

# API Workshop

Open API and Swagger

O'REILLY®

Software  
Architecture

# Agenda

- What is an Open API Specification?
- Why should I consider using one?
- Working with OpenAPI Specification (Swagger) and Spring Boot
- Generating client code
- Balancing writing specifications vs generating specifications

# What is an Open API Specification?

XSD

gRPC

CORBA

WSDL

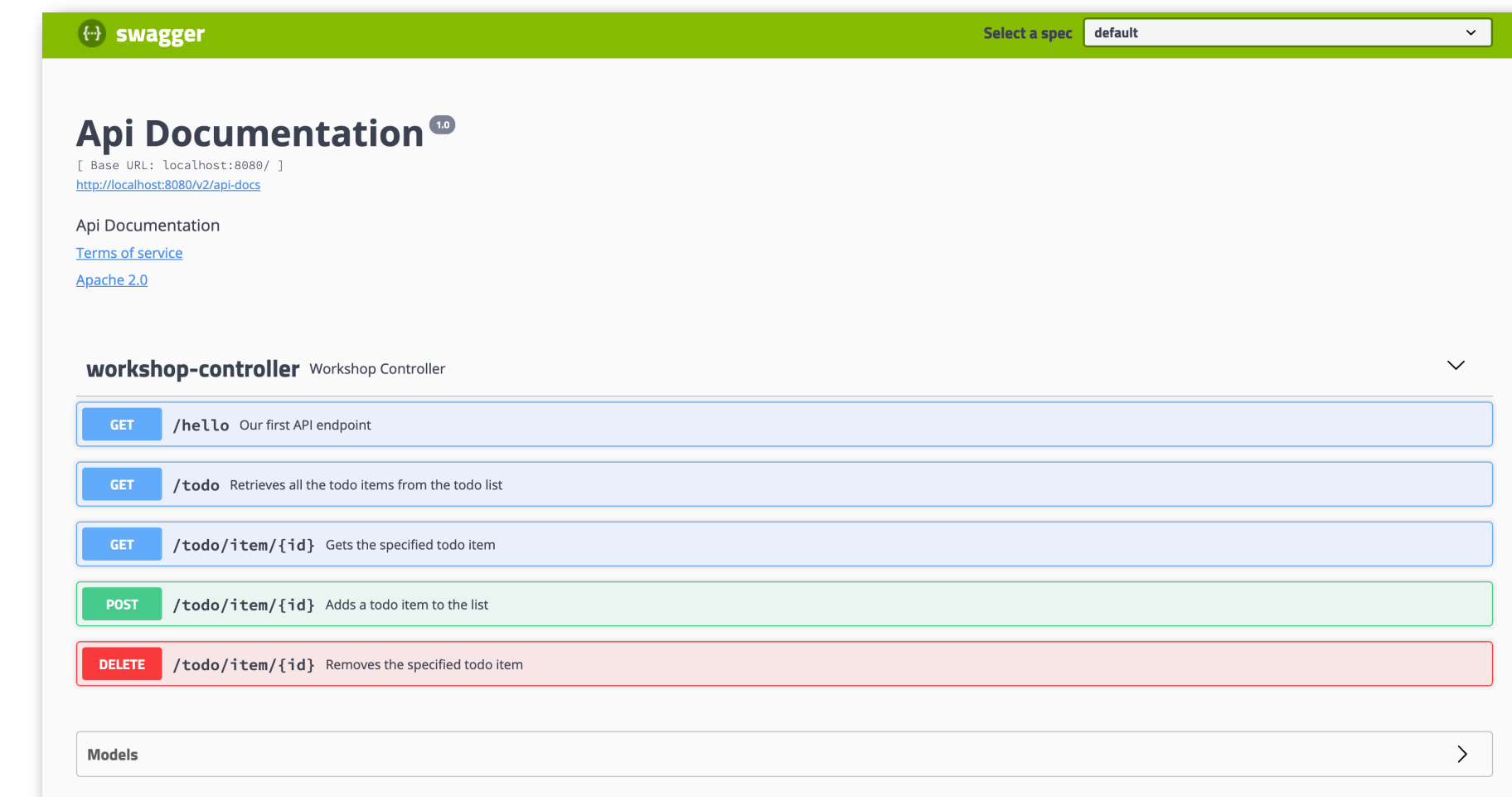
WADL

# What is an Open API Specification?

- Defines the structure of a REST API
- Defines the objects exchanged in the REST API
- Strong patterns for validation of exchanges
- Describes the possible interactions between client and server
- Becomes a point of consistency in a decoupled software environment

# Why should I consider using Open API Specifications?

- Users of the API can understand the API structure
- Supplies documentation on the API
- Allows developers to generate code to interact with your API
- Can be used to help describe and observe changes in your API



# Spring Boot and Open API Specification

- Spring controllers describe and form the structure of an API
- <https://springdoc.org/> is a Spring Project project that scans annotations and generates the specification
- Enabled via annotations on a Spring Boot project
- Has configuration to control the detail of the specification

# Generating Client Code

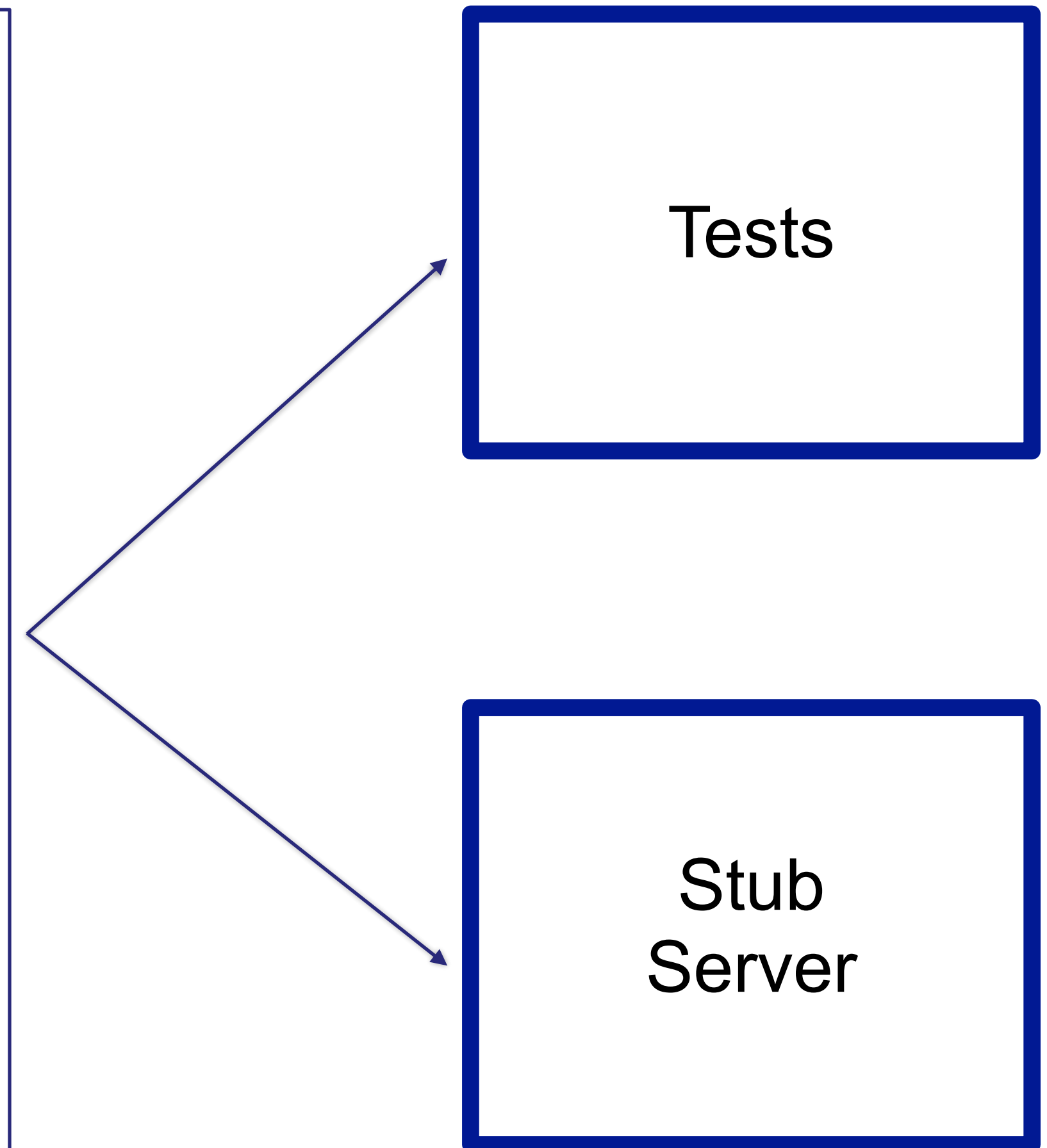
- Code generation tools generate the client of an API based on the specification
- Many integrations are starting to use Open API specs - e.g. REST/Excel integrations
- It is also possible to generate server side code from an Open API Specification

```
java -jar openapi-generator-cli.jar generate \  
-i http://localhost:8080/v3/api-docs \  
-g java \  
-o todos-client
```



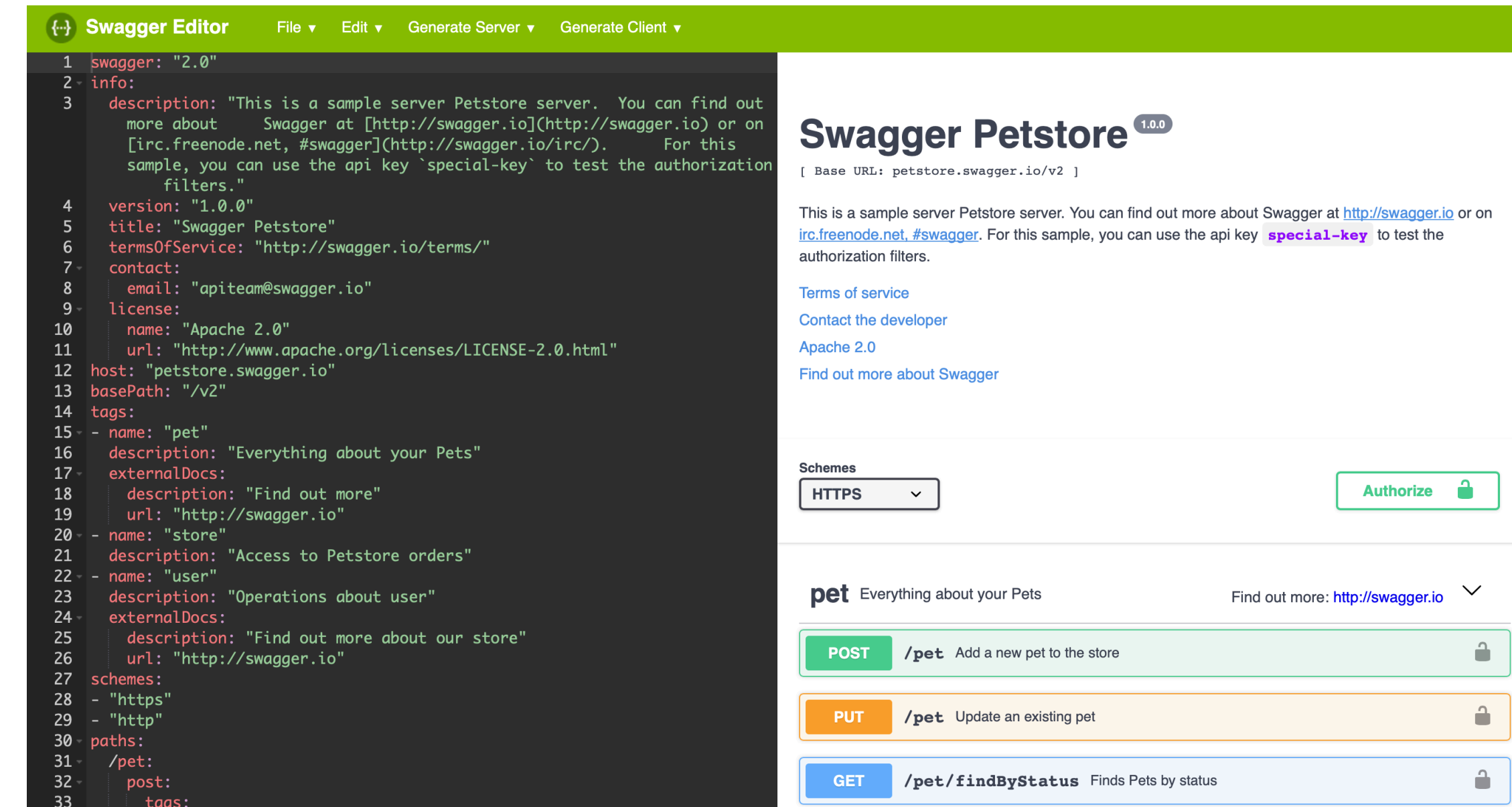
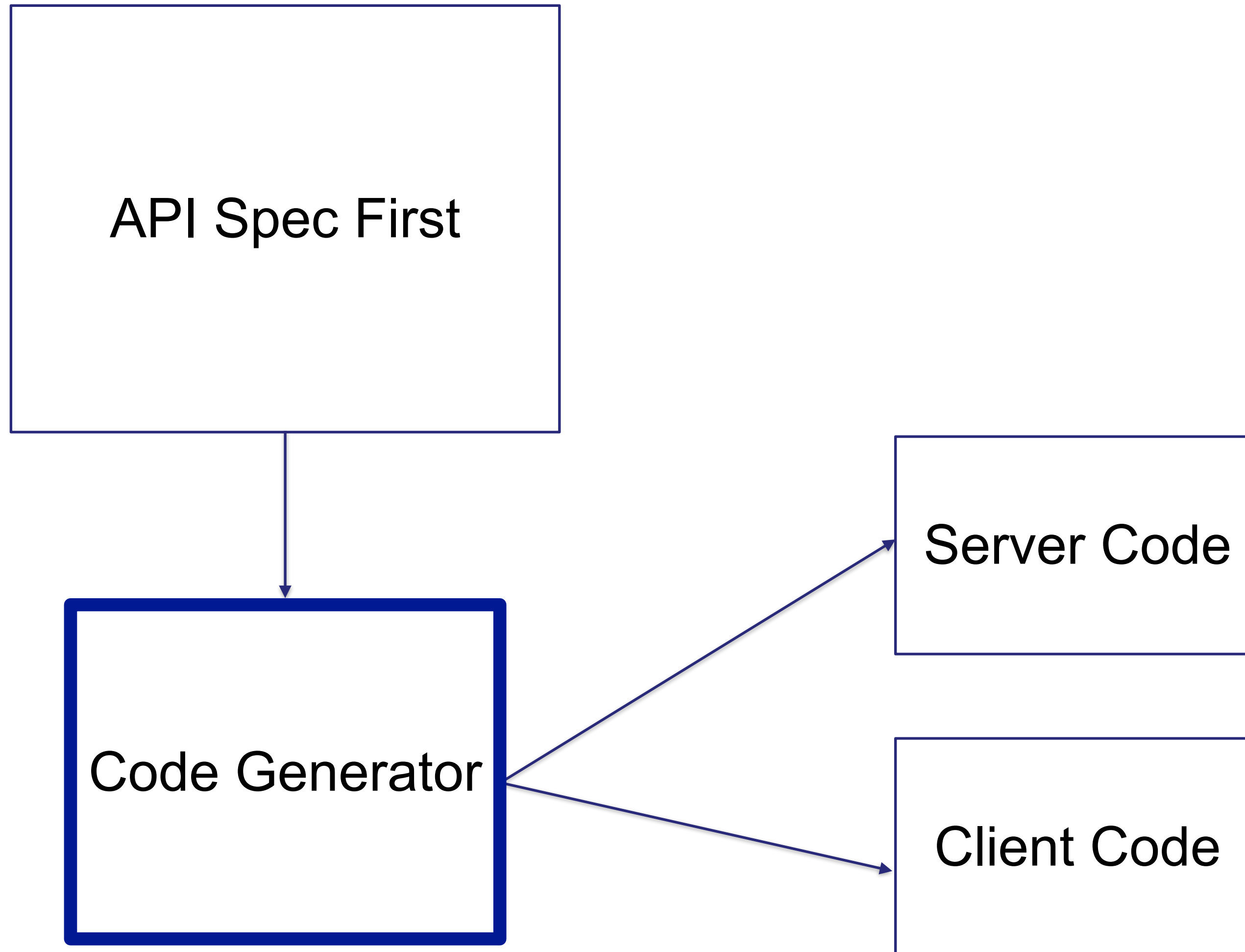
# Contract Driven Development

```
org.springframework.cloud.contract.spec.Contract.make {  
    request {  
        method POST()  
        headers {  
            contentType(applicationJson())  
        }  
        url '/todos'  
        body(  
            "message": "A new todo"  
        )  
    }  
    response {  
        status CREATED()  
        headers {  
            header(location(), anyUrl())  
        }  
    }  
}
```





# API Specification First



<https://editor.swagger.io>

# Lab 3 - OpenAPI

<https://github.com/nickebbitt/api-workshop>