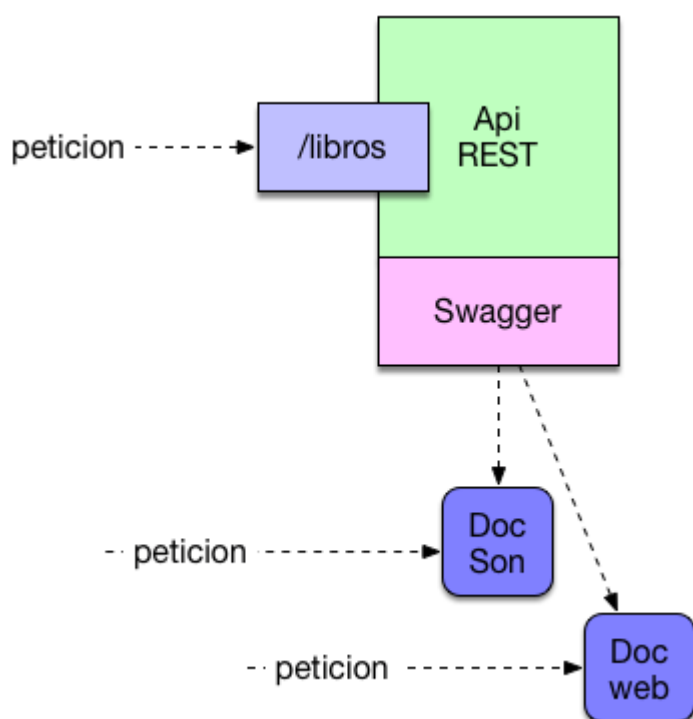


Acabamos de ver como usar Java equals y hashCode

Swagger es una herramienta que nos permite documentar de una forma sencilla nuestras APIs REST hoy por hoy se ha convertido en uno de los standards de facto a la hora de trabajar . Cada día publicamos un mayor número de APIs REST y lo lógico es que publiquemos una documentación clara de como trabajar con ellas. Swagger nos permite hacerlo de una forma muy rápida y directa.



Vamos a ver un ejemplo, para ello partiremos de un proyecto de Spring boot que tiene un servicio que devuelve una lista de personas. Las dependencias de Maven son:

```
<dependencies>
  <dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-web</artifactId>
  </dependency>
```

```
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-test</artifactId>
    <scope>test</scope>
</dependency>
```

```
<dependency>
    <groupId>io.springfox</groupId>
    <artifactId>springfox-swagger2</artifactId>
    <version>2.6.1</version>
</dependency>
```

```
<!--
```

```
https://mvnrepository.com/artifact/io.springfox/springfox-swagger-ui -
-->
```

```
<dependency>
    <groupId>io.springfox</groupId>
    <artifactId>springfox-swagger-ui</artifactId>
    <version>2.6.1</version>
</dependency>
</dependencies>
```

Spring @RestController

En ellas podemos ver como hemos incluido las nuevas librerías. El siguiente paso es definir un servicio REST con la anotación @RestController.

```
package com.arquitecturajava.rest;
```

```
import java.util.ArrayList;
import java.util.List;
```

```

import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class ControladorPersona {

    @GetMapping("/personas")
    public List<Persona> findAll() {

        List<Persona> lista= new
ArrayList<Persona>();
        lista.add(new Persona("pepe","perez",25));
        lista.add(new Persona("juan","sanchez",35));
        lista.add(new Persona("ana","gomez",25));
        return lista;
    }

}

```

Configuración de Spring

Es momento de configurar la herramienta para que nos genere una documentación del API REST. Para ello añadimos un nuevo fichero de configuración de Spring.

```

package com.arquitecturajava.rest1;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

```

```

import springfox.documentation.builders.RequestHandlerSelectors;
import springfox.documentation.spi.DocumentationType;
import springfox.documentation.spring.web.plugins.Docket;
import springfox.documentation.swagger2.annotations.EnableSwagger2;

import static springfox.documentation.builders.PathSelectors.regex;
@Configuration
@EnableSwagger2
public class SwaggerConfiguration {

    @Bean
    public Docket productApi() {
        return new Docket(DocumentationType.SWAGGER_2)
            .select()
            .apis(RequestHandlerSelectors.basePackage("com.arquitecturajava.rest"))
            .paths(regex("/personas.*"))
            .build();
    }
}

```

Aquí configuramos swagger para que publique documentación para la url que publicamos en este caso nuestra url de /personas. Nos queda por ver el fichero de configuración principal de Spring framework que importará el de Swagger.

```
package com.arquitecturajava.rest;
```

```

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.annotation.Import;
import
org.springframework.web.servlet.config.annotation.ResourceHandlerRegis
try;
import
org.springframework.web.servlet.config.annotation.WebMvcConfigurer;

@SpringBootApplication
@Import(SwaggerConfiguration.class)
public class RestApplication implements WebMvcConfigurer{

    public static void main(String[] args) {
        SpringApplication.run(RestApplication.class, args);
    }

    @Override
    public void addResourceHandlers(ResourceHandlerRegistry
registry) {

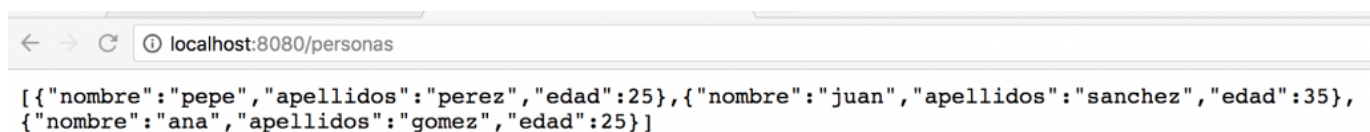
        registry.addResourceHandler("swagger-ui.html")
                .addResourceLocations("classpath:/META-
INF/resources/");

    }
}

```

Swagger y documentación

Arrancamos la aplicación con Spring Boot y accederemos de forma directa a la url de personas que nos mostrará la lista de personas.



Hasta aquí todo es lo habitual , sin embargo si miramos los ficheros de log de Spring boot podremos ver que se han publicado más urls.

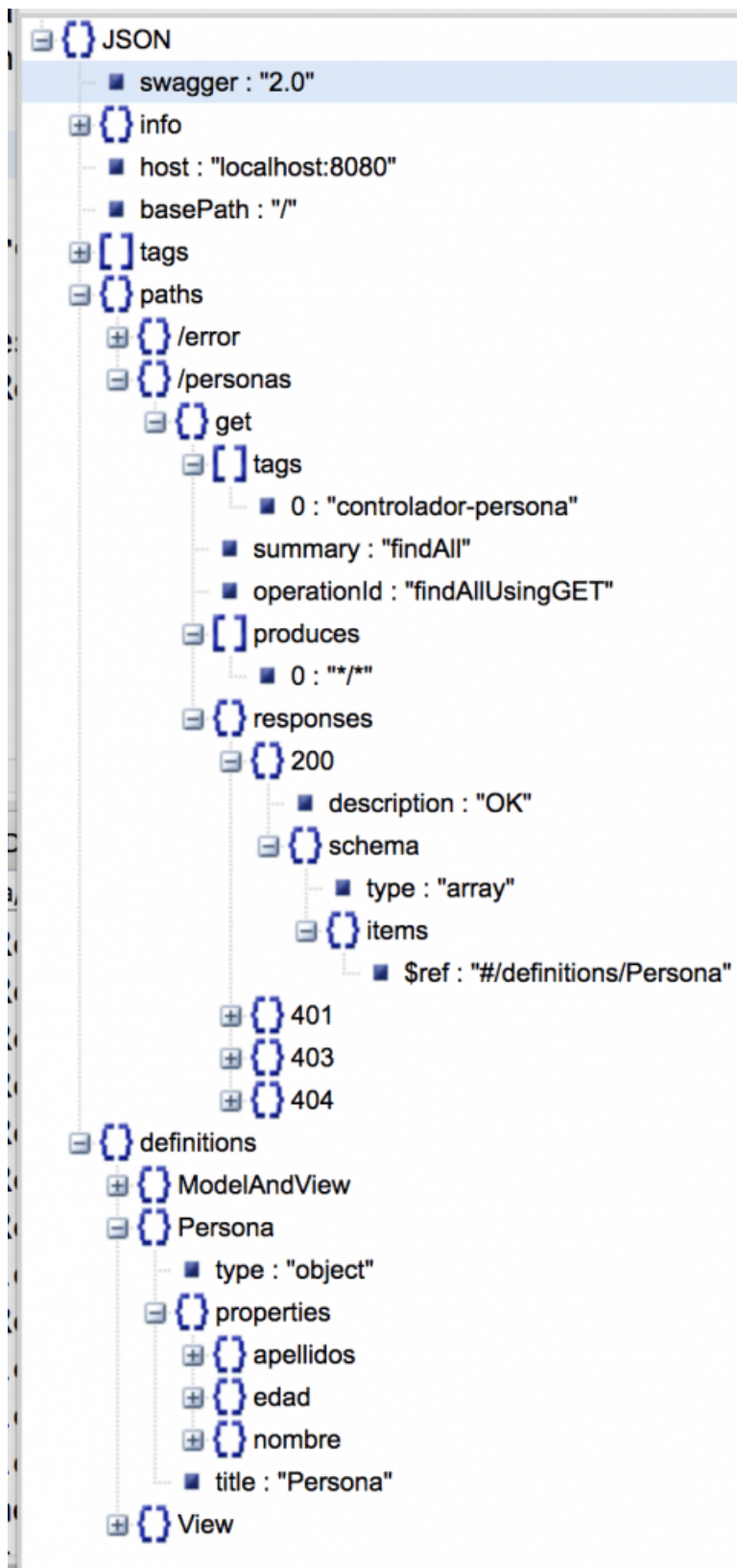
```
: Mapped URL path [/v2/api-docs] onto
: Mapped URL path [/**/favicon.ico] c
: Looking for @ControllerAdvice: org.
: Mapped URL path [/webjars/**] onto
: Mapped URL path [/**] onto handler
: Mapped URL path [/swagger-ui.html]
```

Dos de las urls más importantes de swagger son `/v2/api-docs` que publica la documentación en formato json . Si echamos un vistazo a la url recibiremos algo como :

```
{
  "swagger": "2.0",
  "info": {
    "description": "Api Documentation",
    "version": "1.0",
    "title": "Api Documentation",
    "termsOfService": "urn:tos",
    "contact": {},
    "license": {
      "name": "Apache 2.0",
      "url": "http://www.apache.org/licenses/LICENSE-2.0"
    },
    "host": "localhost:8080",
    "basePath": "/"
  },
  "tags": [
    {
      "name": "basic-error-controller",
      "description": "Basic Error Controller",
      "name": "controlador-persona",
      "description": "Controlador Persona"
    }
  ],
  "paths": {
    "/error/{get}": {
      "get": {
        "tags": [
          "basic-error-controller"
        ],
        "summary": "error",
        "operationId": "errorUsingGET",
        "produces": [
          "*"
        ],
        "responses": {
          "200": {
            "description": "OK",
            "schema": {
              "type": "object",
              "additionalProperties": {
                "type": "object"
              }
            },
            "401": {
              "description": "Unauthorized",
            },
            "403": {
              "description": "Forbidden",
            },
            "404": {
              "description": "Not Found",
            }
          },
          "head": {
            "tags": [
              "basic-error-controller"
            ],
            "summary": "error",
            "operationId": "errorUsingHEAD",
            "consumes": [
              "application/json"
            ],
            "produces": [
              "*"
            ],
            "responses": {
              "200": {
                "description": "OK",
                "schema": {
                  "type": "object",
                  "additionalProperties": {
                    "type": "object"
                  }
                },
                "204": {
                  "description": "No Content",
                },
                "401": {
                  "description": "Unauthorized",
                },
                "403": {
                  "description": "Forbidden",
                },
                "post": {
                  "tags": [
                    "basic-error-controller"
                  ],
                  "summary": "error",
                  "operationId": "errorUsingPOST",
                  "consumes": [
                    "application/json"
                  ],
                  "produces": [
                    "*"
                  ],
                  "responses": {
                    "200": {
                      "description": "OK",
                      "schema": {
                        "type": "object",
                        "additionalProperties": {
                          "type": "object"
                        }
                      },
                      "201": {
                        "description": "Created",
                      },
                      "401": {
                        "description": "Unauthorized",
                      },
                      "403": {
                        "description": "Forbidden",
                      },
                      "404": {
                        "description": "Not Found",
                      },
                      "put": {
                        "tags": [
                          "basic-error-controller"
                        ],
                        "summary": "error",
                        "operationId": "errorUsingPUT",
                        "consumes": [
                          "application/json"
                        ],
                        "produces": [
                          "*"
                        ],
                        "responses": {
                          "200": {
                            "description": "OK",
                            "schema": {
                              "type": "object",
                              "additionalProperties": {
                                "type": "object"
                              }
                            },
                            "201": {
                              "description": "Created",
                            },
                            "401": {
                              "description": "Unauthorized",
                            },
                            "403": {
                              "description": "Forbidden",
                            },
                            "404": {
                              "description": "Not Found",
                            },
                            "delete": {
                              "tags": [
                                "basic-error-controller"
                              ],
                              "summary": "error",
                              "operationId": "errorUsingDELETE",
                              "produces": [
                                "*"
                              ],
                              "responses": {
                                "200": {
                                  "description": "OK",
                                  "schema": {
                                    "type": "object",
                                    "additionalProperties": {
                                      "type": "object"
                                    }
                                  },
                                  "204": {
                                    "description": "No Content",
                                  },
                                  "401": {
                                    "description": "Unauthorized",
                                  },
                                  "403": {
                                    "description": "Forbidden",
                                  },
                                  "options": {
                                    "tags": [
                                      "basic-error-controller"
                                    ],
                                    "summary": "error",
                                    "operationId": "errorUsingOPTIONS",
                                    "consumes": [
                                      "application/json"
                                    ],
                                    "produces": [
                                      "*"
                                    ],
                                    "responses": {
                                      "200": {
                                        "description": "OK",
                                        "schema": {
                                          "type": "object",
                                          "additionalProperties": {
                                            "type": "object"
                                          }
                                        },
                                        "204": {
                                          "description": "No Content",
                                        },
                                        "401": {
                                          "description": "Unauthorized",
                                        },
                                        "403": {
                                          "description": "Forbidden",
                                        }
                                      }
                                    },
                                    "patch": {
                                      "tags": [
                                        "basic-error-controller"
                                      ],
                                      "summary": "error",
                                      "operationId": "errorUsingPATCH",
                                      "consumes": [
                                        "application/json"
                                      ],
                                      "produces": [
                                        "*"
                                      ],
                                      "responses": {
                                        "200": {
                                          "description": "OK",
                                          "schema": {
                                            "type": "object",
                                            "additionalProperties": {
                                              "type": "object"
                                            }
                                          },
                                          "204": {
                                            "description": "No Content",
                                          },
                                          "401": {
                                            "description": "Unauthorized",
                                          },
                                          "403": {
                                            "description": "Forbidden",
                                          }
                                        }
                                      }
                                    },
                                    "personas": {
                                      "get": {
                                        "tags": [
                                          "controlador-persona"
                                        ],
                                        "summary": "findAll",
                                        "operationId": "findAllUsingGET",
                                        "produces": [
                                          "*"
                                        ],
                                        "responses": {
                                          "200": {
                                            "description": "OK",
                                            "schema": {
                                                "type": "array",
                                                "items": {
                                                  "$ref": "#/definitions/Persona"
                                                }
                                            },
                                            "401": {
                                              "description": "Unauthorized",
                                            },
                                            "403": {
                                              "description": "Forbidden",
                                            },
                                            "404": {
                                              "description": "Not Found",
                                            }
                                          },
                                          "definitions": {
                                            "ModelAndView": {
                                              "type": "object",
                                              "properties": {
                                                "empty": {
                                                  "type": "boolean",
                                                  "model": {
                                                    "type": "object",
                                                    "modelMap": {
                                                      "type": "object",
                                                      "additionalProperties": {
                                                        "type": "object"
                                                      },
                                                      "reference": {
                                                        "type": "boolean",
                                                        "status": {
                                                          "type": "string",
                                                          "enum": [
                                                            "100", "101", "102", "103", "200", "201", "202", "203", "204", "205", "206", "207", "208", "226", "300", "301", "302", "303", "304", "305", "307", "308", "400", "401", "402", "403", "404", "405", "406", "407", "408", "409", "410", "411", "412", "413", "414", "415", "416", "417", "418", "419", "420", "421", "422", "423", "424", "426", "428", "429", "431", "451", "500", "501", "502", "503", "504", "505", "506", "507", "508", "509", "510", "511"
                                                          ]
                                                        },
                                                        "view": {
                                                          "$ref": "#/definitions/View"
                                                        },
                                                        "viewName": {
                                                          "type": "string",
                                                          "title": "ModelAndView",
                                                        },
                                                        "persona": {
                                                          "type": "object",
                                                          "properties": {
                                                            "apellidos": {
                                                              "type": "string",
                                                              "edad": {
                                                                "type": "integer",
                                                                "format": "int32",
                                                                "nombre": {
                                                                  "type": "string",
                                                                  "title": "Persona",
                                                                },
                                                                "view": {
                                                                  "type": "object",
                                                                  "properties": {
                                                                    "contentType": {
                                                                      "type": "string",
                                                                      "title": "View"
                                                                    }
                                                                  }
                                                                }
                                                              }
                                                            }
                                                          }
                                                        }
                                                    }
                                                  }
                                                }
                                              }
                                            }
                                          }
                                        }
                                      }
                                    }
                                  }
                                }
                              }
                            }
                          }
                        }
                      }
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}
```

En principio es una información que nos puede parecer extraña. Es suficiente abrirla con un

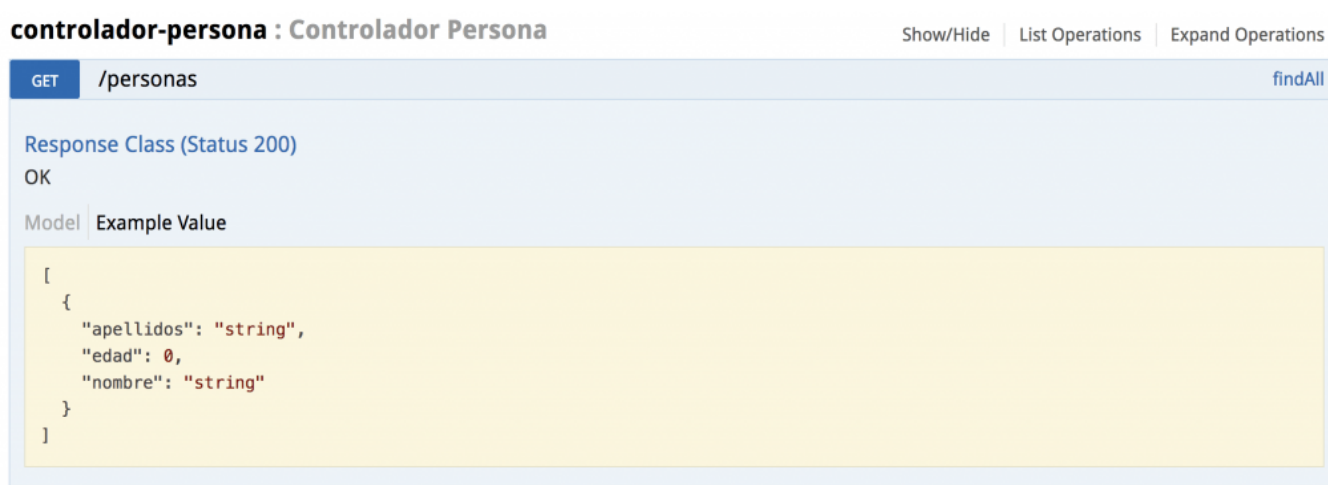
visor de JSON para que la información nos quede mucho más clara:



Podemos ver claramente la definición de la operación y el tipo de objeto que devuelve, así como información adicional. Otra de las opciones que tenemos es acceder a una vista web de la documentación mucho más amable utilizando la url /swagger-ui.html.



Entramos a controlador persona y vemos los métodos que tiene soportados:



Acabamos de documentar nuestro api REST con swagger.

Otros artículos relacionados:

1. [REST HTTP return codes y sus curiosidades](#)
2. [Spring REST Service con @RestController](#)
3. [Arquitecturas REST y sus niveles](#)
4. [Spring Boot](#)