

# springboot+swagger+API

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swaggerapi\_docsapiparametertype(required)

vscodebootstrapswaggerswagger demopython

PATCH /Test/modifyStudent /根据学生id获取学生信息	
Parameters	
Name	Description
/Test/modifyStudent这个api有3个参数	
age * required integer(\$int32) (query)	年龄
name * required string (query)	姓名
token string (header)	user token

1 VScodespringboot+swagger

## 1.1 maven swagger2

VScodeSpringBoot web pom.xml

```

<!-- swagger -->
<dependency>
<groupId>io.springfox</groupId>
<artifactId>springfox-swagger2</artifactId>
<version>2.9.2</version>
</dependency>
<dependency>
<groupId>io.springfox</groupId>
<artifactId>springfox-swagger-ui</artifactId>
<version>2.9.2</version>
</dependency>

```

dependencies

## 1.2 swagger2

### SpringbootconfigSwagger2 SwaggerConfig.java

```

package com.example.swaggerdemo.config;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;
import springfox.documentation.builders.ApiInfoBuilder;
import springfox.documentation.builders.PathSelectors;
import springfox.documentation.builders.RequestHandlerSelectors;
import springfox.documentation.service.ApiInfo;
import springfox.documentation.spi.DocumentationType;
import springfox.documentation.spring.web.plugins.Docket;
import springfox.documentation.swagger2.annotations.EnableSwagger2;

@Configuration
@EnableSwagger2
public class SwaggerConfig {

    @Bean
    public Docket createRestApi(){
        return new Docket(DocumentationType.SWAGGER_2).apiInfo(apiInfo())
            .select()
            //apis(RequestHandlerSelectors.any())
            .apis(RequestHandlerSelectors.basePackage("com.example.swaggerdemo.controller"))
            .paths(PathSelectors.any()).build();
    }

    private ApiInfo apiInfo(){
        return new ApiInfoBuilder()
            .title("Spring BootSwagger2")
            .description("This is a restful api document.")
            .version("1.0")
            .build();
    }
}

```

package

1. @Configuration @EnableSwagger2 swagger2
2. apiInfo() @ApiOperationapi

## 1.3 controller

### swagger controllerconfigcontrollerTestController.java

```

package com.example.swaggerdemo.controller;

```

```

import java.util.HashMap;
import java.util.Map;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.RequestParam;
import org.springframework.web.bind.annotation.ResponseBody;
import org.springframework.web.bind.annotation.RestController;

import io.swagger.annotations.Api;
import io.swagger.annotations.ApiImplicitParam;
import io.swagger.annotations.ApiImplicitParams;
import io.swagger.annotations.ApiOperation;
@ApiImplicitParams({
    @ApiImplicitParam(name = "id", value = "id", required = true, paramType = "query", dataType = "int")
})
@RestController
@RequestMapping("/Test")
@Api("swagger")
public class TestController {

    //RequestParam
    @RequestMapping(path = "/getStudent", method = RequestMethod.GET)
    @ApiOperation("/id")
    @ApiImplicitParam(name = "id", value = "id", required = true, paramType = "query", dataType = "int")
    public Student getStudent(@RequestParam final Integer id) {
        final Student student = new Student();
        student.setId(11);
        student.setAge(21);
        student.setName("");
        final Map<Integer, Student> studentMap = new HashMap<>();
        studentMap.put(11, student);
        return studentMap.get(id);
    }

    //RequestParam
    @RequestMapping(path = "/modifyStudent", method = RequestMethod.PATCH)
    @ApiOperation("/id")
    @ApiImplicitParams({
        @ApiImplicitParam(name = "name", value = "", required = true, paramType = "query", dataType = "String"),
        @ApiImplicitParam(name = "age", value = "", required = true, paramType = "query", dataType = "int")
    })
    public Student editStudent(@RequestParam final String name, @RequestParam final Integer age) {
        final Student student = new Student();
        student.setId(12);
        student.setName(name);
        student.setAge(age);
        return student;
    }

    //RequestBodybodymodel
    @ApiOperation("/")
    @RequestMapping(path = "/addStudent", method = RequestMethod.POST)
    public Map<Integer, Student> AddStudent(@RequestBody Student student) {
        final Map<Integer, Student> studentMap = new HashMap<>();
        studentMap.put(student.getId(), student);
        return studentMap;
    }

    @ApiImplicitParamparamType
    {
        • header-->@RequestHeader
        • query -->get@RequestParam
        • path -->(restful)-->@PathVariable
        • body @RequestBody
    }
}

```

API

## 1.4

VScode Run JavaTerminallocalhost:8080/swagger-ui.htmlswagger

## 1.5 Models

# APIbodyswaggermodels

```
{
```

age	integer(\$int32)
id*	integer(\$int32)
name	string

```
}
```

## 1.6 dataType

Type	swagger	swagger ui	api_docs	
integer	dataType = "int"	integer(\$int32)	"type": "integer", "format": "int32"	swagger IntegerdataType = "int"int32dataType = "long"int64intlongformatinteger type
	dataType = "long"	integer(\$int64)	"type": "integer", "format": "int64"	
number	dataType = "float"	number(\$float)	"type": "number", "format": "float"	swagger numberfloatdouble2format
	dataType = "double"	number(\$double)	"type": "number", "format": "double"	
string	dataType = "string"	string	"type": "string"	swagger stringformatenumdate
	allowableValues = "Male, Female, None"	string Available values: Male, Female, None	"type": "string", "enum": ["Male", "Female", "None"]	
	dataType = "date"	string(\$date)	"type": "string", "format": "date"	
file	dataType = "__file"	formData	"type": "file"	
object	dataType = object	body	{ "schema": { "\$ref": "#/definitions/object" } }	a.object b.object with one nested object { "id": "string", "stu": { "age": 0, "id": 0, "name": "string" } } c. object with more nested object { "id": "string", "pro": { "name": "string", "price": 0, "type": "BOOK" }, "stu": { "age": 0, "id": 0, "name": "string" } } d.3object { "animal": { "age": 0, "id": 0, "name": "string", "pro": { "name": "string", "price": 0, "type": "BOOK" } }, "id": "string" }
array	allowMultiple = true, dataType = "String"	array[string]	{ "type": "array", "items": { "type": "string" }, "collectionFormat": "multi" }	swagger

<https://swagger.io/docs/specification/data-models/data-types/#numbers>

## 1.7 springboot

swaggerapi

### 1.6.1 pom.xmlsecurity

```

<!-- spring security -->
<dependency>
<groupId>org.springframework.boot</groupId>
<artifactId>spring-boot-starter-security</artifactId>
</dependency>

```

## 1.6.2 configsecurity

SpringSecurityConfig.java

```

package com.example.swaggerdemo.config;

import org.springframework.context.annotation.Configuration;
import org.springframework.security.config.annotation.web.builders.HttpSecurity;
import org.springframework.security.config.annotation.web.builders.WebSecurity;
import org.springframework.security.config.annotation.web.configuration.EnableWebSecurity;
import org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter;

@Configuration
@EnableWebSecurity
public class SpringSecurityConfig extends WebSecurityConfigurerAdapter {

    //
    @Override
    public void configure(WebSecurity web) throws Exception {
        //swagger2
        web.ignoring().antMatchers("/v2/api-docs",
        "/swagger-resources/configuration/ui",
        "/swagger-resources",
        "/swagger-resources/configuration/security",
        "/swagger-ui.html",
        "/Test/*");
    }

    //url
    @Override
    protected void configure(HttpSecurity http) throws Exception {
        http.authorizeRequests()
        //url
        .antMatchers("/").permitAll()
        //swagger-ui.html
        .antMatchers("/swagger-ui.html").permitAll()
        .anyRequest().authenticated()
        .and()
        .logout().permitAll()
        .and()
        .formLogin().permitAll();
    }
}

securityweb.ignoring().antMatchers()

```

## 2 swagger api-docsapijson

### 2.1 swagger api

apiswagger4headerquerypathbodyswagger controller

A.

	swagger controller
--	--------------------

header	<pre> tokenheaderswagger config  @Bean public Docket createRestApi(){ //header ParameterBuilder ticketPar = new ParameterBuilder(); List&lt;Parameter&gt; pars = new ArrayList&lt;&gt;(); ticketPar.name("token").description("user token") .modelRef(new ModelRef("string")).parameterType("header") .required(false).build(); //headerticket pars.add(ticketPar.build()); // return new Docket(DocumentationType.SWAGGER_2) .apilInfo(apiInfo()) .select() .apis(RequestHandlerSelectors.any()) .paths(PathSelectors.any()) .build() // .globalOperationParameters(pars); } </pre>
query	<pre> swagger controll@ApiImplicitParamparamTypequery@RequestParam  @RequestMapping(path = "/getStudent",method = RequestMethod.GET) @ApiOperation("/id") @ApiImplicitParam(name = "id",value = "id",required = true,paramType = "query",dataType = "int") public Student getStudent(@RequestParam final Integer id) { final Student student = new Student(); student.setId(11); student.setAge(21); student.setName(""); final Map&lt;Integer, Student&gt; studentMap = new HashMap&lt;&gt;(); studentMap.put(11, student); return studentMap.get(id); } </pre>
path	<pre> swagger controll@ApiImplicitParamparamTypepath@PathVariable  @RequestMapping(path = "/findStudent/{id}/{name}",method = RequestMethod.GET) @ApiOperation("/") @ApiImplicitParams({ @ApiImplicitParam(name = "name", value = "", required = true, paramType = "path", dataType = "String"), @ApiImplicitParam(name = "id", value = "ID", required = true, paramType = "path", dataType = "int") }) public Student getStudentFromPath(@PathVariable(value = "id") String id, @PathVariable(value = "name") String name) { final Student student = new Student(); student.setId(11); student.setAge(21); student.setName(""); final Map&lt;Integer, Student&gt; studentMap = new HashMap&lt;&gt;(); studentMap.put(11, student); return studentMap.get(id); } </pre>
body	<pre> swagger controll@RequestBody  @ApiOperation("/") @RequestMapping(path = "/addStudent", method = RequestMethod.POST) public Map&lt;Integer, Student&gt; AddStudent(@RequestBody Student student) { final Map&lt;Integer, Student&gt; studentMap = new HashMap&lt;&gt;(); studentMap.put(student.getId(), student); return studentMap; }  -----  @ApiModel("") public class Student { @ApiModelProperty(name = "id",value = "",required = true) private Integer id; @ApiModelProperty(name = "name",value = "",required = true) private String name; @ApiModelProperty(name = "age",value = "",required = true) private Integer age; } </pre>

## B. swagger api\_docs

```

{
  "swagger": "2.0",

```

```

"info":{
  "description":"This is a restful api document.",
  "version":"1.0",
  "title":"Spring BootSwagger2"
},
"host":"127.0.0.1:8080",
"basePath":"/",
"tags":[],
"paths":{
  "/Test/addStudent":{
    "post":{
      "tags":[
        "test-controller"
      ],
      "summary":"/",
      "operationId":"AddStudentUsingPOST",
      "consumes":[
        "application/json"
      ],
      "produces":[
        "*"
      ],
      "parameters":[
        {
          "in":"body",
          "name":"student",
          "description":"student",
          "required":true,
          "schema":{
            "$ref":"#/definitions/"
          }
        },
        {
          "name":"token",
          "in":"header",
          "description":"user token",
          "required":false,
          "type":"string"
        }
      ],
      "responses":Object{...},
      "deprecated":false
    }
  },
  "/Test/findStudent/{id}/{name}":{
    "get":{
      "tags":[
        "test-controller"
      ],
      "summary":"/",
      "operationId":"getStudentFromPathUsingGET",
      "produces":[
        "*"
      ],
      "parameters":[
        {
          "name":"id",
          "in":"path",
          "description":"ID",
          "required":true,
          "type":"integer",
          "format":"int32"
        },
        {
          "name":"name",
          "in":"path",
          "description":"",
          "required":true,
          "type":"string"
        },
        {
          "name":"token",
          "in":"header",
          "description":"user token",
          "required":false,
          "type":"string"
        }
      ],
      "responses":Object{...},

```

```

    "deprecated":false
  }
},
"/Test/modifyStudent":{
  "patch":{
    "tags":[
      "test-controller"
    ],
    "summary":"/id",
    "operationId":"editStudentUsingPATCH",
    "consumes":[
      "application/json"
    ],
    "produces":[
      "*"
    ],
    "parameters":[
      {
        "name":"age",
        "in":"query",
        "description":"",
        "required":true,
        "type":"integer",
        "format":"int32"
      },
      {
        "name":"name",
        "in":"query",
        "description":"",
        "required":true,
        "type":"string"
      },
      {
        "name":"token",
        "in":"header",
        "description":"user token",
        "required":false,
        "type":"string"
      }
    ],
    "responses":Object{...},
    "deprecated":false
  }
}
},
"definitions":{
  "":{
    "type":"object",
    "required":[
      "id"
    ],
    "properties":{
      "age":{
        "type":"integer",
        "format":"int32"
      },
      "id":{
        "type":"integer",
        "format":"int32",
        "description":""
      },
      "name":{
        "type":"string"
      }
    }
  },
  "title":""
}
}
}

```

## 2.2 swagger api request parameter

### 2.2.1

swagger api

parameterType	parameterRange	ifNull	validChar	caseSensitive
---------------	----------------	--------	-----------	---------------



VARCHAR2string	[ 3 , 20 ]	true	[ "uppercase" , "lowercas e" , "." ]	true
numberInteger	[ 1 , 20 ]swaggerInteger format  "format": "int32" "format": "double"	true	/	/
date	" [ 1900-01-01 , 2999-12-31 ]"	true	[ "yyyymmdd" ] /	
file	[ 1 , 10240 ]	true	[ "xml" , "js on" ]	true
enum	[ "a" , "b" , "c" , "d" ]	true	/	true

default\_value\_setting.json()jsonswagger api

### 2.2.3 swagger apijson

```
[
  {
    "parameterName": "/Test/addStudent_student_age",
    "parameterType": "number",
    "parameterRange": "[1, 20]",
    "ifNull": true
  },
  {
    "parameterName": "/Test/addStudent_student_name",
    "parameterType": "VARCHAR2",
    "parameterRange": [
      3,
      20
    ],
    "ifNull": true,
    "validChar": [
      "uppercase",
      "lowercase",
      "."
    ],
    "caseSensitive": true
  }
]
```

### 2.3 swagger api request parameter

swagger api request parameters >= 2 api request parameters [None, valid, invalid][ ]

## 3 Reference

<https://blog.csdn.net/enxiaobai123/article/details/105632361>

<https://www.cnblogs.com/xifengxiaoma/p/11022146.html>

[https://blog.csdn.net/qq\\_34528297/article/details/106248033](https://blog.csdn.net/qq_34528297/article/details/106248033)

## 4 Swagger

### 4.1

	type	format	
integer	integer	int32	32
long	integer	int64	64
float	number	float	
double	number	double	
string	string		

byte	string	byte	base64
binary	string	binary	
boolean	boolean		
date	string	date	full-date- - - - -RFC3339
datetime	string	date-time	date-time- - - - -RFC3339
password	string	password	

## 4.2 paramType

	paramType
@PathVariable	path
@RequestBody	body
@RequestPart	formData
@RequestHeader	header
@RequestParam	
MultipartFileCollection\ArrayMultipartFile	form
consumesapplication/x-www-form-urlencodedpost	form
consumesmultipart/form-datapost	formData
2	query
	body

## 5

[swagger](#)