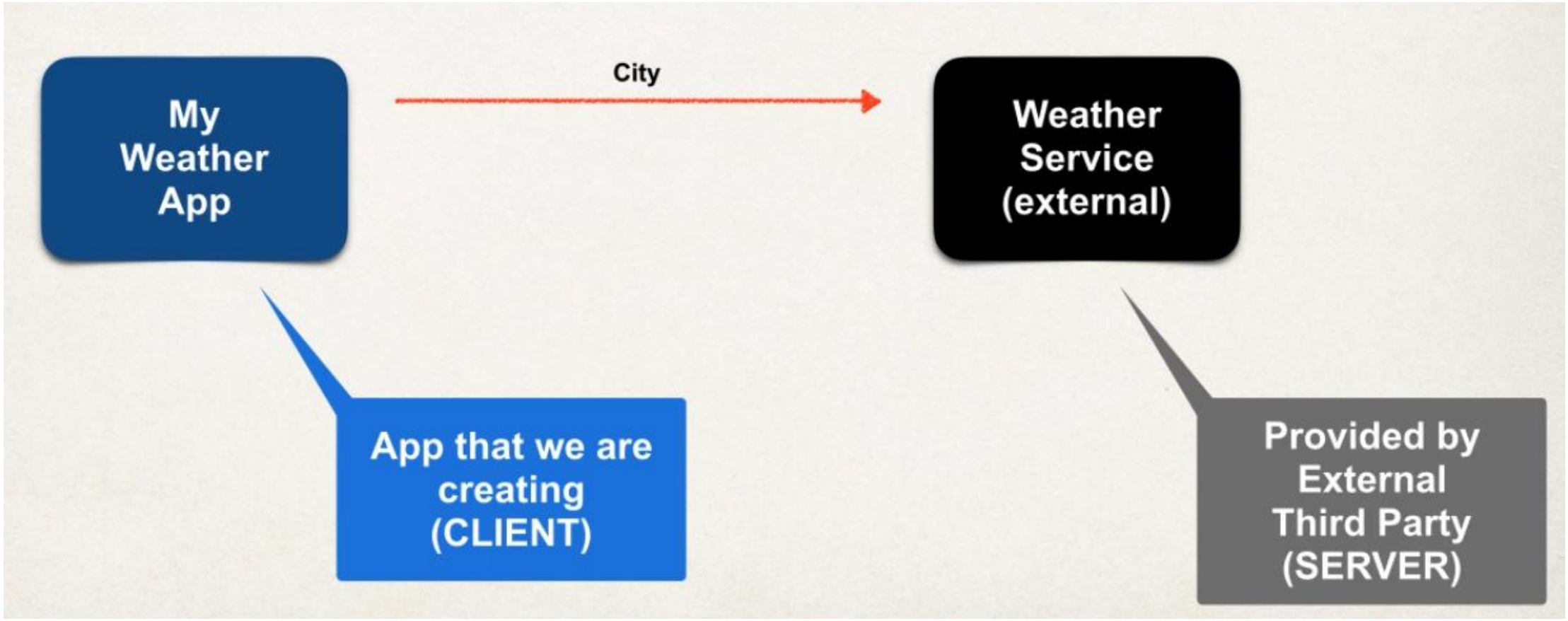
Spring Rest Web Services

Why we need Rest Web Services?

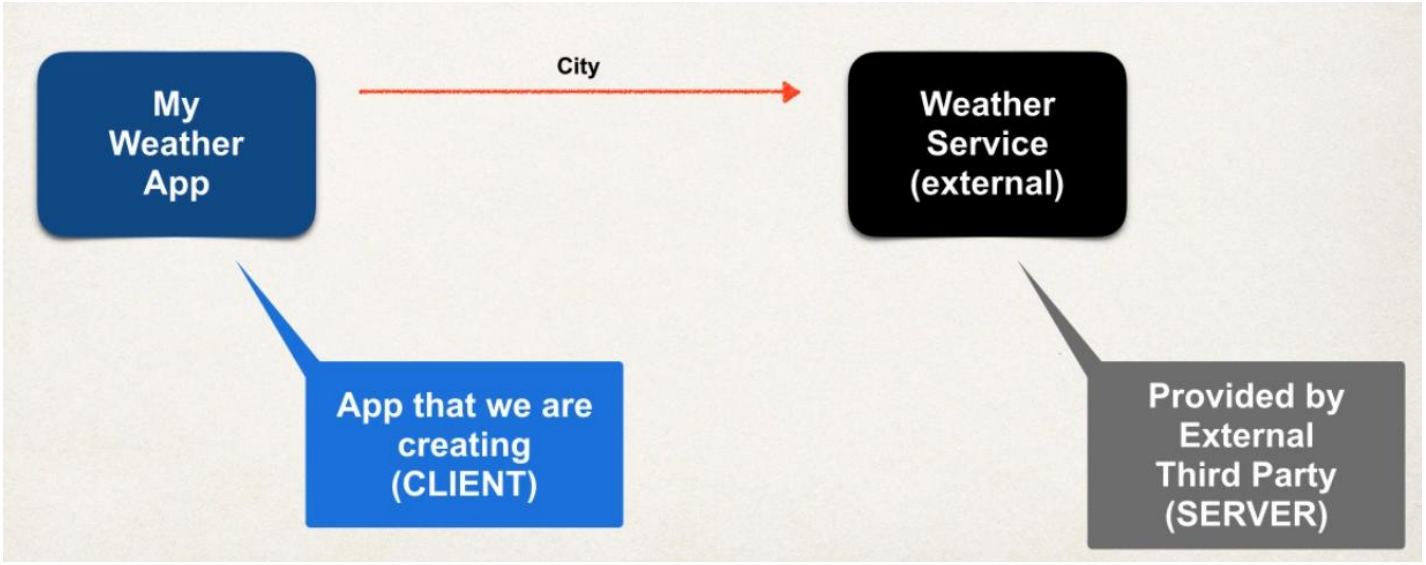
- Business Problem
  - Build a client app that provides the weather report for a city.
  - Need to get weather data from an external service.

Application Architecture



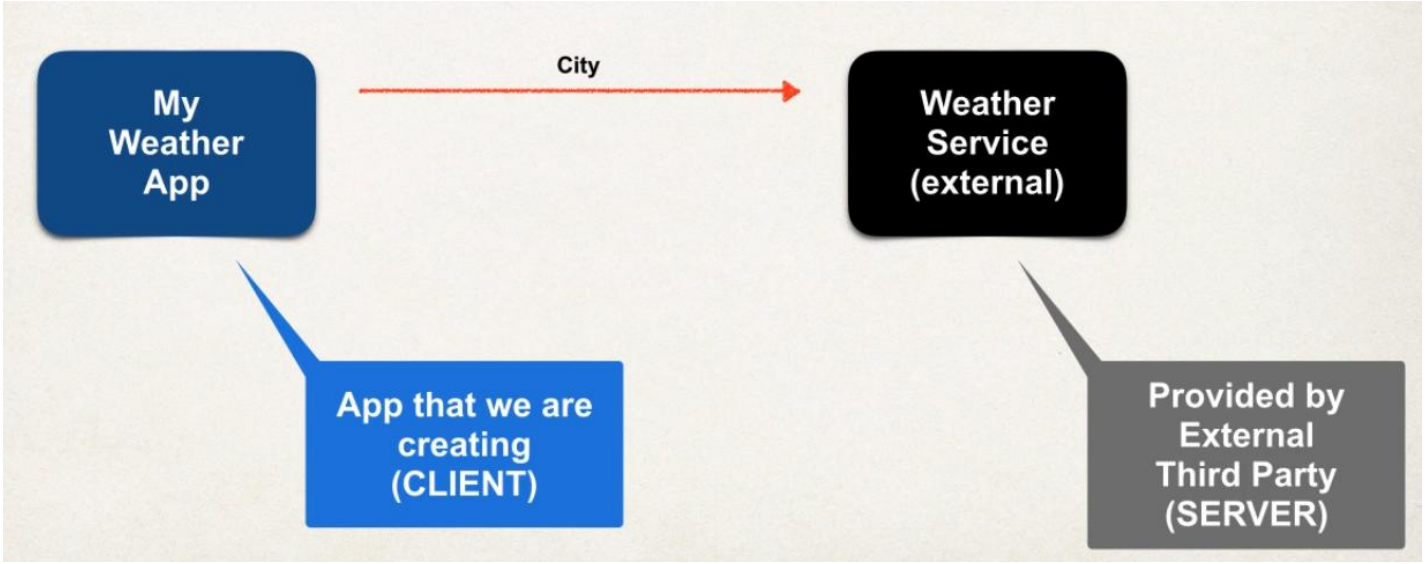
Questions?

- How will we connect to the Weather Services?
- What programming language do we use?
- What is the data format?



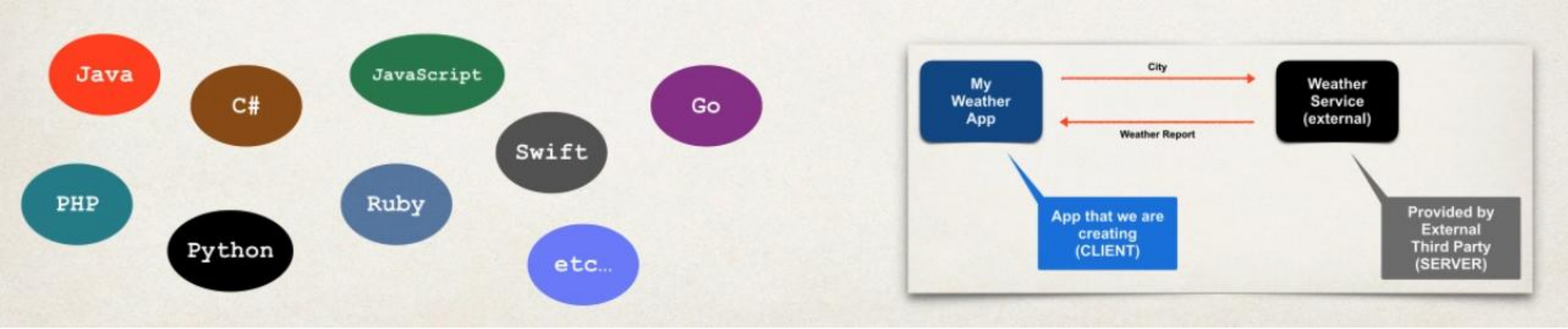
Answers

- **How will we connect to the Weather Service?**
  - We can make REST API calls over HTTP
  - **REST**: **RE**presentational **S**tate **T**ransfer
  - Lightweight approach for communicating between applications



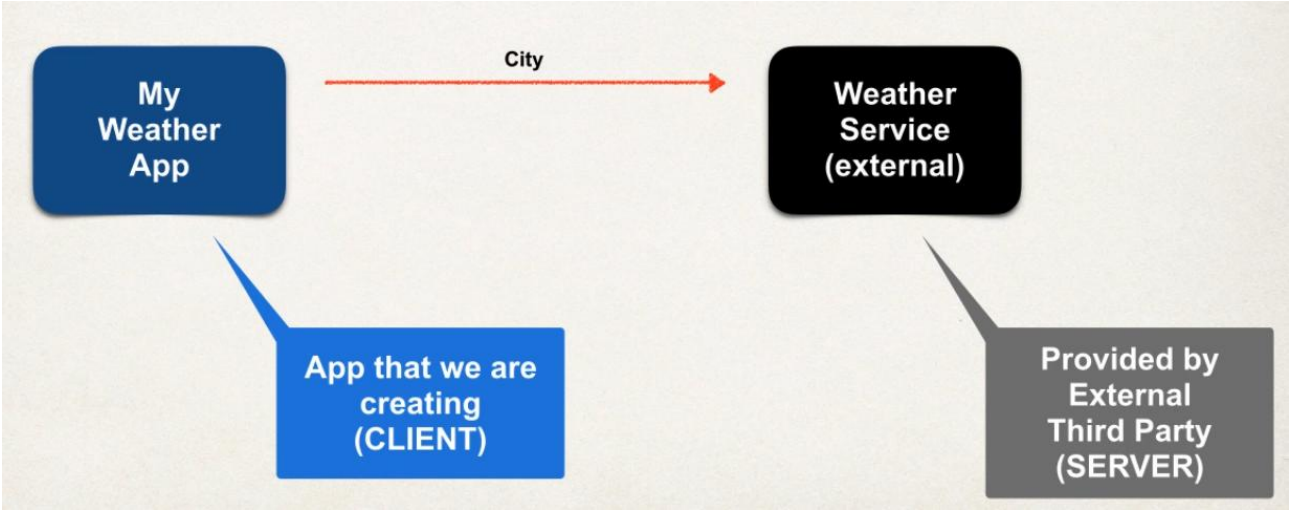
Answers

- **What programming language do we use?**
  - REST is language independent
  - The **Client** application can use **ANY** programming language
  - The **Server** application can use **ANY** programming language



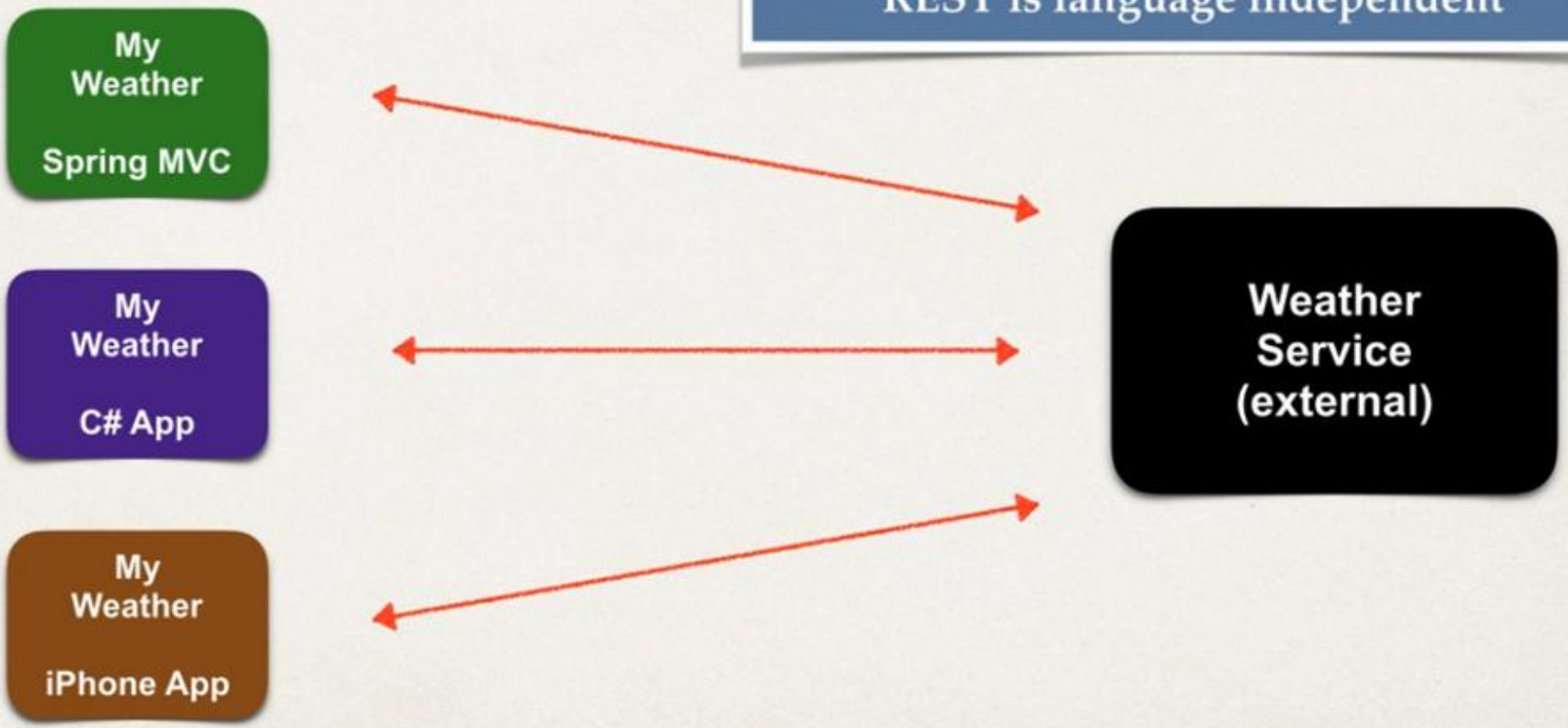
Answers

- **What is the data format?**
  - REST application can use any data format
  - Commonly see XML and JSON
  - **JSON** is most popular and modern
  - **J**ava**S**cript **O**bject **N**otation



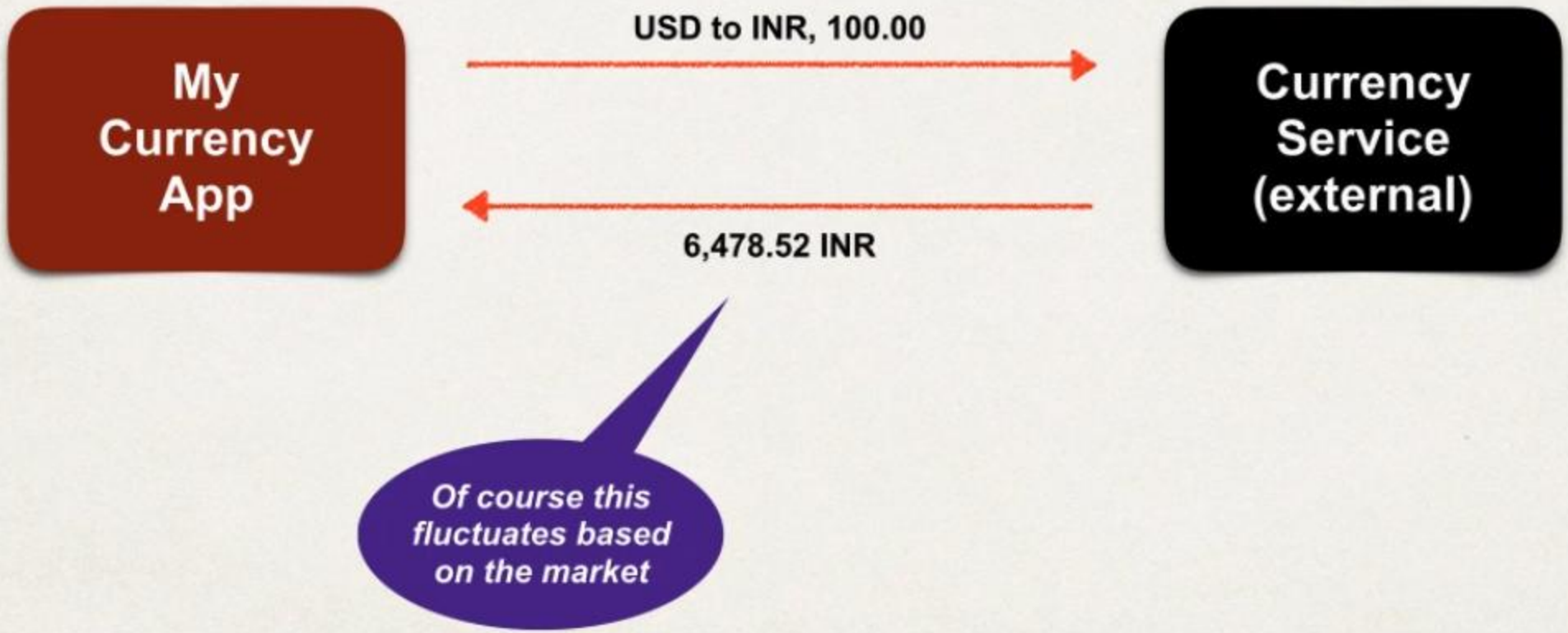
Multiple Client Apps

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

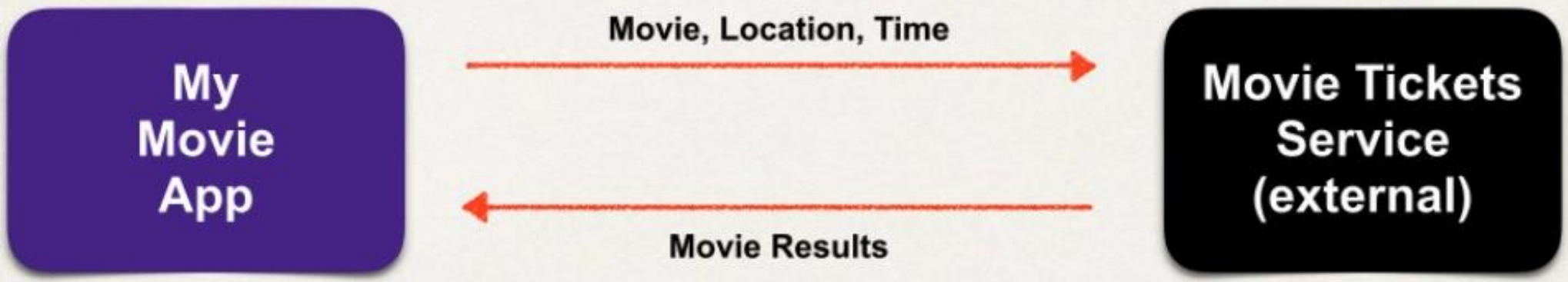


Other Examples for Web Services

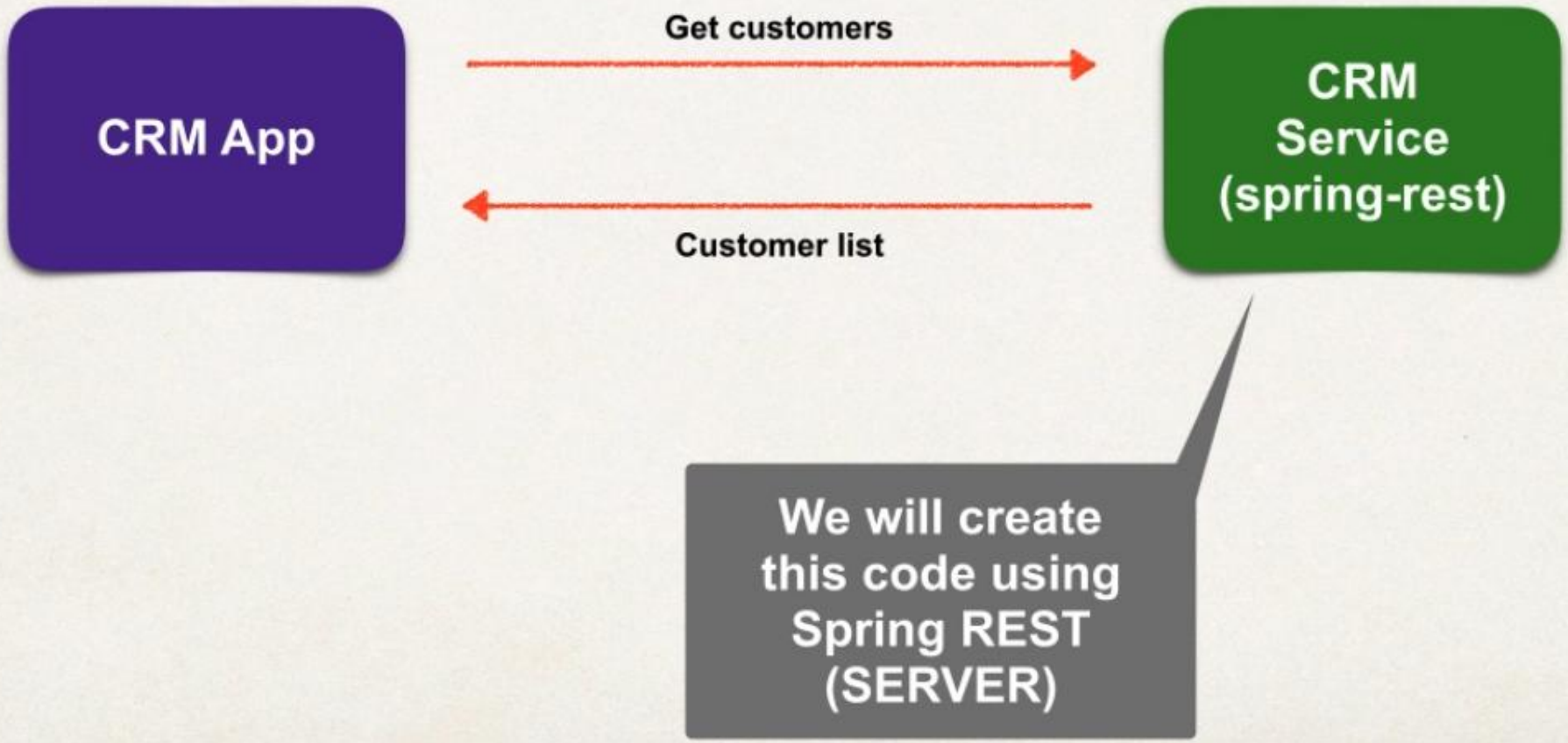
Currency Converter App



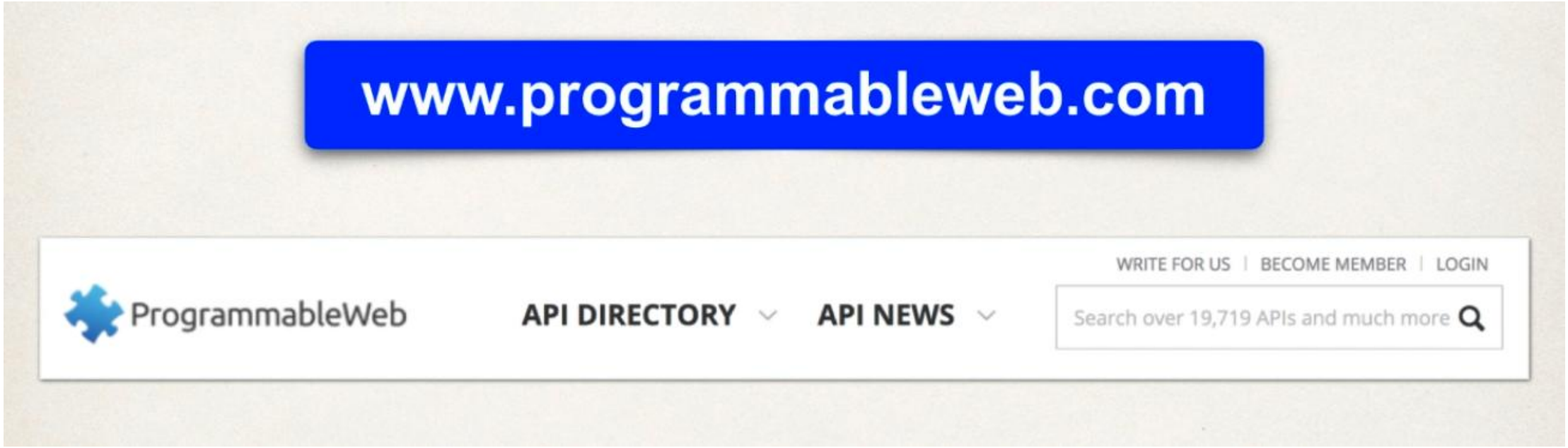
Movie Tickets App



Customer Relationship Manager (CRM) App



Where to find REST API's?



What do we call it?

Spring REST Support

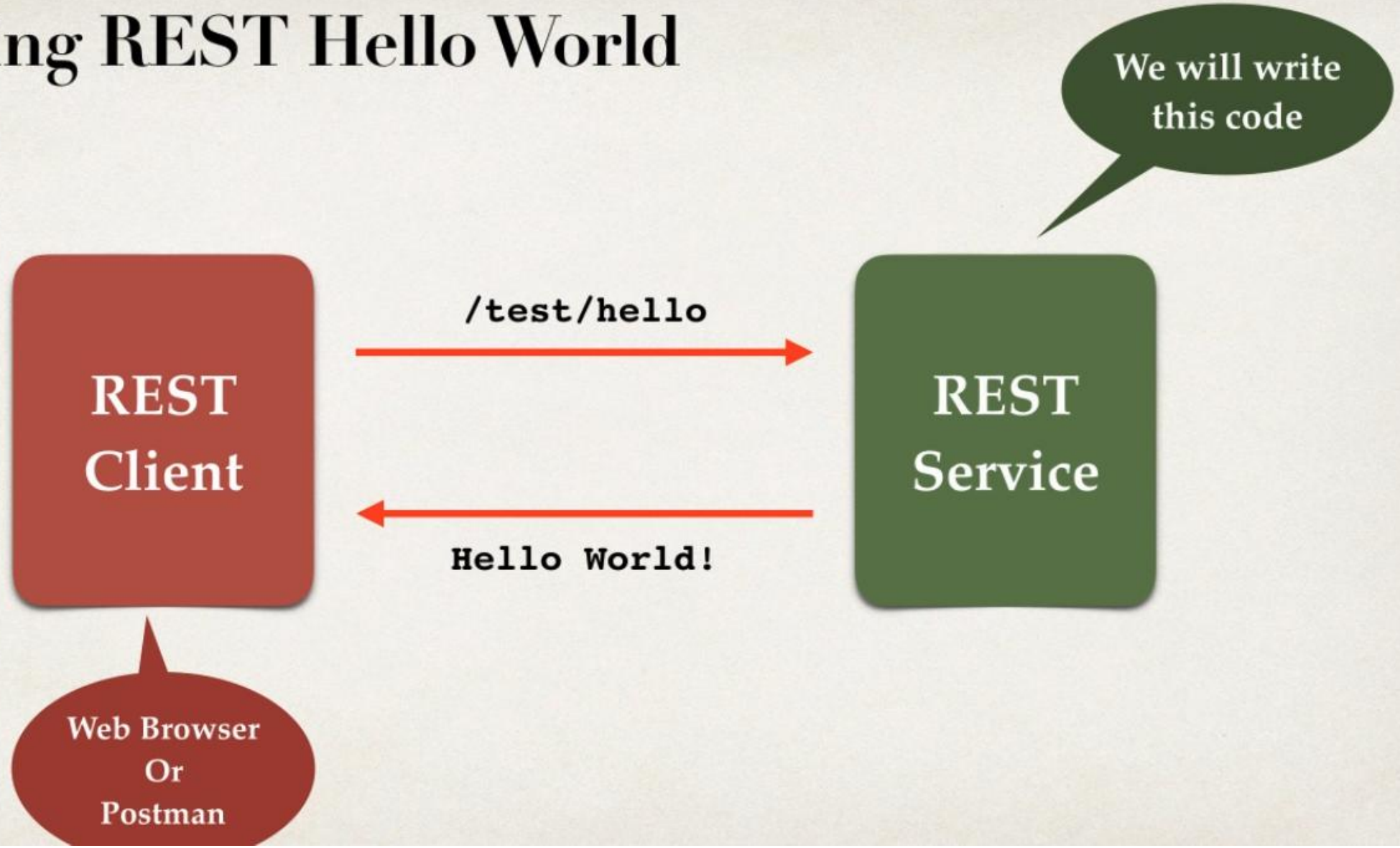
Spring REST Support

- Spring Web MVC provides support for Spring REST

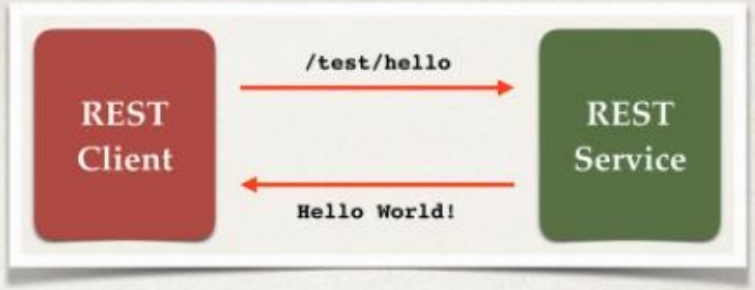
- New annotation **`@RestController`**
  - Extension of `@Controller`
  - Handles REST requests and responses

- Spring REST will also automatically convert Java POJOs to JSON
  - As long as the Jackson project is on the classpath or pom.xml

Spring REST Hello World



Spring REST Controller



Adds REST support

```
@RestController
@RequestMapping("/test")
public class DemoRestController {

  @GetMapping("/hello")
  public String sayHello() {
    return "Hello World!";
  }

}
```

Access the REST endpoint at /test/hello

Returns content to client

Testing with REST Client - Postman

Testing with REST Client - Web Browser

Web Browser vs Postman

- For simple REST testing for GET requests
  - Web Browser and Postman are similar

- However, for advanced REST testing: POST, PUT etc …
  - Postman has much better support
  - POSTing JSON data, setting content type
  - Passing HTTP request headers, authentication etc …

Thank you