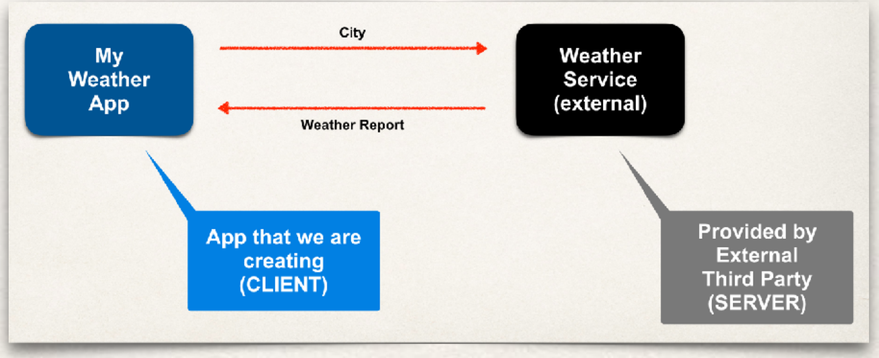

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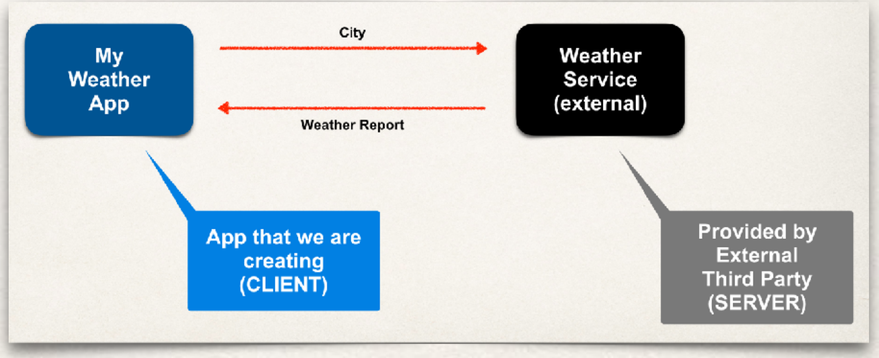

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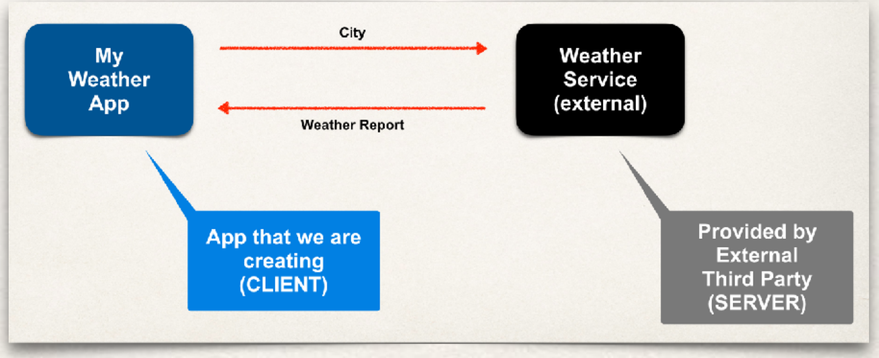

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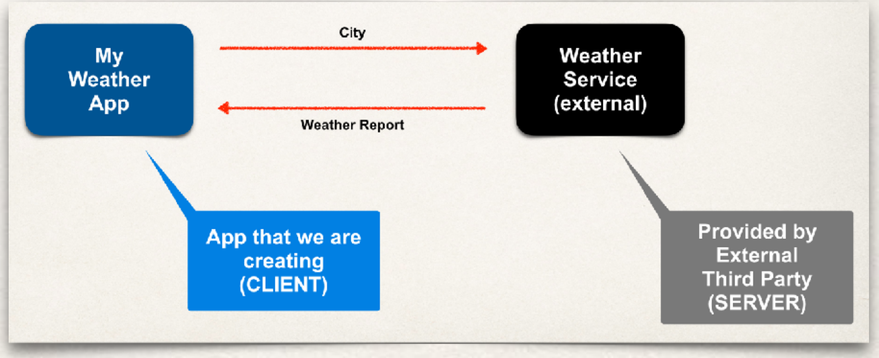
  - Lightweight approach for communicating between applications



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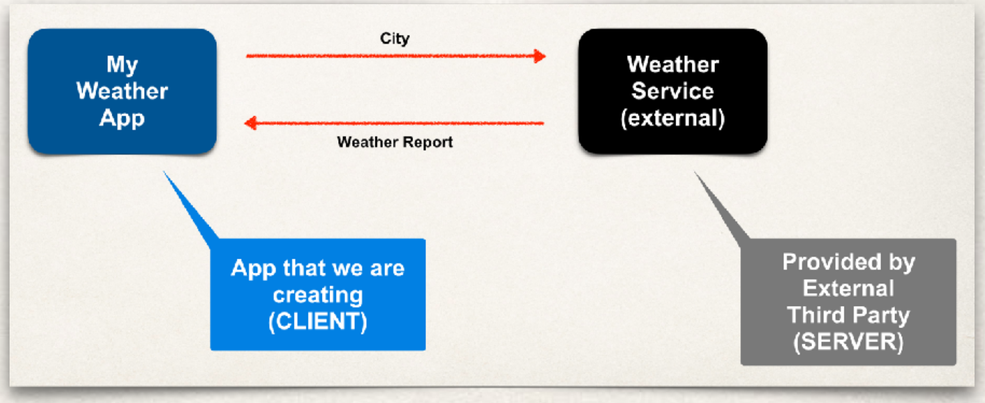
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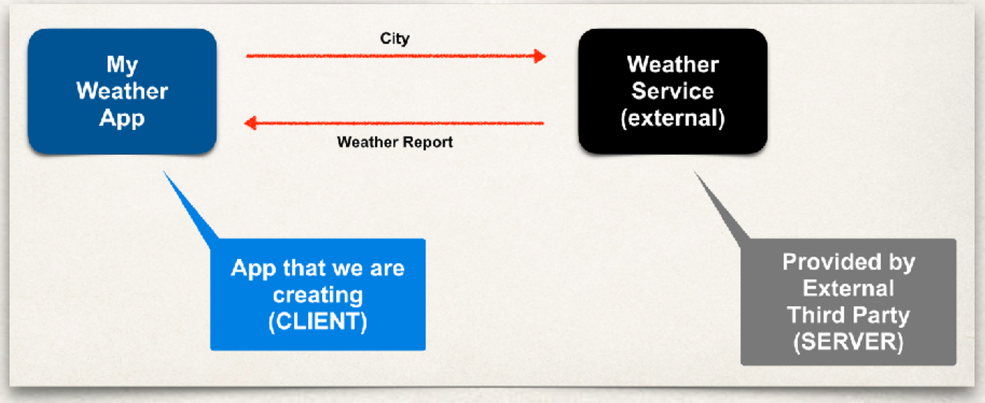

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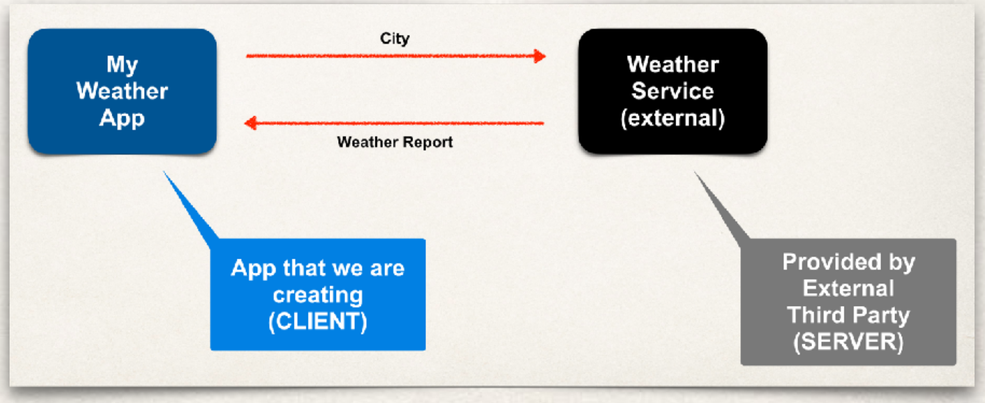

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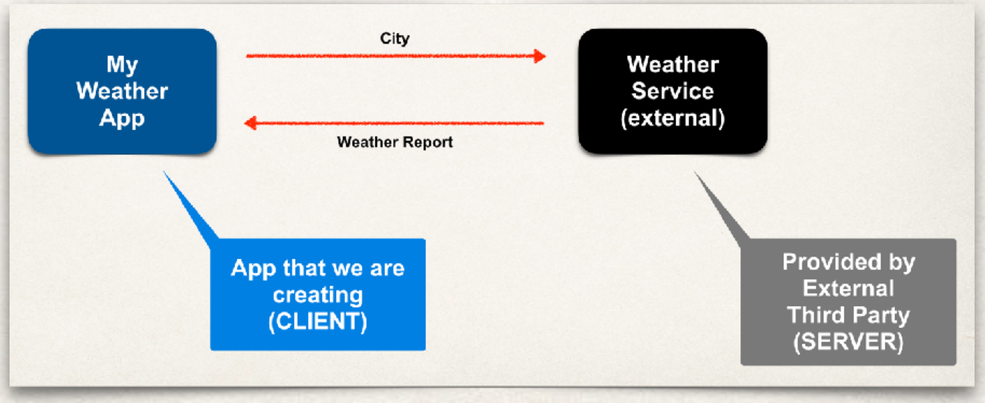

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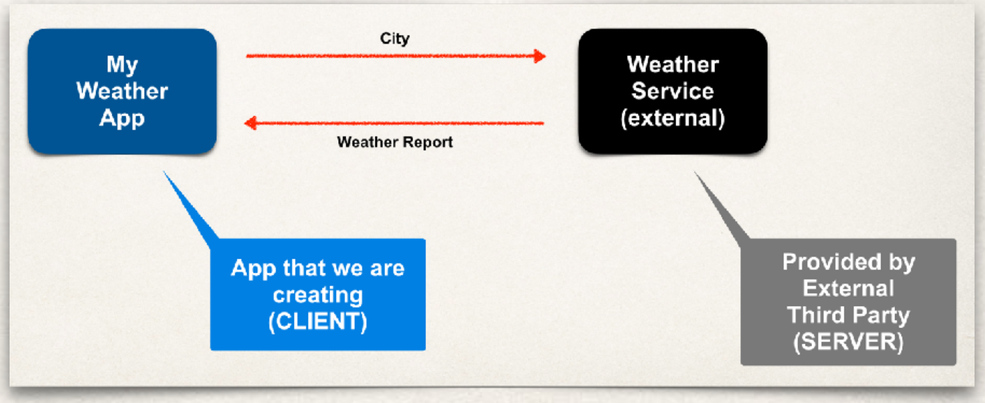

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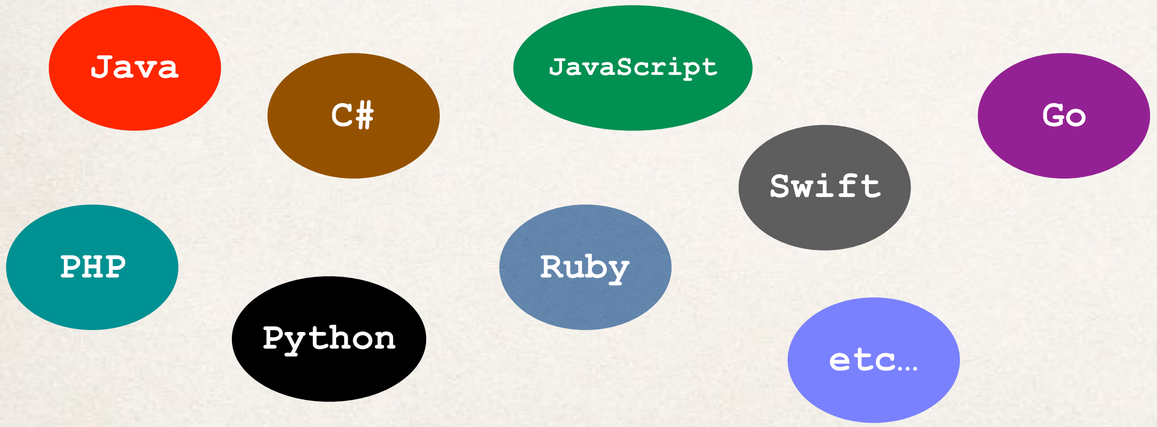

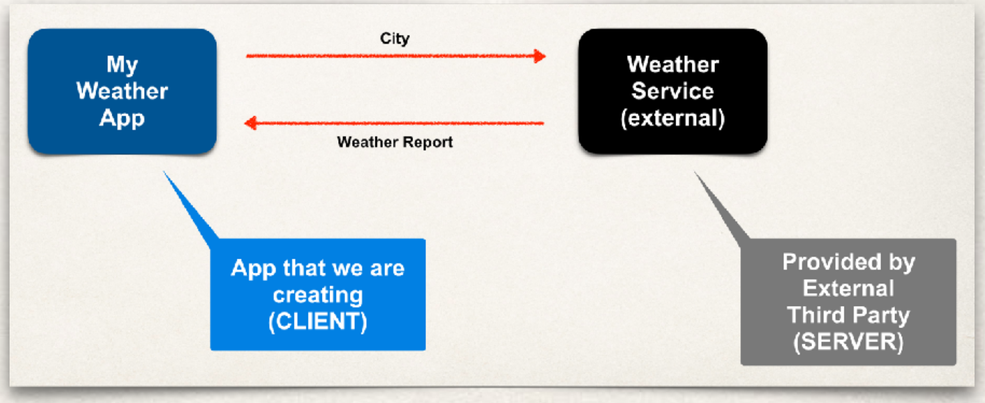

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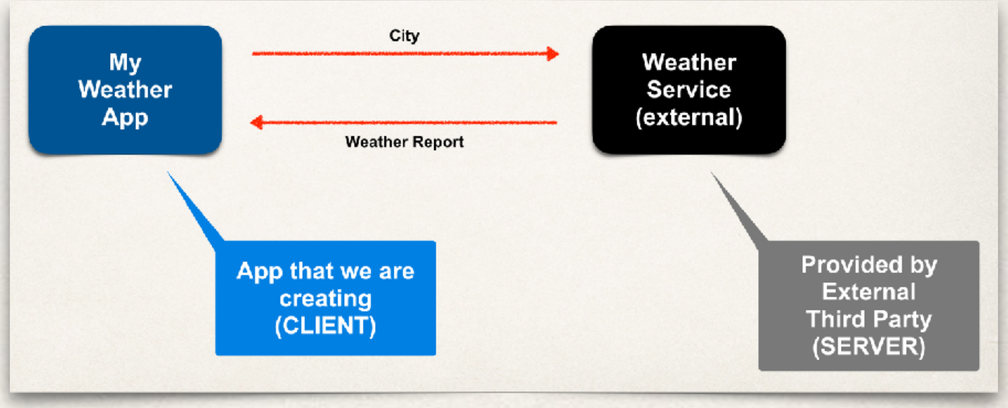
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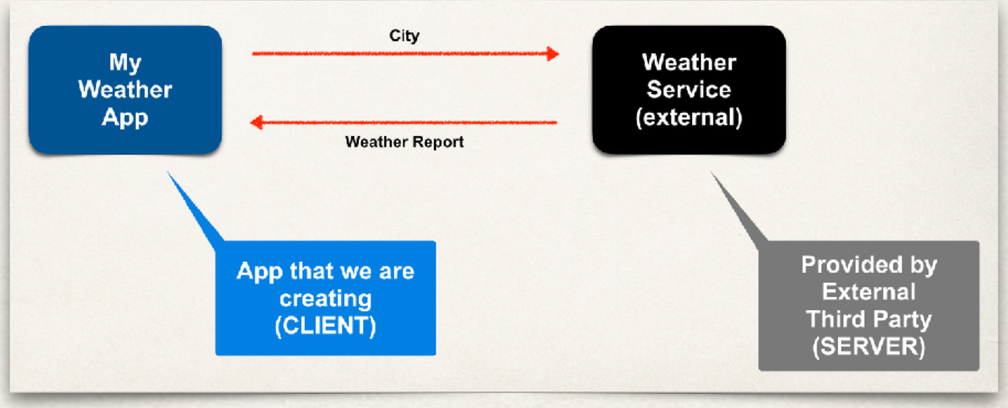

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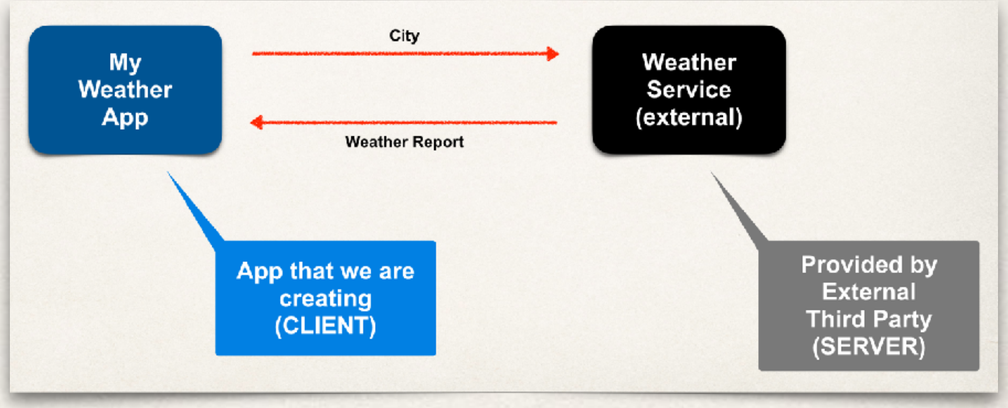

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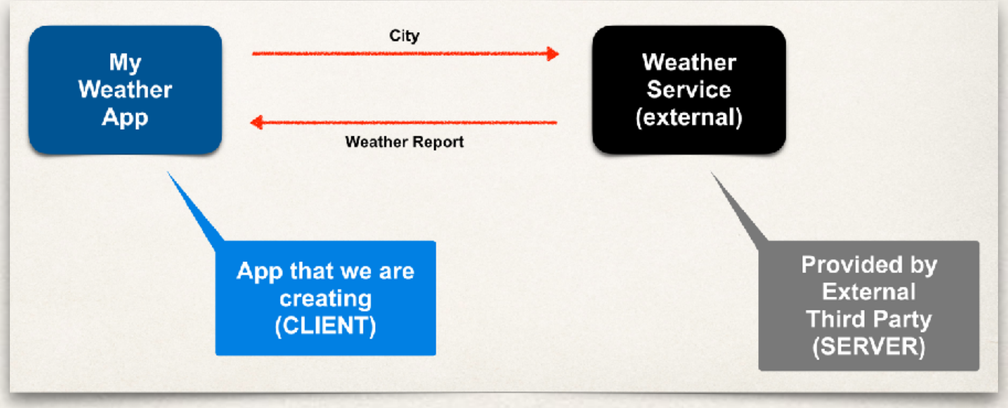

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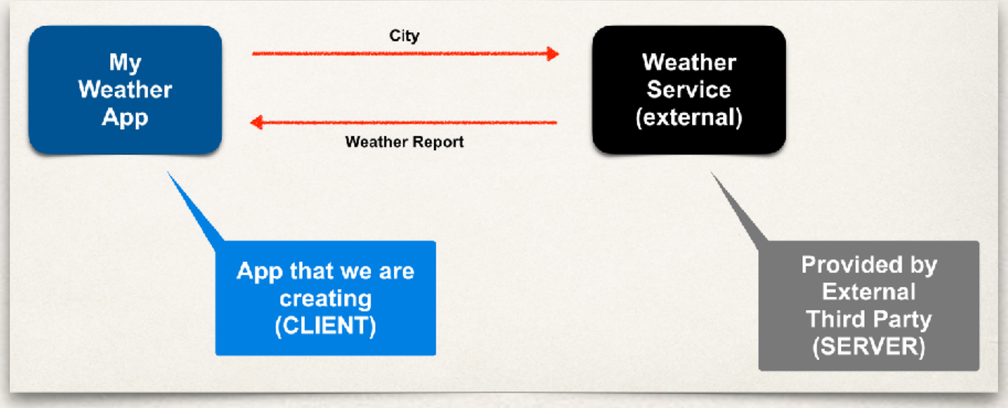

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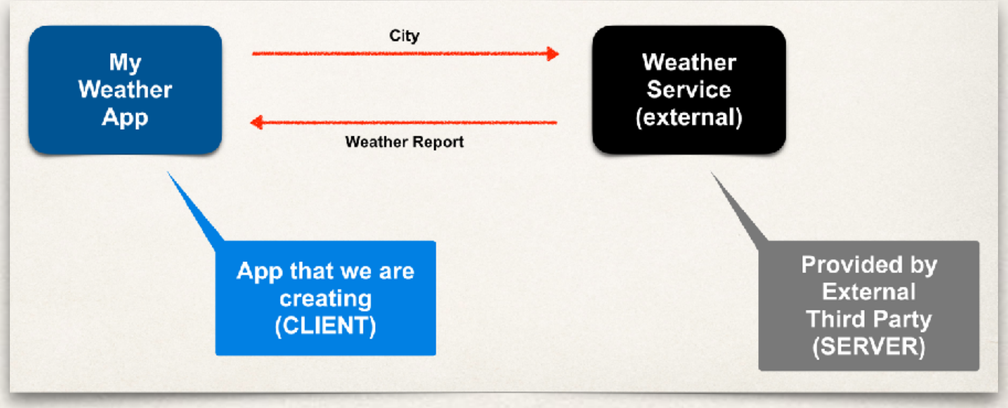
    - JavaScript Object Notation



Possible Solution

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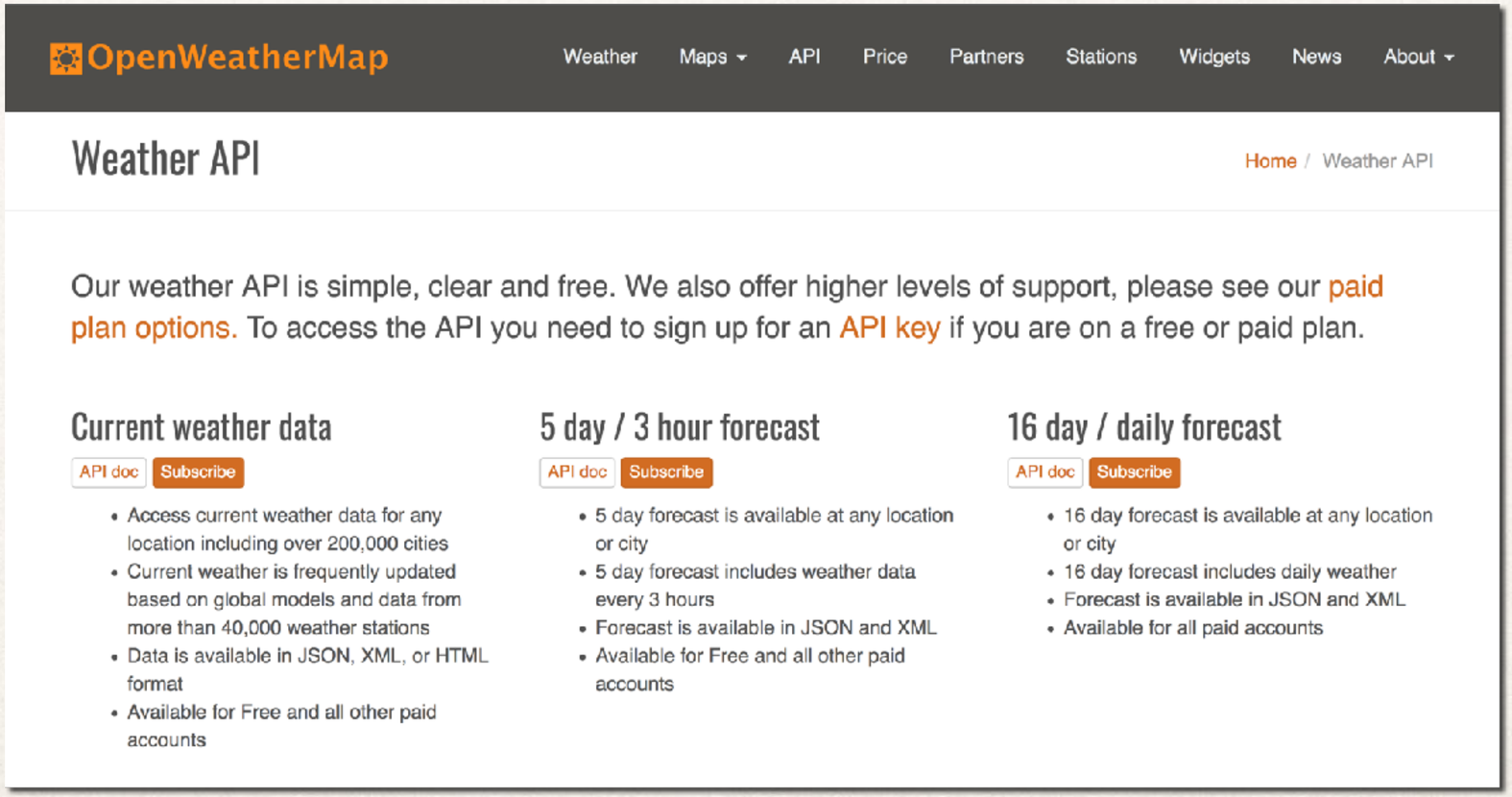

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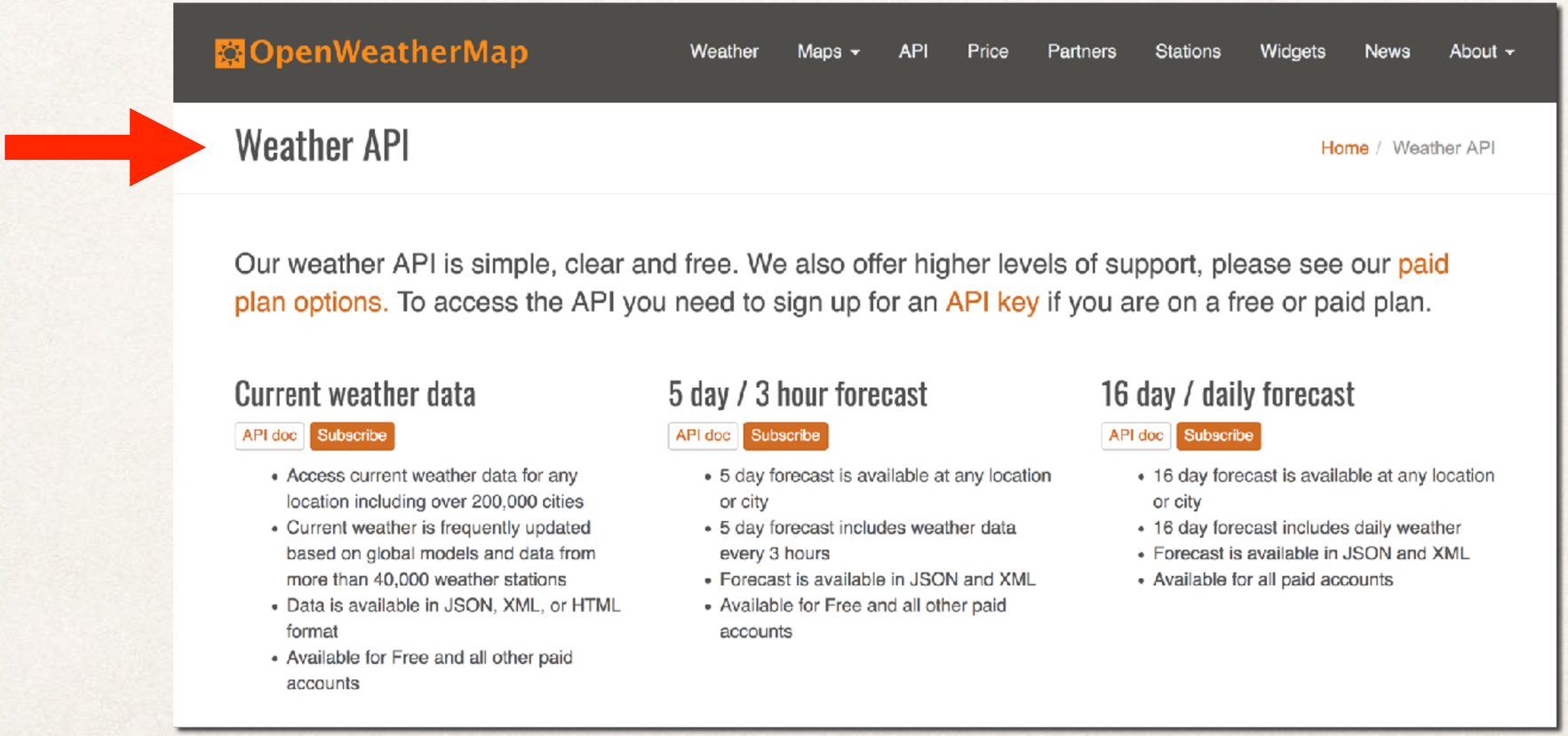

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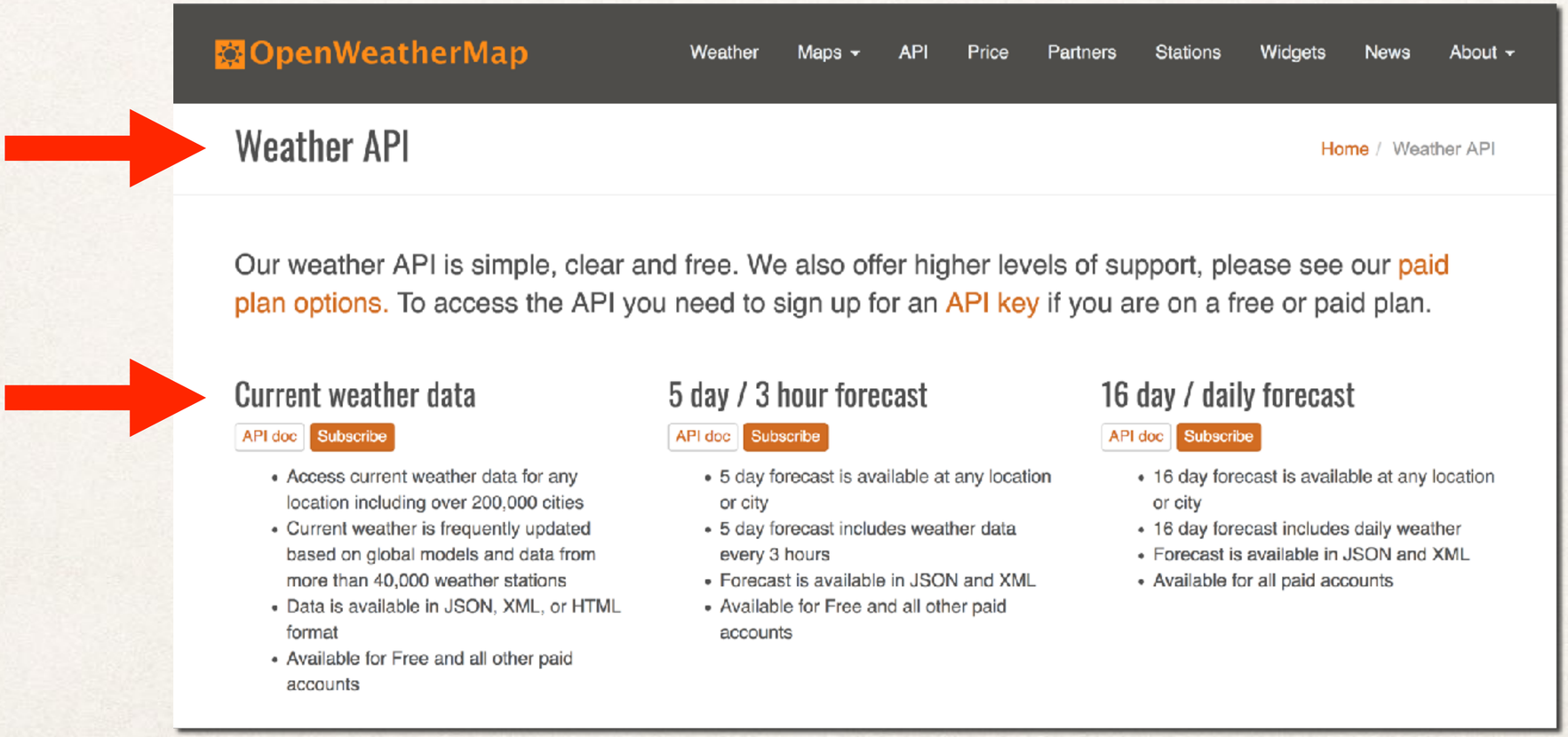
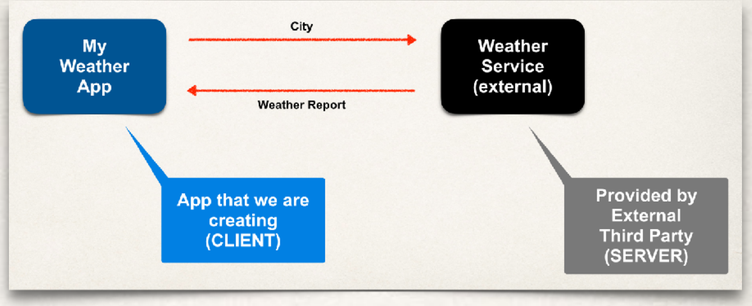


Call Weather Service



- The API documentation gives us the following:
  - Pass in the city name

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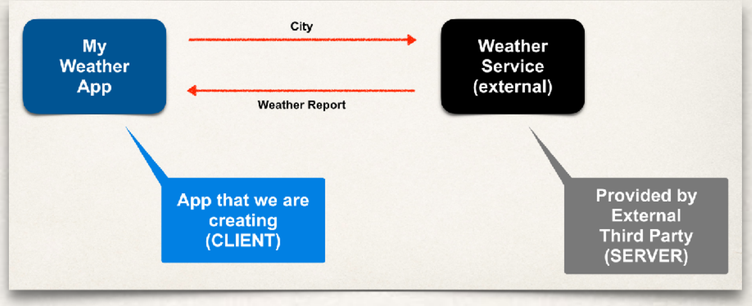

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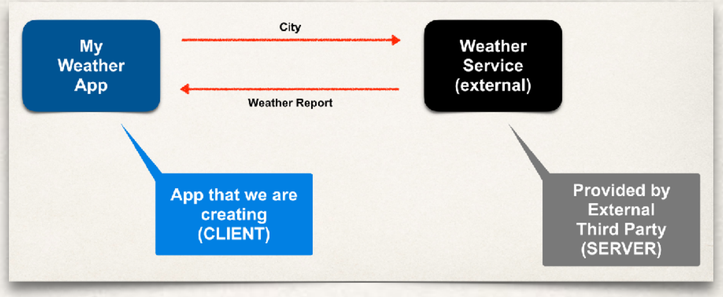
```
api.openweathermap.org/data/2.5/weather?q={city name}

OR

api.openweathermap.org/data/2.5/weather?q={city name},{country code}
```

Response - Weather Report



- The Weather Service responds with JSON

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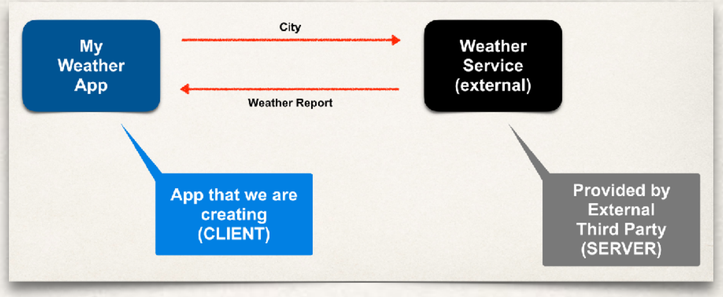


- The Weather Service responds with JSON

```
{
  ...
  "temp": 14,
  "temp_min": 11,
  "temp_max": 17,
  "humidity": 81,
  "name": "London",
  ...
}
```

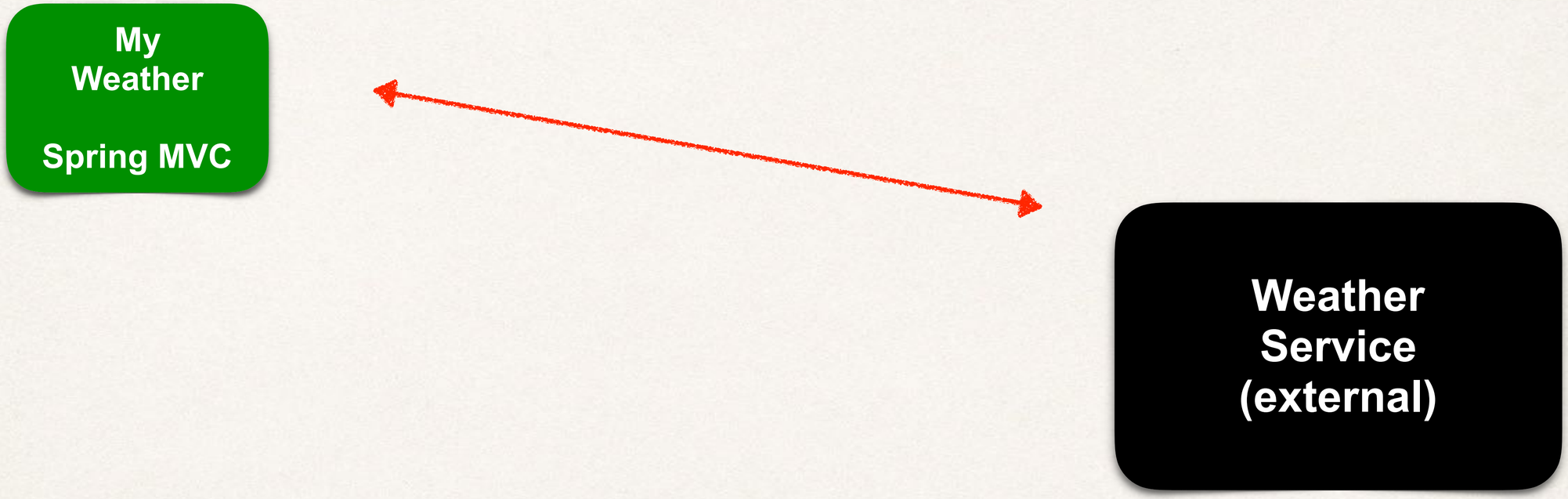
Condensed version

Multiple Client Apps

Multiple Client Apps

Weather
Service
(external)

Multiple Client Apps



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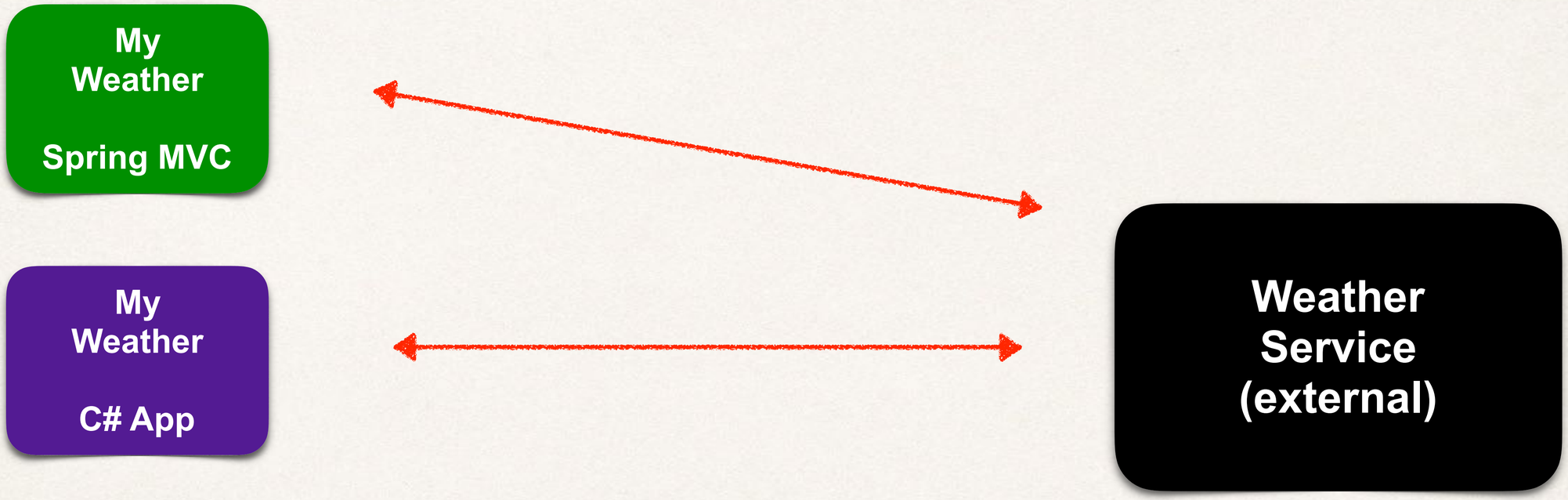

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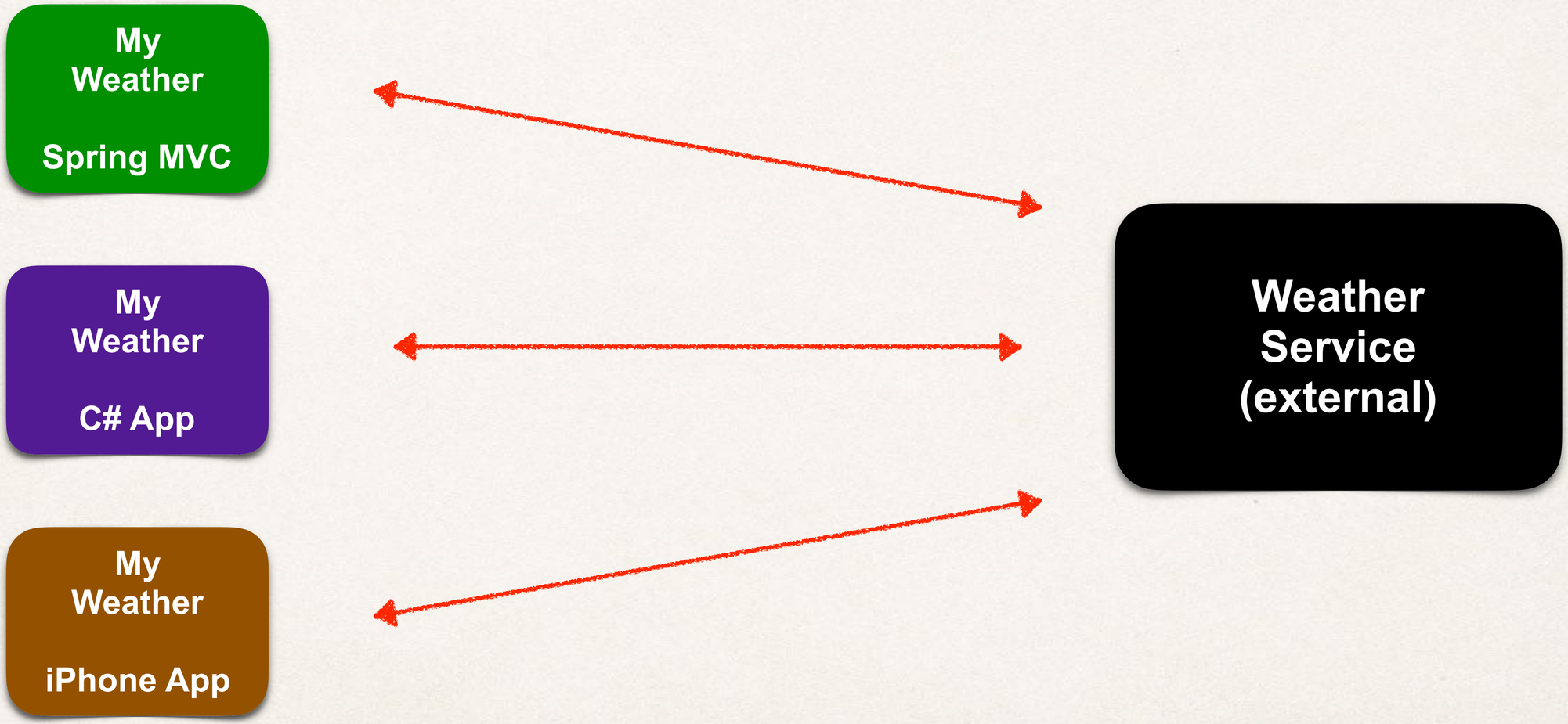
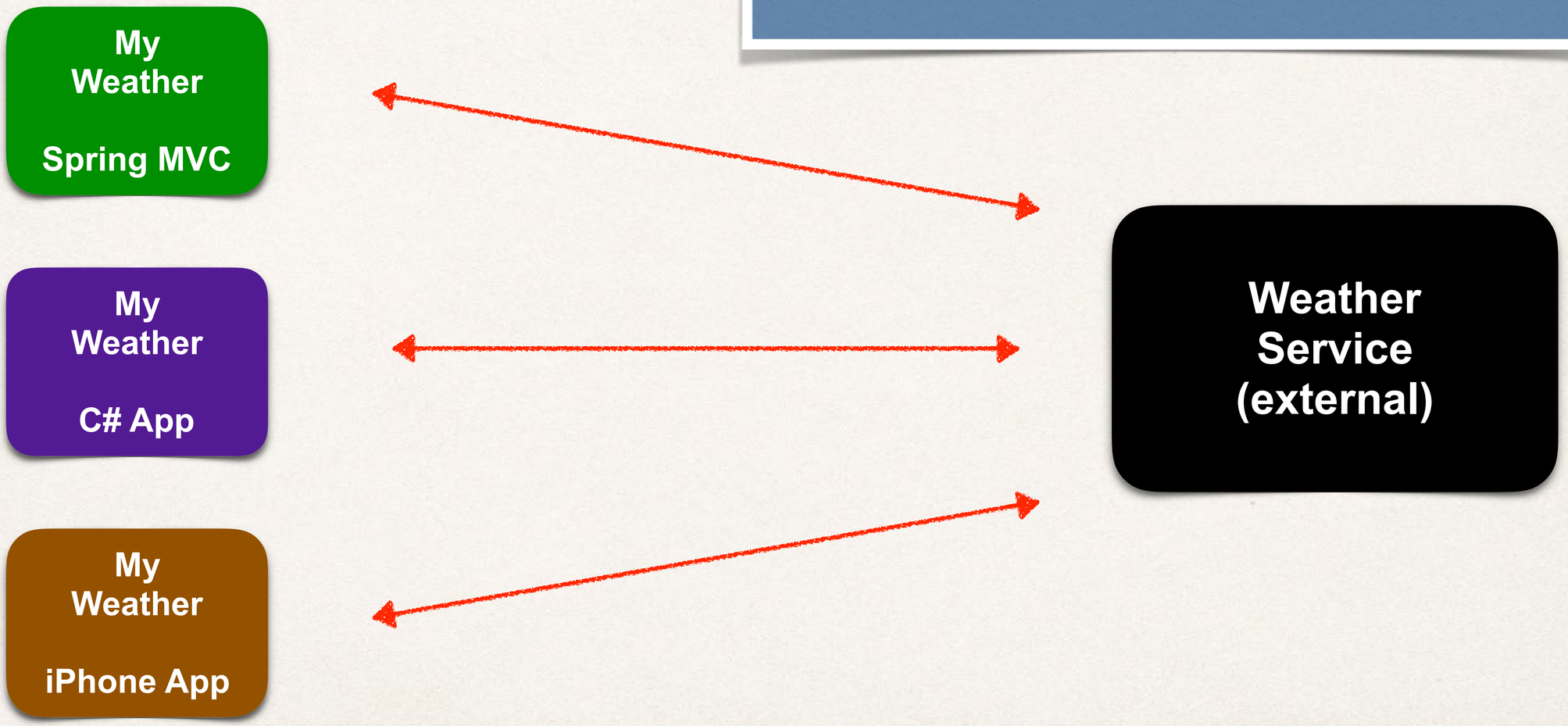


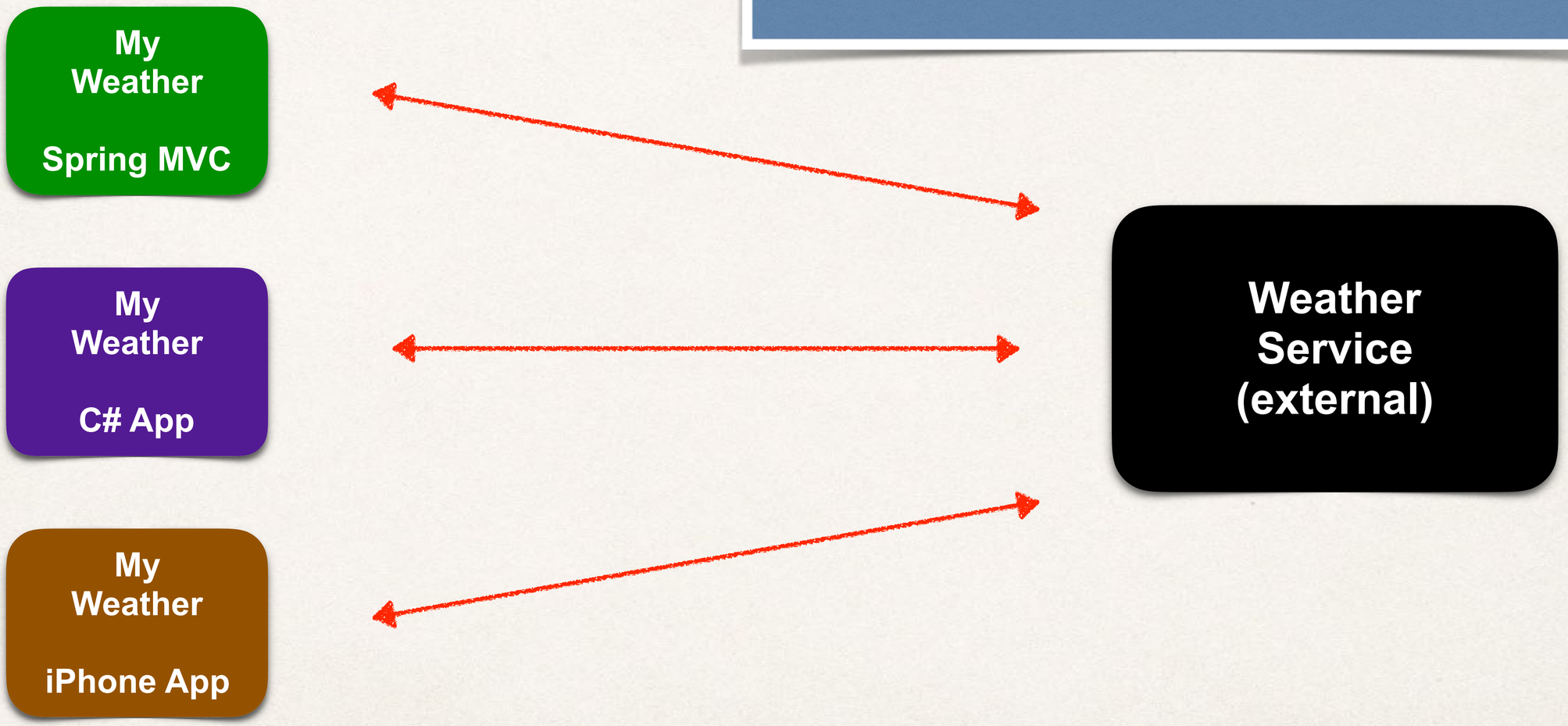
Multiple Client Apps

Remember:



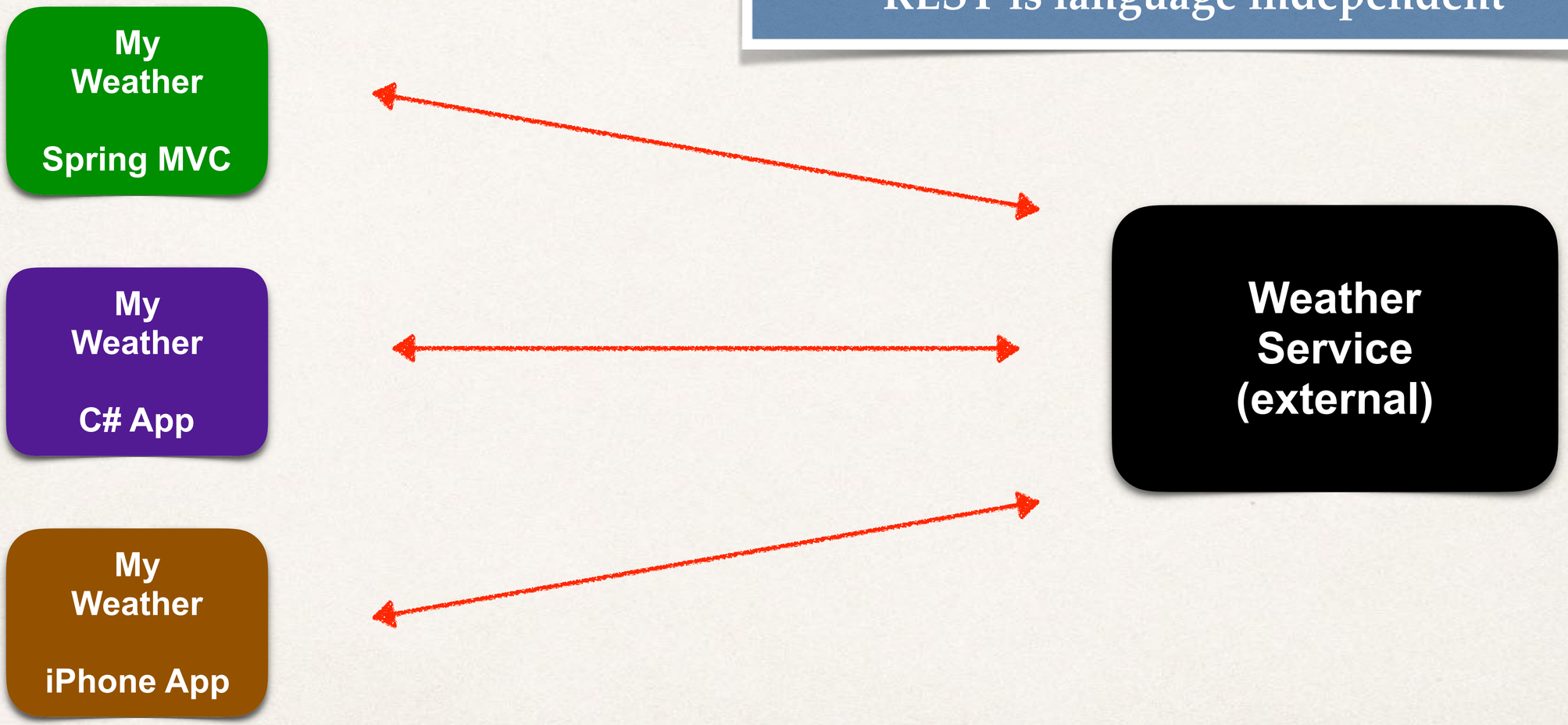
Multiple Client Apps

Remember:
REST calls can be made over HTTP



Multiple Client Apps

Remember:
REST calls can be made over HTTP
REST is language independent



Currency Converter App

Currency Converter App

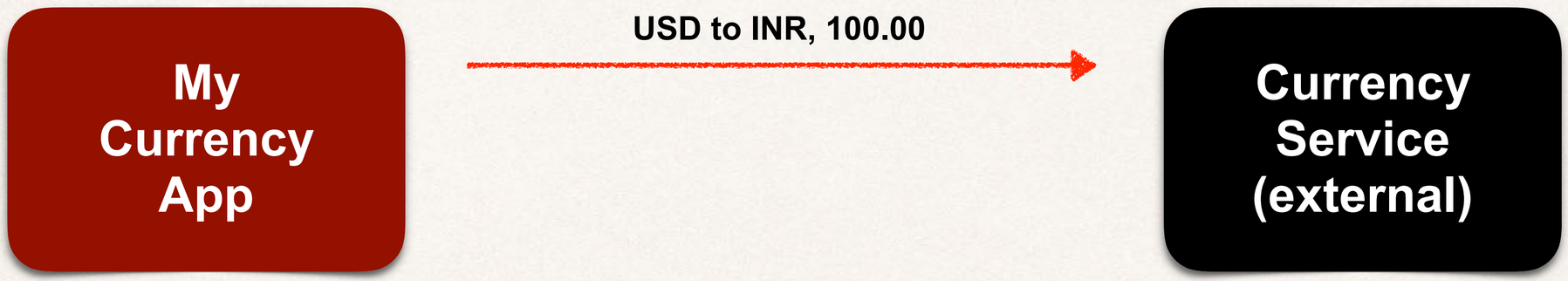
My
Currency
App

Currency Converter App

My Currency App

Currency Service (external)

Currency Converter App



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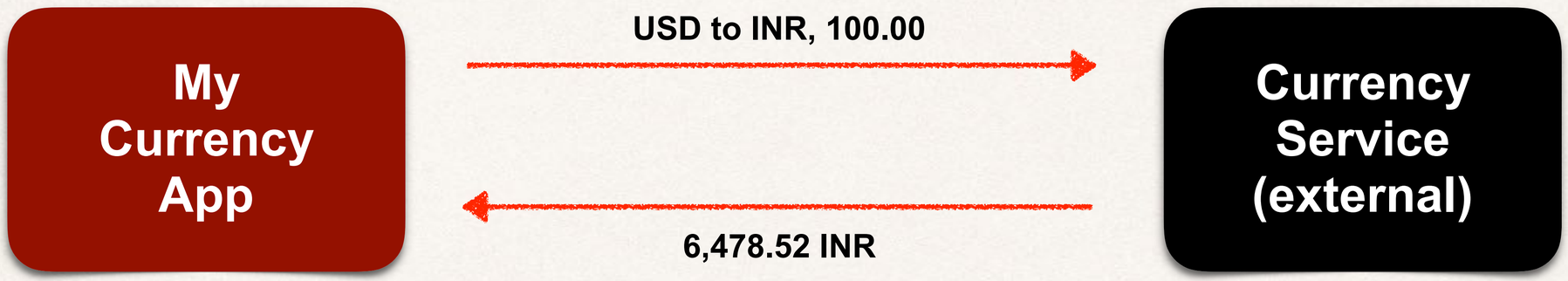

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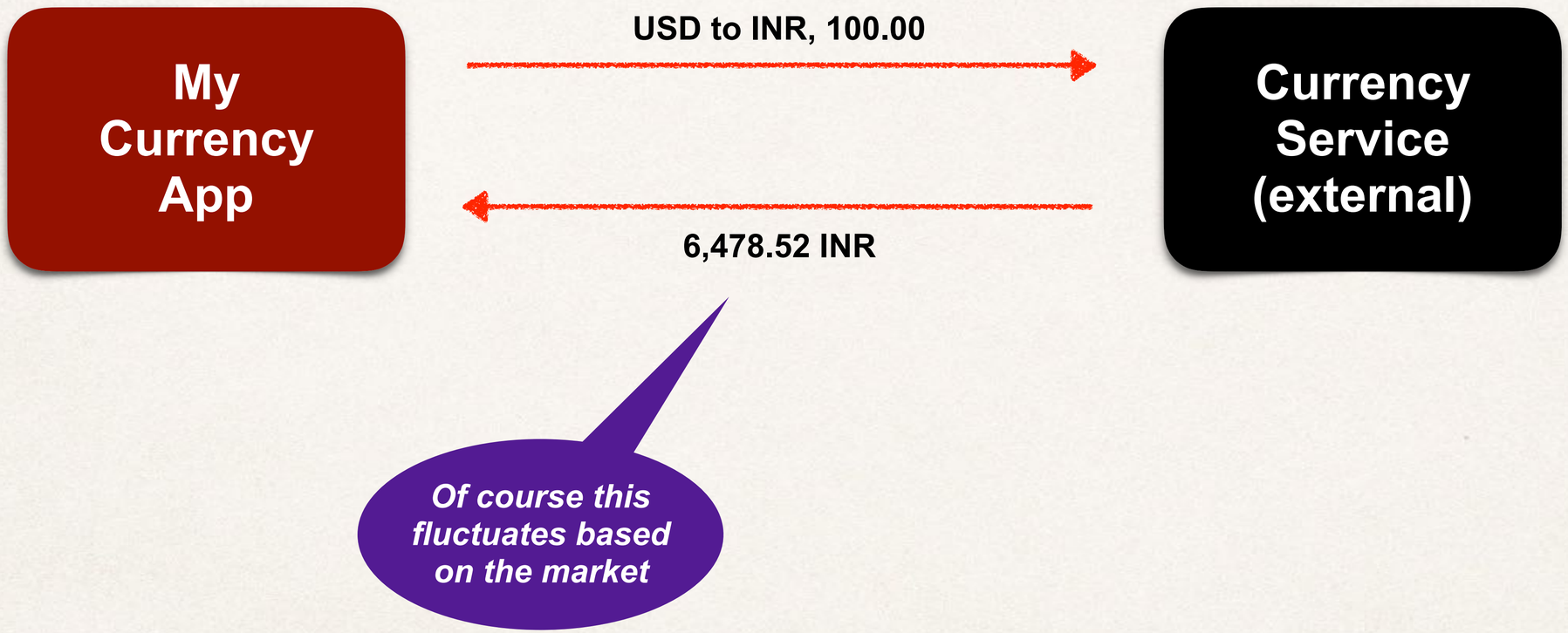


Movie Tickets App

Movie Tickets App

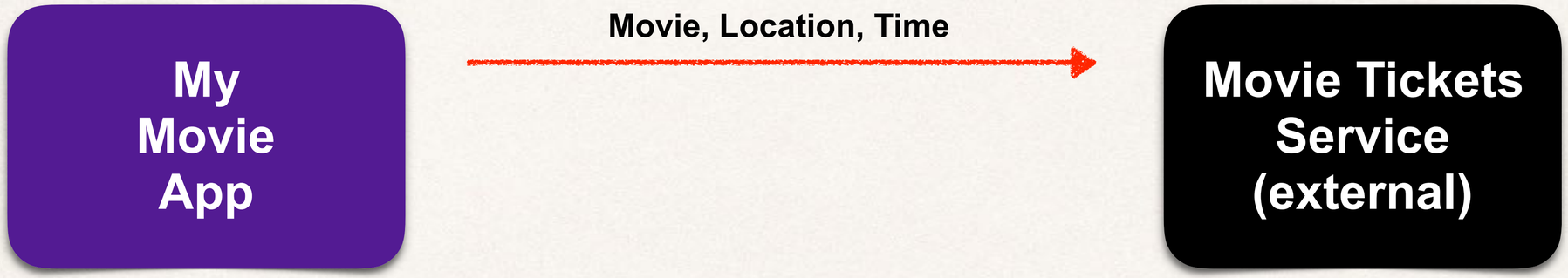
My
Movie
App

Movie Tickets App

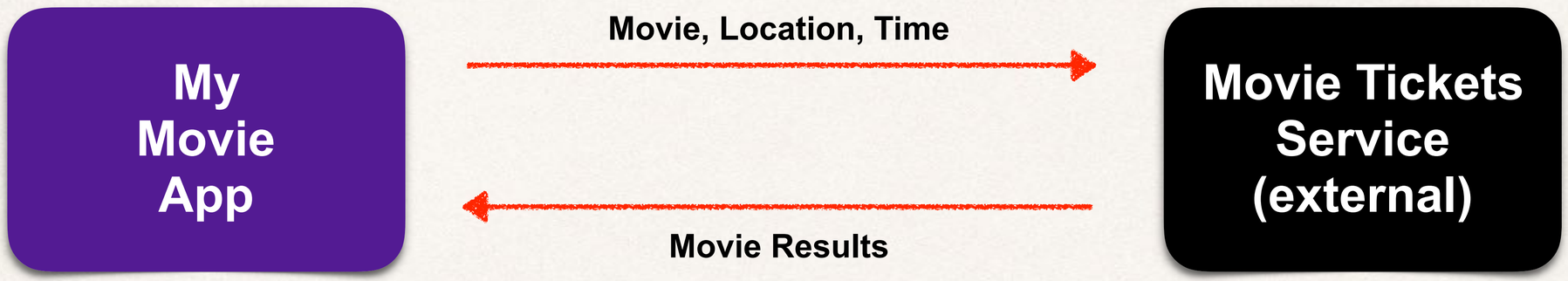
My
Movie
App

Movie Tickets
Service
(external)

Movie Tickets App



Movie Tickets App



Customer Relationship Manager (CRM) App

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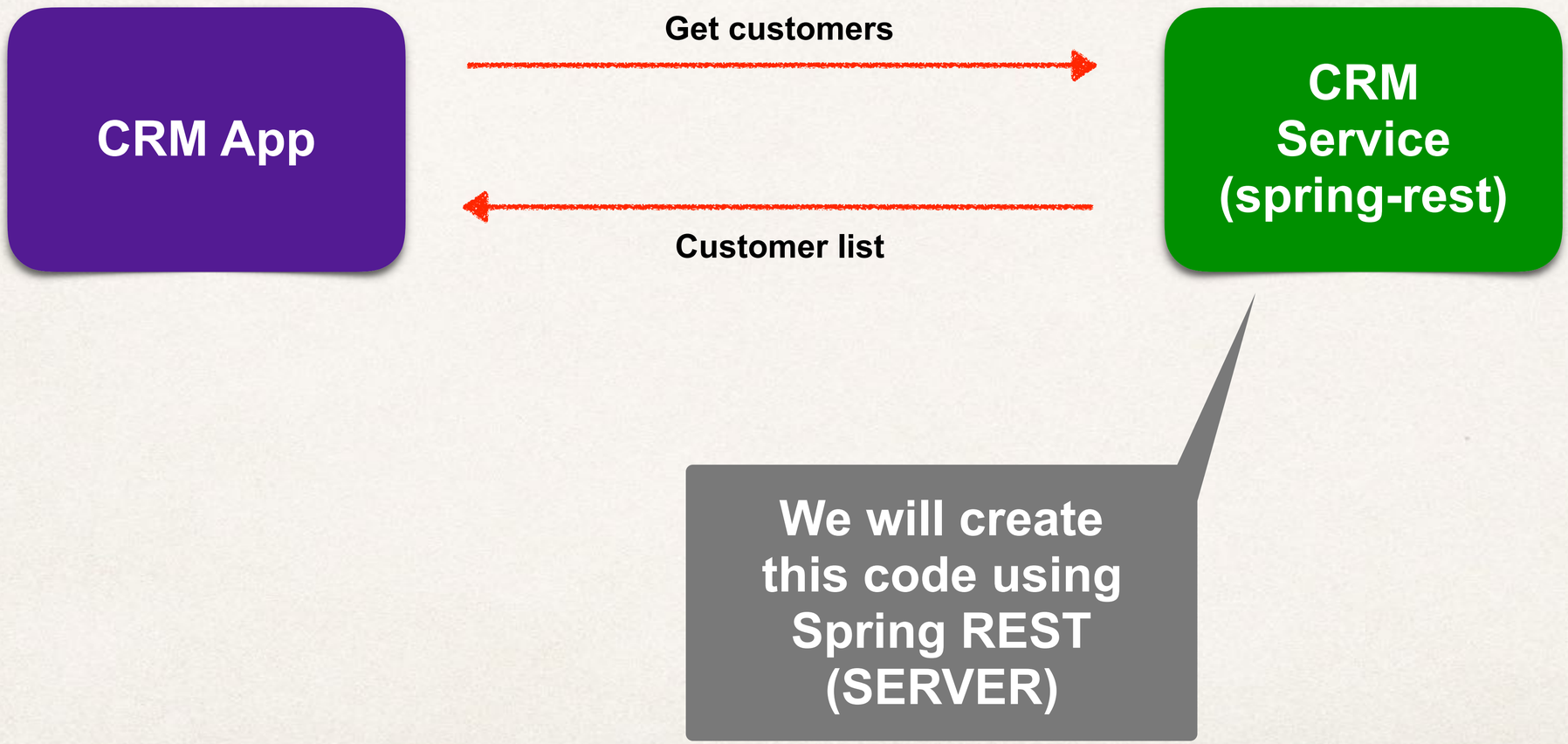

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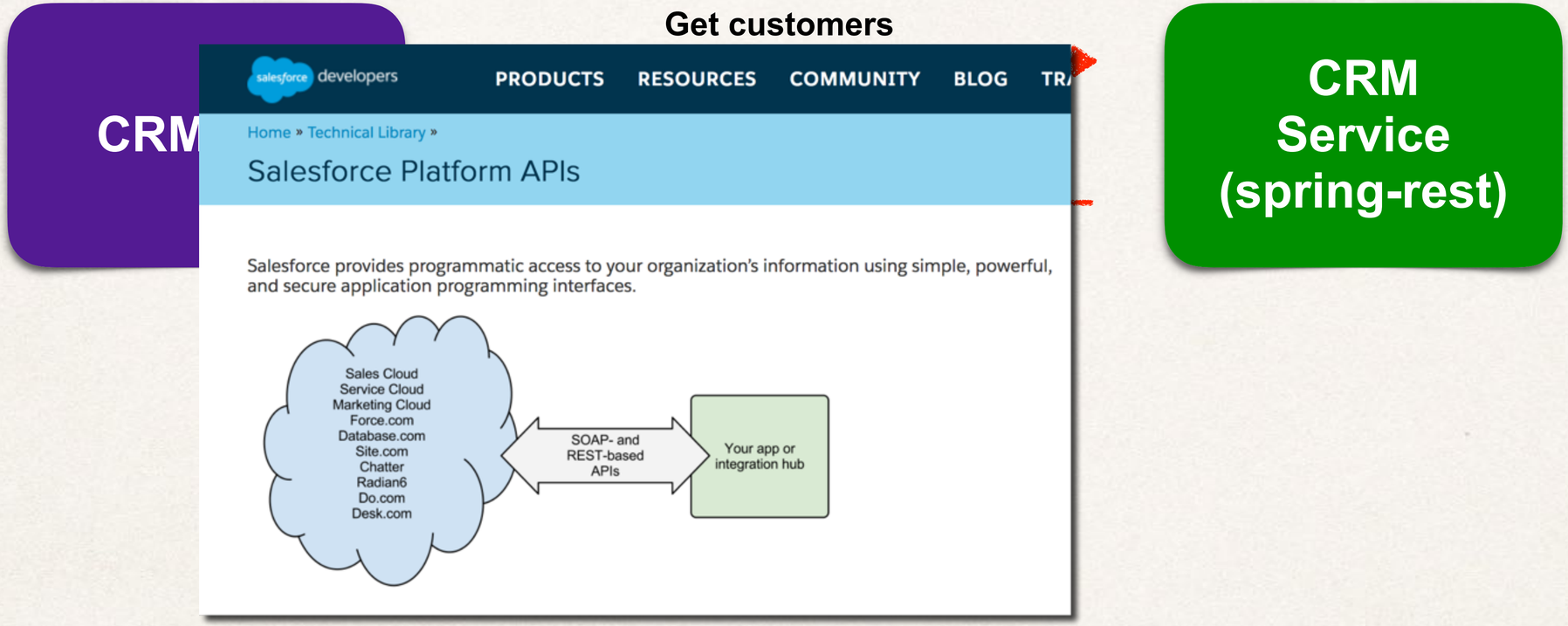
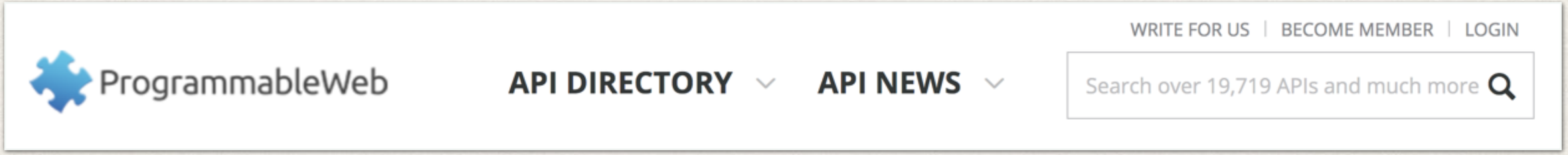


Where to Find REST APIs

www.programmableweb.com



What do we call it?

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REST API

RESTful API

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