drf-yasg Documentation

Release 1.1.3

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CHAPTER 1

drf-yasg - Yet another Swagger generator

Generate **real** Swagger/OpenAPI 2.0 specifications from a Django Rest Framework API.

Compatible with

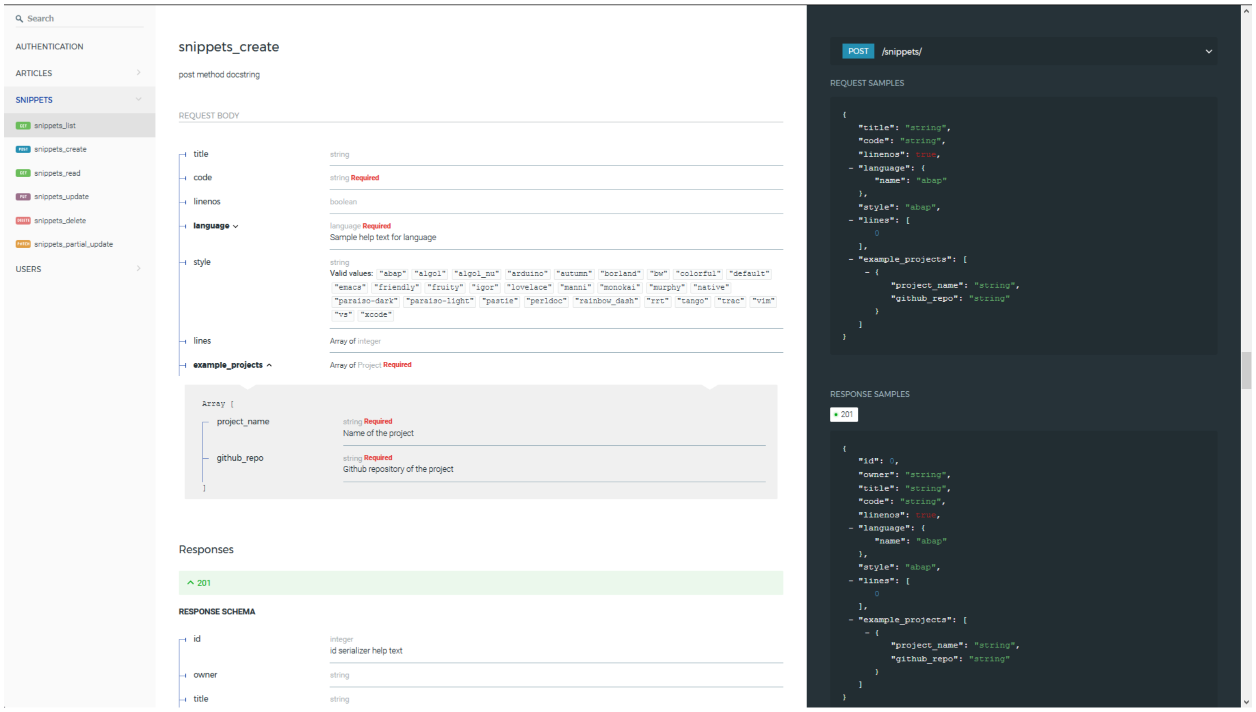
- **Django Rest Framework**: 3.7
- **Django**: 1.11, 2.0
- **Python**: 2.7, 3.4, 3.5, 3.6

Source: https://github.com/axnsan12/drf-yasg/

Documentation: https://drf-yasg.readthedocs.io/en/latest/

1.1 Features

- full support for nested Serializers and Schemas
- response schemas and descriptions
- model definitions compatible with codegen tools
- customization hooks at all points in the spec generation process
- JSON and YAML format for spec
- bundles latest version of swagger-ui and redoc for viewing the generated documentation
- schema view is cacheable out of the box
- generated Swagger schema can be automatically validated by swagger-spec-validator or flex



snippets_create

post method docstring

REQUEST BODY

title	string
code	string Required
linenos	boolean
language	language Required Sample help text for language
style	string Valid values: "abap" "algol" "algol_nu" "arduino" "autumn" "borland" "bw" "colorful" "default" "emacs" "friendly" "fruity" "igor" "lovelace" "manni" "monokai" "murphy" "native" "paraiso-dark" "paraiso-light" "pastie" "perldoc" "rainbow_dash" "rrt" "tango" "trac" "vim" "vs" "xcode"
lines	Array of integer
example_projects	Array of Project Required

Array [

project_name	string Required Name of the project
github_repo	string Required Github repository of the project

]

Responses

201

RESPONSE SCHEMA

id	integer id serializer help text
owner	string
title	string

POST /snippets/

REQUEST SAMPLES

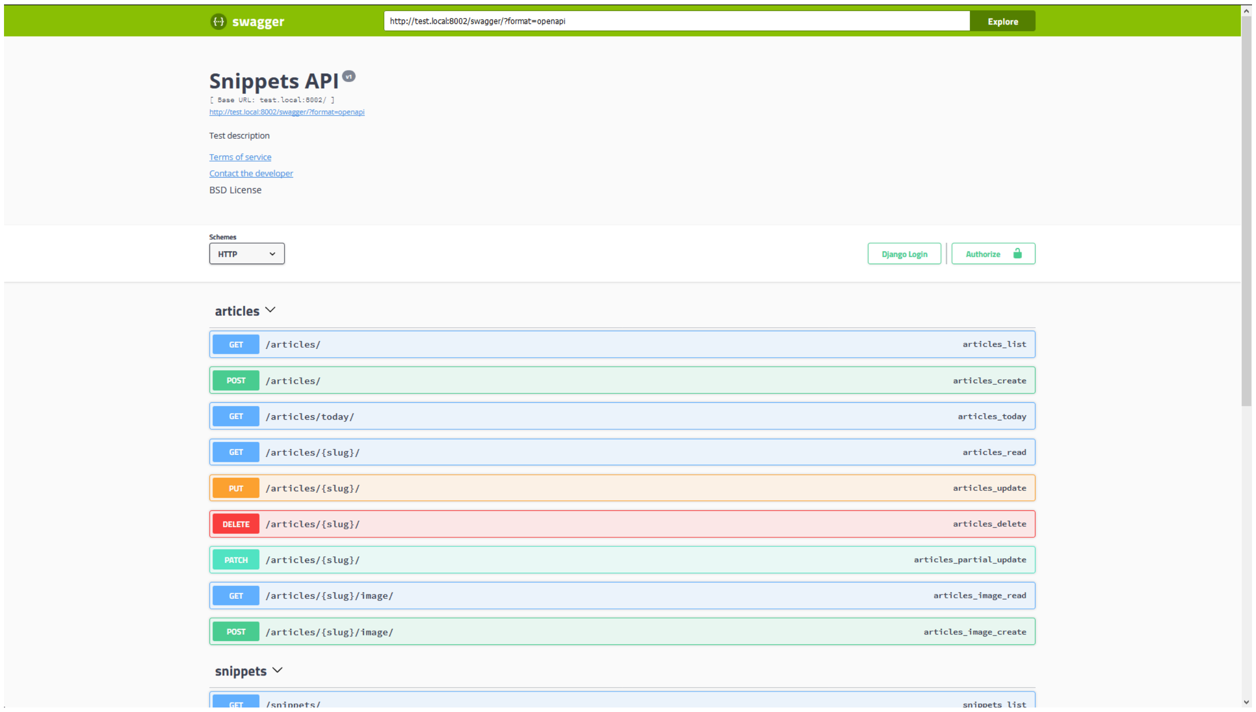
```
{
    "title": "string",
    "code": "string",
    "linenos": true,
  - "language": {
        "name": "abap"
    },
    "style": "abap",
  - "lines": [
        0
    ],
  - "example_projects": [
      - {
            "project_name": "string",
            "github_repo": "string"
        }
    ]
}
```

RESPONSE SAMPLES

201

```
{
    "id": 0,
    "owner": "string",
    "title": "string",
    "code": "string",
    "linenos": true,
  - "language": {
        "name": "abap"
    },
    "style": "abap",
  - "lines": [
        0
    ],
  - "example_projects": [
      - {
            "project_name": "string",
            "github_repo": "string"
        }
    ]
}
```

Fig. 1.1: **Fully nested request and response schemas.**



http://test.local:8002/swagger/?format=openapi

Snippets API v1

[Base URL: test.local:8002/]

http://test.local:8002/swagger/?format=openapi

Test description

Terms of service

Contact the developer

BSD License

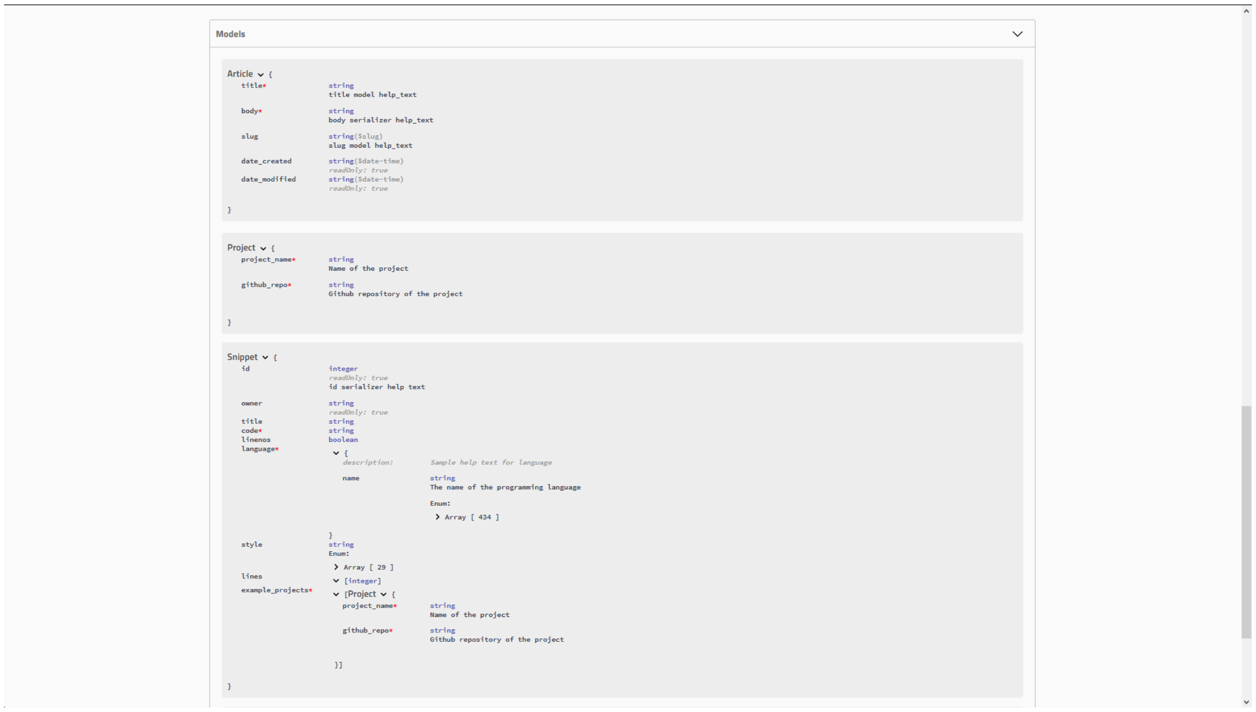
articles

GET	/articles/	articles_list
POST	/articles/	articles_create
GET	/articles/today/	articles_today
GET	/articles/{slug}/	articles_read
PUT	/articles/{slug}/	articles_update
DELETE	/articles/{slug}/	articles_delete
PATCH	/articles/{slug}/	articles_partial_update
GET	/articles/{slug}/image/	articles_image_read
POST	/articles/{slug}/image/	articles_image_create

snippets

GET	/snippets/	snippets_list

Fig. 1.2: **Choose between redoc and swagger-ui.**



```
Article {
   title*               string
                        title model help_text

   body*                string
                        body serializer help_text

   slug                 string($slug)
                        slug model help_text

   date_created         string($date-time)
                        readOnly: true
   date_modified        string($date-time)
                        readOnly: true

}

Project {
   project_name*        string
                        Name of the project

   github_repo*         string
                        Github repository of the project


}

Snippet {
   id                   integer
                        readOnly: true
                        id serializer help text

   owner                string
                        readOnly: true
   title                string
   code*                string
   linenos              boolean
   language*             {
                          description:       Sample help text for language

                          name               string
                                             The name of the programming language

                                             Enum:
                                              > Array [ 434 ]

                        }
   style                string
                        Enum:
                         > Array [ 29 ]
   lines                 [integer]
   example_projects*     [Project {
                          project_name*      string
                                             Name of the project

                          github_repo*       string
                                             Github repository of the project


                         }]
}
```

Fig. 1.3: **Real Model definitions.**

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1.3 Usage

1.3.1 0. Installation

The preferred instalation method is directly from pypi:

```
pip install drf-yasg
```

Additionally, if you want to use the built-in validation mechanisms (see *4. Validation*), you need to install some extra requirements:

```
pip install drf-yasg[validation]
```

1.3.2 1. Quickstart

In `settings.py`:

```
INSTALLED_APPS = [
   ...
   'drf_yasg',
   ...
]
```

In `urls.py`:

```
...
from drf_yasg.views import get_schema_view
from drf_yasg import openapi

...

schema_view = get_schema_view(
   openapi.Info(
      title="Snippets API",
      default_version='v1',
      description="Test description",
      terms_of_service="https://www.google.com/policies/terms/",
      contact=openapi.Contact(email="contact@snippets.local"),
      license=openapi.License(name="BSD License"),
   ),
   validators=['ssv', 'flex'],
    public=True,
    permission_classes=(permissions.AllowAny,),
)

urlpatterns = [
    url(r'^swagger(?P<format>.json|.yaml)$', schema_view.without_ui(cache_
↪timeout=None), name='schema-json'),
    url(r'^swagger/$', schema_view.with_ui('swagger', cache_timeout=None), name=
↪'schema-swagger-ui'),
    url(r'^redoc/$', schema_view.with_ui('redoc', cache_timeout=None), name='schema-
↪redoc'),
    ...
]
```

This exposes 4 cached, validated and publicly available endpoints:

- A JSON view of your API specification at `/swagger.json`
- A YAML view of your API specification at `/swagger.yaml`
- A swagger-ui view of your API specification at `/swagger/`
- A ReDoc view of your API specification at `/redoc/`

1.3.3 2. Configuration

a. `get_schema_view` parameters

- `info` - Required. Swagger API Info object
- `url` - API base url; if left blank will be deduced from the location the view is served at
- `patterns` - passed to SchemaGenerator
- `urlconf` - passed to SchemaGenerator
- `public` - if False, includes only endpoints the current user has access to
- `validators` - a list of validator names to apply on the generated schema; allowed values are `flex`, `ssv`
- `authentication_classes` - authentication classes for the schema view itself
- `permission_classes` - permission classes for the schema view itself

b. `SchemaView` options

- `SchemaView.with_ui(renderer, cache_timeout, cache_kwargs)` - get a view instance using the specified UI renderer; one of `swagger`, `redoc`
- `SchemaView.without_ui(cache_timeout, cache_kwargs)` - get a view instance with no UI renderer; same as `as_cached_view` with no kwargs
- `SchemaView.as_cached_view(cache_timeout, cache_kwargs, **initkwargs)` - same as `as_view`, but with optional caching
- you can, of course, call `as_view` as usual

All of the first 3 methods take two optional arguments, `cache_timeout` and `cache_kwargs`; if present, these are passed on to Django's `cached_page` decorator in order to enable caching on the resulting view. See *3. Caching*.

c. SWAGGER_SETTINGS and REDOC_SETTINGS

Additionally, you can include some more settings in your `settings.py` file. The possible settings and their default values are as follows:

```
SWAGGER_SETTINGS = {
    # default inspector classes, see advanced documentation
    'DEFAULT_AUTO_SCHEMA_CLASS': 'drf_yasg.inspectors.SwaggerAutoSchema',
    'DEFAULT_FIELD_INSPECTORS': [
        'drf_yasg.inspectors.CamelCaseJSONFilter',
        'drf_yasg.inspectors.ReferencingSerializerInspector',
        'drf_yasg.inspectors.RelatedFieldInspector',
        'drf_yasg.inspectors.ChoiceFieldInspector',
        'drf_yasg.inspectors.FileFieldInspector',
        'drf_yasg.inspectors.DictFieldInspector',
        'drf_yasg.inspectors.SimpleFieldInspector',
        'drf_yasg.inspectors.StringDefaultFieldInspector',
    ],
    'DEFAULT_FILTER_INSPECTORS': [
        'drf_yasg.inspectors.CoreAPICompatInspector',
    ],
    'DEFAULT_PAGINATOR_INSPECTORS': [
        'drf_yasg.inspectors.DjangoRestResponsePagination',
        'drf_yasg.inspectors.CoreAPICompatInspector',
    ],

    # default api Info if none is otherwise given; should be an import string to an␣
↪openapi.Info object
    'DEFAULT_INFO': None,
    # default API url if none is otherwise given
    'DEFAULT_API_URL': '',

    'USE_SESSION_AUTH': True,  # add Django Login and Django Logout buttons, CSRF␣
↪token to swagger UI page
    'LOGIN_URL': getattr(django.conf.settings, 'LOGIN_URL', None),  # URL for the␣
↪login button
    'LOGOUT_URL': getattr(django.conf.settings, 'LOGOUT_URL', None),  # URL for the␣
↪logout button

    # Swagger security definitions to include in the schema;
    # see https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md
↪#security-definitions-object
    'SECURITY_DEFINITIONS': {
        'basic': {
            'type': 'basic'
        }
    },

    # url to an external Swagger validation service; defaults to 'http://online.
↪swagger.io/validator/'
    # set to None to disable the schema validation badge in the UI
    'VALIDATOR_URL': '',

    # swagger-ui configuration settings, see https://github.com/swagger-api/swagger-ui/
↪blob/112bca906553a937ac67adc2e500bdeed96d067b/docs/usage/configuration.md#parameters
    'OPERATIONS_SORTER': None,
    'TAGS_SORTER': None,
    'DOC_EXPANSION': 'list',
    'DEEP_LINKING': False,
    'SHOW_EXTENSIONS': True,
    'DEFAULT_MODEL_RENDERING': 'model',
    'DEFAULT_MODEL_DEPTH': 3,
}
```

```
REDOC_SETTINGS = {
    # ReDoc UI configuration settings, see https://github.com/Rebilly/ReDoc#redoc-tag-
↪attributes
    'LAZY_RENDERING': True,
    'HIDE_HOSTNAME': False,
    'EXPAND_RESPONSES': 'all',
    'PATH_IN_MIDDLE': False,
}
```

1.3.4 3. Caching

Since the schema does not usually change during the lifetime of the django process, there is out of the box support for caching the schema view in-memory, with some sane defaults:

- caching is enabled by the cache_page decorator, using the default Django cache backend, can be changed using the `cache_kwargs` argument
- HTTP caching of the response is blocked to avoid confusing situations caused by being shown stale schemas
- the cached schema varies on the `Cookie` and `Authorization` HTTP headers to enable filtering of visible endpoints according to the authentication credentials of each user; note that this means that every user accessing the schema will have a separate schema cached in memory.

1.3.5 4. Validation

Given the numerous methods to manually customzie the generated schema, it makes sense to validate the result to ensure it still conforms to OpenAPI 2.0. To this end, validation is provided at the generation point using python swagger libraries, and can be activated by passing `validators=['ssv', 'flex']` to `get_schema_view`; if the generated schema is not valid, a `SwaggerValidationError` is raised by the handling codec.

Warning: This internal validation can slow down your server. Caching can mitigate the speed impact of validation.

The provided validation will catch syntactic errors, but more subtle violations of the spec might slip by them. To ensure compatibility with code generation tools, it is recommended to also employ one or more of the following methods:

`swagger-ui` validation badge

Online

If your schema is publicly accessible, *swagger-ui* will automatically validate it against the official swagger online validator and display the result in the bottom-right validation badge.

Offline

If your schema is not accessible from the internet, you can run a local copy of swagger-validator and set the *VALIDATOR_URL* accordingly:

```
SWAGGER_SETTINGS = {
    ...
    'VALIDATOR_URL': 'http://localhost:8189',
    ...
}
```

```
$ docker run --name swagger-validator -d -p 8189:8080 --add-host test.local:10.0.75.1␣
↪swaggerapi/swagger-validator
84dabd52ba967c32ae6b660934fa6a429ca6bc9e594d56e822a858b57039c8a2
$ curl http://localhost:8189/debug?url=http://test.local:8002/swagger/?format=openapi
{}
```

Using `swagger-cli`

https://www.npmjs.com/package/swagger-cli

```
$ npm install -g swagger-cli
[...]
$ swagger-cli validate http://test.local:8002/swagger.yaml
http://test.local:8002/swagger.yaml is valid
```

Manually on editor.swagger.io

Importing the generated spec into https://editor.swagger.io/ will automatically trigger validation on it. This method is currently the only way to get both syntactic and semantic validation on your specification. The other validators only provide JSON schema-level validation, but miss things like duplicate operation names, improper content types, etc

1.3.6 5. Code generation

You can use the specification outputted by this library together with swagger-codegen to generate client code in your language of choice:

```
$ docker run --rm -v ${PWD}:/local swaggerapi/swagger-codegen-cli generate -i /local/
↪tests/reference.yaml -l javascript -o /local/.codegen/js
```

See the github page linked above for more details.

1.3.7 6. Example project

For additional usage examples, you can take a look at the test project in the `testproj` directory:

```
$ git clone https://github.com/axnsan12/drf-yasg.git
$ cd drf-yasg
$ virtualenv venv
$ source venv/bin/activate
(venv) $ cd testproj
(venv) $ pip install -r requirements.txt
(venv) $ python manage.py migrate
(venv) $ python manage.py shell -c "import createsuperuser"
(venv) $ python manage.py runserver
(venv) $ firefox localhost:8000/swagger/
```

1.4 Background

`OpenAPI 2.0/Swagger` is a format designed to encode information about a Web API into an easily parsable schema that can then be used for rendering documentation, generating code, etc.

More details are available on swagger.io and on the OpenAPI 2.0 specification page.

From here on, the terms "OpenAPI" and "Swagger" are used interchangeably.

1.4.1 Swagger in Django Rest Framework

Since Django Rest 3.7, there is now built in support for automatic OpenAPI 2.0 schema generation. However, this generation is based on the coreapi standard, which for the moment is vastly inferior to OpenAPI in both features and tooling support. In particular, the OpenAPI codec/compatibility layer provided has a few major problems:

- there is no support for documenting response schemas and status codes
- nested schemas do not work properly
- does not handle more complex fields such as `FileField`, `ChoiceField`, ...

In short this makes the generated schema unusable for code generation, and mediocre at best for documentation.

1.4.2 Other libraries

There are currently two decent Swagger schema generators that I could find for django-rest-framework:

- django-rest-swagger
- drf-openapi

Out of the two, `django-rest-swagger` is just a wrapper around DRF 3.7 schema generation with an added UI, and thus presents the same problems. `drf-openapi` is a bit more involved and implements some custom handling for response schemas, but ultimately still falls short in code generation because the responses are plain of lacking support for named schemas.

Both projects are also currently unmantained.

1.5 Third-party integrations

1.5.1 djangorestframework-camel-case

Integration with djangorestframework-camel-case is provided out of the box - if you have `djangorestframework-camel-case` installed and your `APIView` uses `CamelCaseJSONParser` or `CamelCaseJSONRenderer`, all property names will be converted to *camelCase* by default.

CHAPTER 2

Serving the schema

2.1 get_schema_view and the SchemaView class

The *get_schema_view()* function and the *SchemaView* class it returns (click links for documentation) are intended to cover the majority of use cases one might want to configure. The class returned by *get_schema_view()* can be used to obtain view instances via *SchemaView.with_ui()*, *SchemaView.without_ui()* and *SchemaView.as_cached_view()* - see *1. Quickstart* in the README for a usage example.

You can also subclass *SchemaView* by extending the return value of *get_schema_view()*, e.g.:

```
SchemaView = get_schema_view(info, ...)

class CustomSchemaView(SchemaView):
    generator_class = CustomSchemaGenerator
    renderer_classes = (CustomRenderer1, CustomRenderer2,)
```

2.2 Renderers and codecs

If you need to modify how your Swagger spec is presented in views, you might want to override one of the renderers in *renderers* or one of the codecs in *codecs*. The codec is the last stage where the Swagger object arrives before being transformed into bytes, while the renderer is the stage responsible for tying toghether the codec and the view.

You can use your custom renderer classes as kwargs to *SchemaView.as_cached_view()* or by subclassing *SchemaView*.

2.3 Management command

New in version 1.1.1.

If you only need a swagger spec file in YAML or JSON format, you can use the `generate_swagger` management command to get it without having to start the web server:

```
$ python manage.py generate_swagger swagger.json
```

See the command help for more advanced options:

```
$ python manage.py generate_swagger --help
usage: manage.py generate_swagger [-h] [--version] [-v {0,1,2,3}]
   ... more options ...
```

Note: The *DEFAULT_INFO* setting must be defined when using the `generate_swagger` command. For example, the *README quickstart* code could be modified as such:

In `settings.py`:

```
SWAGGER_SETTINGS = {
   'DEFAULT_INFO': 'import.path.to.urls.api_info',
}
```

In `urls.py`:

```
api_info = openapi.Info(
   title="Snippets API",
   ... other arguments ...
)

schema_view = get_schema_view(
   # the info argument is no longer needed here as it will be picked up from DEFAULT_
↪INFO
   ... other arguments ...
)
```

CHAPTER 3

Custom schema generation

If the default spec generation does not quite match what you were hoping to achieve, `drf-yasg` provides some custom behavior hooks by default.

3.1 Swagger spec overview

This library generates OpenAPI 2.0 documents. The authoritative specification for this document's structure will always be the official documentation over at swagger.io and the OpenAPI 2.0 specification page.

Beause the above specifications are a bit heavy and convoluted, here is a general overview of how the specification is structured, starting from the root `Swagger` object.

- ***`Swagger`*** **object**
  - `info`, `schemes`, `securityDefinitions` and other informative attributes
  - **`paths`: *`Paths`* object** A list of all the paths in the API in the form of a mapping
    - **`{path}`: *`PathItem`* - each *`PathItem`* has multiple operations keyed by method**
      - **`{http_method}`: *`Operation`*** Each operation is thus uniquely identified by its `(path, http_method)` combination, e.g. `GET /articles/`, `POST /articles/`, etc.
      - `parameters`: [*`Parameter`*] - and a list of path parameters
  - **`definitions`: named Models** A list of all the named models in the API in the form of a mapping
    - `{ModelName}`: *`Schema`*
- ***`Operation`*** **contains the following information about each operation:**
  - **`parameters`: [*`Parameter`*]** A list of all the *query*, *header* and *form* parameters accepted by the operation.
    - there can also be **at most one** body parameter whose structure is represented by a *`Schema`* or a reference to one (*`SchemaRef`*)

  - **responses: *Responses*** A list of all the possible responses the operation is expected to return. Each response can optionally have a *Schema* which describes the structure of its body.
    * {status_code}: *Response* - mapping of status code to response definition
  - operationId - should be unique across all operations
  - tags - used to group operations in the listing

It is interesting to note the main differences between *Parameter* and *Schema* objects:

Schema	*Parameter*
Can nest other Schemas	Cannot nest other Parameters Can only nest a Schema if the parameter is in: body
Cannot describe file uploads - file is not permitted as a value for type	Can describe file uploads via type = file, but only as part of a form *Operation*[1]
Can be used in *Responses*	Cannot be used in *Responses*
Cannot be used in form *Operations*[1]	Can be used in form *Operations*[1]
Can only describe request or response bodies	Can describe query, form, header or path parameters

3.2 Default behavior

This section describes where information is sourced from when using the default generation process.

- *Paths* are generated by exploring the patterns registered in your default urlconf, or the patterns and urlconf you specified when constructing *OpenAPISchemaGenerator*; only views inheriting from Django Rest Framework's APIView are looked at, all other views are ignored
- path *Parameters* are generated by looking in the URL pattern for any template parameters; attempts are made to guess their type from the views queryset and lookup_field, if applicable. You can override path parameters via manual_parameters in *@swagger_auto_schema*.
- query *Parameters* - i.e. parameters specified in the URL as /path/?query1=value&query2=value - are generated from your view's filter_backends and paginator, if any are declared. Additional parameters can be specified via the query_serializer and manual_parameters arguments of *@swagger_auto_schema*
- The request body is only generated for the HTTP POST, PUT and PATCH methods, and is sourced from the view's serializer_class. You can also override the request body using the request_body argument of *@swagger_auto_schema*.
  - if the view represents a form request (that is, all its parsers are of the multipart/form-data or application/x-www-form-urlencoded media types), the request body will be output as form *Parameters*
  - if it is not a form request, the request body will be output as a single body *Parameter* wrapped around a *Schema*
- header *Parameters* are supported by the OpenAPI specification but are never generated by this library; you can still add them using manual_parameters.
- *Responses* are generated as follows:

[1] a form Operation is an *Operation* that consumes multipart/form-data or application/x-www-form-urlencoded content
- a form Operation cannot have body parameters
- a non-form operation cannot have form parameters

   - if `responses` is provided to *@swagger_auto_schema* and contains at least one success status code (i.e. any *2xx* status code), no automatic response is generated and the given response is used as described in the `@swagger_auto_schema documentation`
   - otherwise, an attempt is made to generate a default response:
      * the success status code is assumed to be `204` for ``DELETE` requests, `201` for `POST` requests, and `200` for all other request methods
      * if the view has a request body, the same `Serializer` or *Schema* as in the request body is used in generating the *Response* schema; this is inline with the default `GenericAPIView` and `GenericViewSet` behavior
      * if the view has no request body, its `serializer_class` is used to generate the *Response* schema
      * if the view is a list view (as defined by *is_list_view()*), the response schema is wrapped in an array
      * if the view is also paginated, the response schema is then wrapped in the appropriate paging response structure
      * the description of the response is left blank

- *Response* headers are supported by the OpenAPI specification but not currently supported by this library; you can still add them manually by providing an appropriately structured dictionary to the `headers` property of a *Response* object
- *descriptions* for *Operation*s, *Parameter*s and *Schema*s are picked up from docstrings and `help_text` attributes in the same manner as the default DRF SchemaGenerator

3.3 The `@swagger_auto_schema` decorator

You can use the *@swagger_auto_schema* decorator on view functions to override some properties of the generated *Operation*. For example, in a `ViewSet`,

```
@swagger_auto_schema(operation_description="partial_update description override",␣
↪responses={404: 'slug not found'})
def partial_update(self, request, *args, **kwargs):
   """partial_update method docstring"""
   ...
```

will override the description of the `PATCH /article/{id}/` operation, and document a 404 response with no body and the given description.

Where you can use the *@swagger_auto_schema* decorator depends on the type of your view:

- for function based `@api_view`s, because the same view can handle multiple methods, and thus represent multiple operations, you have to add the decorator multiple times if you want to override different operations:

```
test_param = openapi.Parameter('test', openapi.IN_QUERY, description=
↪"test manual param", type=openapi.TYPE_BOOLEAN)
user_response = openapi.Response('response description', UserSerializer)

# 'method' can be used to customize a single HTTP method of a view
@swagger_auto_schema(method='get', manual_parameters=[test_param],␣
↪responses={200: user_response})
# 'methods' can be used to apply the same modification to multiple␣
↪methods
```

```
@swagger_auto_schema(methods=['put', 'post'], request_
↪body=UserSerializer)
@api_view(['GET', 'PUT', 'POST'])
def user_detail(request, pk):
    ...
```

- for class based APIView, GenericAPIView and non-ViewSet derivatives, you have to decorate the respective method of each operation:

```
class UserList(APIView):
   @swagger_auto_schema(responses={200: UserSerializer(many=True)})
   def get(self, request):
      ...

   @swagger_auto_schema(operation_description="description")
   def post(self, request):
      ...
```

- for ViewSet, GenericViewSet, ModelViewSet, because each viewset corresponds to multiple **paths**, you have to decorate the *action methods*, i.e. list, create, retrieve, etc. Additionally, @list_routes or @detail_routes defined on the viewset, like function based api views, can respond to multiple HTTP methods and thus have multiple operations that must be decorated separately:

```
class ArticleViewSet(viewsets.ModelViewSet):
   # method or 'methods' can be skipped because the list_route only␣
↪handles a single method (GET)
   @swagger_auto_schema(operation_description='GET /articles/today/')
   @list_route(methods=['get'])
   def today(self, request):
      ...

   @swagger_auto_schema(method='get', operation_description="GET /
↪articles/{id}/image/")
   @swagger_auto_schema(method='post', operation_description="POST /
↪articles/{id}/image/")
   @detail_route(methods=['get', 'post'], parser_
↪classes=(MultiPartParser,))
   def image(self, request, id=None):
      ...

   @swagger_auto_schema(operation_description="PUT /articles/{id}/")
   def update(self, request, *args, **kwargs):
      ...

   @swagger_auto_schema(operation_description="PATCH /articles/{id}/")
   def partial_update(self, request, *args, **kwargs):
      ...
```

Tip: If you want to customize the generation of a method you are not implementing yourself, you can use swagger_auto_schema in combination with Django's method_decorator:

```
@method_decorator(name='list', decorator=swagger_auto_schema(
    operation_description="description from swagger_auto_schema via method_decorator"
))
class ArticleViewSet(viewsets.ModelViewSet):
   ...
```

This allows you to avoid unnecessarily overriding the method.

Tip: You can go even further and directly decorate the result of `as_view`, in the same manner you would override an `@api_view` as described above:

```
decorated_login_view = \
   swagger_auto_schema(
      method='post',
      responses={status.HTTP_200_OK: LoginResponseSerializer}
   )(LoginView.as_view())

urlpatterns = [
   ...
   url(r'^login/$', decorated_login_view, name='login')
]
```

This can allow you to avoid skipping an unnecessary *subclass* altogether.

Warning: However, do note that both of the methods above can lead to unexpected (and maybe surprising) results by replacing/decorating methods on the base class itself.

3.4 Serializer `Meta` nested class

You can define some per-serializer options by adding a `Meta` class to your serializer, e.g.:

```
class WhateverSerializer(Serializer):
   ...

   class Meta:
      ... options here ...
```

Currently, the only option you can add here is

- `ref_name` - a string which will be used as the model definition name for this serializer class; setting it to `None` will force the serializer to be generated as an inline model everywhere it is used

3.5 Subclassing and extending

3.5.1 `SwaggerAutoSchema`

For more advanced control you can subclass *`SwaggerAutoSchema`* - see the documentation page for a list of methods you can override.

You can put your custom subclass to use by setting it on a view method using the *@swagger_auto_schema* decorator described above, by setting it as a class-level attribute named `swagger_schema` on the view class, or *globally via settings*.

For example, to generate all operation IDs as camel case, you could do:

```
from inflection import camelize

class CamelCaseOperationIDAutoSchema(SwaggerAutoSchema):
   def get_operation_id(self, operation_keys):
      operation_id = super(CamelCaseOperationIDAutoSchema, self).get_operation_
↪id(operation_keys)
      return camelize(operation_id, uppercase_first_letter=False)


SWAGGER_SETTINGS = {
   'DEFAULT_AUTO_SCHEMA_CLASS': 'path.to.CamelCaseOperationIDAutoSchema',
   ...
}
```

3.5.2 `OpenAPISchemaGenerator`

If you need to control things at a higher level than *Operation* objects (e.g. overall document structure, vendor extensions in metadata) you can also subclass *OpenAPISchemaGenerator* - again, see the documentation page for a list of its methods.

This custom generator can be put to use by setting it as the *generator_class* of a *SchemaView* using *get_schema_view()*.

3.5.3 `Inspector` classes

New in version 1.1.

For customizing behavior related to specific field, serializer, filter or paginator classes you can implement the *FieldInspector*, *SerializerInspector*, *FilterInspector*, *PaginatorInspector* classes and use them with *@swagger_auto_schema* or one of the *related settings*.

A *FilterInspector* that adds a description to all `DjangoFilterBackend` parameters could be implemented like so:

```
class DjangoFilterDescriptionInspector(CoreAPICompatInspector):
   def get_filter_parameters(self, filter_backend):
      if isinstance(filter_backend, DjangoFilterBackend):
         result = super(DjangoFilterDescriptionInspector, self).get_filter_
↪parameters(filter_backend)
         for param in result:
            if not param.get('description', ''):
               param.description = "Filter the returned list by {field_name}".
↪format(field_name=param.name)

         return result

      return NotHandled

@method_decorator(name='list', decorator=swagger_auto_schema(
   filter_inspectors=[DjangoFilterDescriptionInspector]
))
class ArticleViewSet(viewsets.ModelViewSet):
   filter_backends = (DjangoFilterBackend,)
   filter_fields = ('title',)
   ...
```

A second example, of a *FieldInspector* that removes the `title` attribute from all generated *Schema* objects:

```
class NoSchemaTitleInspector(FieldInspector):
   def process_result(self, result, method_name, obj, **kwargs):
      # remove the `title` attribute of all Schema objects
      if isinstance(result, openapi.Schema.OR_REF):
         # traverse any references and alter the Schema object in place
         schema = openapi.resolve_ref(result, self.components)
         schema.pop('title', None)

         # no ``return schema`` here, because it would mean we always generate
         # an inline `object` instead of a definition reference

      # return back the same object that we got - i.e. a reference if we got a␣
↪reference
      return result


class NoTitleAutoSchema(SwaggerAutoSchema):
   field_inspectors = [NoSchemaTitleInspector] + swagger_settings.DEFAULT_FIELD_
↪INSPECTORS

class ArticleViewSet(viewsets.ModelViewSet):
   swagger_schema = NoTitleAutoSchema
   ...
```

Note: A note on references - *Schema* objects are sometimes output by reference (*SchemaRef*); in fact, that is how named models are implemented in OpenAPI:

- in the output swagger document there is a `definitions` section containing *Schema* objects for all models
- every usage of a model refers to that single *Schema* object - for example, in the ArticleViewSet above, all requests and responses containg an `Article` model would refer to the same schema definition by a `'$ref': '#/definitions/Article'`

This is implemented by only generating **one** *Schema* object for every serializer **class** encountered.

This means that you should generally avoid view or method-specific `FieldInspectors` if you are dealing with references (a.k.a named models), because you can never know which view will be the first to generate the schema for a given serializer.

CHAPTER 4

Customizing the web UI

There is currently no pluggable way of customizing the web UI apart from the settings available in *Swagger UI settings* and *ReDoc UI settings*. If you really need to, you can override one of the `drf-yasg/swagger-ui.html` or `drf-yasg/redoc.html` templates that are used for rendering.

CHAPTER 5

Settings

Settings are configurable in `settings.py` by defining `SWAGGER_SETTINGS` or `REDOC_SETTINGS`.

Example:

settings.py

```
SWAGGER_SETTINGS = {
    'SECURITY_DEFINITIONS': {
        'basic': {
            'type': 'basic'
        }
    },
    ...
}

REDOC_SETTINGS = {
   'LAZY_RENDERING': True,
   ...
}
```

The possible settings and their default values are as follows:

5.1 `SWAGGER_SETTINGS`

5.1.1 Default classes

DEFAULT_AUTO_SCHEMA_CLASS

`ViewInspector` subclass that will be used by default for generating *`Operation`* objects when iterating over endpoints. Can be overriden by using the *auto_schema* argument of *`@swagger_auto_schema`* or by a `swagger_schema` attribute on the view class.

Default: *`drf_yasg.inspectors.SwaggerAutoSchema`*

DEFAULT_FIELD_INSPECTORS

List of `FieldInspector` subclasses that will be used by default for inspecting serializers and serializer fields. Field inspectors given to `@swagger_auto_schema` will be prepended to this list.

Default: `['drf_yasg.inspectors.CamelCaseJSONFilter', 'drf_yasg.inspectors.ReferencingSerializerInspector', 'drf_yasg.inspectors.RelatedFieldInspector', 'drf_yasg.inspectors.ChoiceFieldInspector', 'drf_yasg.inspectors.FileFieldInspector', 'drf_yasg.inspectors.DictFieldInspector', 'drf_yasg.inspectors.SimpleFieldInspector', 'drf_yasg.inspectors.StringDefaultFieldInspector',]`

DEFAULT_FILTER_INSPECTORS

List of `FilterInspector` subclasses that will be used by default for inspecting filter backends. Filter inspectors given to `@swagger_auto_schema` will be prepended to this list.

Default: `[ 'drf_yasg.inspectors.CoreAPICompatInspector', ]`

DEFAULT_PAGINATOR_INSPECTORS

List of `PaginatorInspector` subclasses that will be used by default for inspecting paginators. Paginator inspectors given to `@swagger_auto_schema` will be prepended to this list.

Default: `[ 'drf_yasg.inspectors.DjangoRestResponsePagination', 'drf_yasg.inspectors.CoreAPICompatInspector', ]`

5.1.2 Swagger document attributes

DEFAULT_INFO

An import string to an `openapi.Info` object. This will be used when running the `generate_swagger` management command, or if no `info` argument is passed to `get_schema_view`.

Default: `None`

DEFAULT_API_URL

A string representing the default API URL. This will be used to populate the `host`, `schemes` and `basePath` attributes of the Swagger document if no API URL is otherwise provided.

Default: `''`

5.1.3 Authorization

USE_SESSION_AUTH

Enable/disable Django login as an authentication/authorization mechanism. If True, a login/logout button will be displayed in Swagger UI.

Default: `True`

LOGIN_URL

URL for the Django Login action when using *USE_SESSION_AUTH*.

Default: `django.conf.settings.LOGIN_URL`

LOGOUT_URL

URL for the Django Logout action when using *USE_SESSION_AUTH*.

Default: `django.conf.settings.LOGOUT_URL`

SECURITY_DEFINITIONS

Swagger security definitions to be included in the specification. See https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md#security-definitions-object.

Default:

```
'basic': {
   'type': 'basic'
}
```

5.1.4 Swagger UI settings

Swagger UI configuration settings. See https://github.com/swagger-api/swagger-ui/blob/112bca906553a937ac67adc2e500bdeed96d067b/docs/usage/configuration.md#parameters.

VALIDATOR_URL

URL pointing to a swagger-validator instance; used for the validation badge shown in swagger-ui. Can be modified to point to a local install of swagger-validator or set to `None` to remove the badge.

Default: `'http://online.swagger.io/validator/'` *Maps to parameter*: `validatorUrl`

OPERATIONS_SORTER

Sorting order for the operation list of each tag.

- `None`: show in the order returned by the server
- `alpha`: sort alphabetically by path
- `method`: sort by HTTP method

Default: `None` *Maps to parameter*: `operationsSorter`

TAGS_SORTER

Sorting order for tagged operation groups.

- `None`: Swagger UI default ordering
- `alpha`: sort alphabetically

Default: `None` *Maps to parameter*: `tagsSorter`

DOC_EXPANSION

Controls the default expansion setting for the operations and tags.

- `None`: everything is collapsed
- `list`: only tags are expanded
- `full`: all operations are expanded

Default: `'list'` *Maps to parameter*: `docExpansion`

DEEP_LINKING

Automatically update the fragment part of the URL with permalinks to the currently selected operation.

Default: `False` *Maps to parameter*: `deepLinking`

SHOW_EXTENSIONS

Show vendor extension (`x-..`) fields.

Default: `True` *Maps to parameter*: `showExtensions`

DEFAULT_MODEL_RENDERING

Controls whether operations show the model structure or the example value by default.

- `model`: show the model fields by default
- `example`: show the example value by default

Default: `'model'` *Maps to parameter*: `defaultModelRendering`

DEFAULT_MODEL_DEPTH

Controls how many levels are expaned by default when showing nested models.

Default: `3` *Maps to parameter*: `defaultModelExpandDepth`

5.2 `REDOC_SETTINGS`

5.2.1 ReDoc UI settings

ReDoc UI configuration settings. See https://github.com/Rebilly/ReDoc#redoc-tag-attributes.

LAZY_RENDERING

Default: `True` *Maps to attribute*: `lazy-rendering`

HIDE_HOSTNAME

Default: `False` *Maps to attribute*: `hide-hostname`

EXPAND_RESPONSES

Default: `'all'` *Maps to attribute*: `expand-responses`

PATH_IN_MIDDLE

Default: `False` *Maps to attribute*: `path-in-middle-panel`

CHAPTER 6

Contributing

Contributions are always welcome and appreciated! Here are some ways you can contribut.

6.1 Issues

You can and should open an issue for any of the following reasons:

- you found a bug; steps for reproducing, or a pull request with a failing test case will be greatly appreciated
- you wanted to do something but did not find a way to do it after reading the documentation
- you believe the current way of doing something is more complicated or less elegant than it can be
- a related feature that you want is missing from the package

Please always check for existing issues before opening a new issue.

6.2 Pull requests

You want to contribute some code? Great! Here are a few steps to get you started:

1. **Fork the repository on GitHub**
2. **Clone your fork and create a branch for the code you want to add**
3. **Create a new virtualenv and install the package in development mode**

```
$ virtualenv venv
$ source venv/bin/activate
(venv) $ pip install -e .[validation]
(venv) $ pip install -rrequirements/dev.txt -rrequirements/test.txt "Django>=1.11.
↪7"
```

4. **Make your changes and check them against the test project**

```
(venv) $ cd testproj
(venv) $ python manage.py migrate
(venv) $ python manage.py shell -c "import createsuperuser"
(venv) $ python manage.py runserver
(venv) $ firefox localhost:8000/swagger/
```

5. **Update the tests if necessary**

   You can find them in the `tests` directory.

   If your change modifies the expected schema output, you should regenerate the reference schema at `tests/reference.yaml`:

```
(venv) $ cd testproj
(venv) $ python manage.py generate_swagger ../tests/reference.yaml --overwrite --
↪user admin --url http://test.local:8002/
```

   After checking the git diff to verify that no unexpected changes appeared, you should commit the new `reference.yaml` together with your changes.

6. **Run tests. The project is setup to use tox and pytest for testing**

```
# (optional) sort imports with isort and check flake8 linting
(venv) $ isort --apply
(venv) $ flake8 src/drf_yasg testproj tests setup.py
# run tests in the current environment, faster than tox
(venv) $ pytest --cov
# (optional) run tests for other python versions in separate environments
(venv) $ tox
```

7. **Update documentation**

   If the change modifies behaviour or adds new features, you should update the documentation and `README.rst` accordingly. Documentation is written in reStructuredText and built using Sphinx. You can find the sources in the `docs` directory.

   To build and check the docs, run

```
(venv) $ tox -e docs
```

8. **Push your branch and submit a pull request to the master branch on GitHub**

   Incomplete/Work In Progress pull requests are encouraged, because they allow you to get feedback and help more easily.

9. **Your code must pass all the required travis jobs before it is merged**

   As of now, this consists of running on Python 2.7, 3.4, 3.5 and 3.6, and building the docs succesfully.

CHAPTER 7

License

7.1 BSD 3-Clause License

CHAPTER 8

Changelog

8.1 1.1.3

- **FIXED:** schema view cache will now always `Vary` on the `Cookie` and `Authentication` (the `Vary` header was previously only added if `public` was set to `True`) - this fixes issues related to Django authentication in `swagger-ui` and `CurrentUserDefault` values in the schema

8.2 1.1.2

- **IMPROVED:** updated `swagger-ui` to version 3.8.1
- **IMPROVED:** removed some unneeded static files

8.3 1.1.1

- **ADDED:** *generate_swagger management command* (#29, #31, thanks to @beaugunderson)
- **FIXED:** fixed improper generation of `\Z` regex tokens - will now be repalced by `$`

8.4 1.1.0

- **ADDED:** added support for APIs versioned with `URLPathVersioning` or `NamespaceVersioning`
- **ADDED:** added ability to recursively customize schema generation *using pluggable inspector classes*
- **ADDED:** added `operation_id` parameter to *`@swagger_auto_schema`*
- **ADDED:** integration with djangorestframework-camel-case (#28)

- **IMPROVED:** strings, arrays and integers will now have min/max validation attributes inferred from the field-level validators
- **FIXED:** fixed a bug that caused `title` to never be generated for Schemas; `title` is now correctly populated from the field's `label` property

8.5 1.0.6

- **FIXED:** Swagger UI "Try it out!" should now work with Django login
- **FIXED:** callable `default` values on serializer fields will now be properly called (#24, #25)
- **IMPROVED:** updated `swagger-ui` to version 3.8.0
- **IMPROVED:** `PrimaryKeyRelatedField` and `SlugRelatedField` will now have appropriate types based on the related model (#26)
- **IMPROVED:** mock views will now have a bound request even with `public=False` (#23)

8.6 1.0.5

- **FIXED:** fixed a crash caused by having read-only Serializers nested by reference
- **FIXED:** removed erroneous backslashes in paths when routes are generated using Django 2 path()
- **IMPROVED:** updated `swagger-ui` to version 3.7.0
- **IMPROVED:** `FileField` is now generated as an URL or file name in response Schemas (#21, thanks to @h-hirokawa)

8.7 1.0.4

- **FIXED:** fixed improper generation of YAML references
- **ADDED:** added `query_serializer` parameter to *`@swagger_auto_schema`* (#16, #17)

8.8 1.0.3

- **FIXED:** fixed bug that caused schema views returned from cache to fail (#14)
- **FIXED:** disabled automatic generation of response schemas for form operations to avoid confusing errors caused by attempting to shove file parameters into Schema objects

8.9 1.0.2

- First published version

CHAPTER 9

Source code documentation

- genindex
- modindex
- search

9.1 drf_yasg package

9.1.1 drf_yasg.codecs

drf_yasg.codecs.**_validate_flex**(*spec*, *codec*)

drf_yasg.codecs.**_validate_swagger_spec_validator**(*spec*, *codec*)

drf_yasg.codecs.**VALIDATORS = {'ssv': <function _validate_swagger_spec_validator>, 'flex':**

class drf_yasg.codecs.**_OpenAPICodec**(*validators*)

Bases: object

media_type = None

validators

List of validator names to apply

encode(*document*)

Transform an *Swagger* object to a sequence of bytes.

Also performs validation and applies settings.

Parameters document (openapi.Swagger) – Swagger spec object as generated by *OpenAPISchemaGenerator*

Returns binary encoding of document

Return type bytes

encode_error(*err*)
Dump an error message into an encoding-appropriate sequence of bytes

_dump_dict(*spec*)
Dump the given dictionary into its string representation.

Parameters **spec** (`dict`) – a python dict

Returns string representation of `spec`

Return type str

generate_swagger_object(*swagger*)
Generates the root Swagger object.

Parameters **swagger** (`openapi.Swagger`) – Swagger spec object as generated by *OpenAPISchemaGenerator*

Returns swagger spec as dict

Return type OrderedDict

class drf_yasg.codecs.**OpenAPICodecJson**(*validators*)
Bases: *drf_yasg.codecs._OpenAPICodec*

media_type = 'application/json'

_dump_dict(*spec*)
Dump `spec` into JSON.

drf_yasg.codecs.**yaml_sane_dump**(*data*, *binary*)
Dump the given data dictionary into a sane format:

- OrderedDicts are dumped as regular mappings instead of non-standard !!odict
- multi-line mapping style instead of json-like inline style
- list elements are indented into their parents
- YAML references/aliases are disabled

Parameters

- **data** (`dict`) – the data to be dumped
- **binary** (`bool`) – True to return a utf-8 encoded binary object, False to return a string

Returns the serialized YAML

Return type str,bytes

drf_yasg.codecs.**yaml_sane_load**(*stream*)
Load the given YAML stream while preserving the input order for mapping items.

Parameters **stream** – YAML stream (can be a string or a file-like object)

Return type OrderedDict

class drf_yasg.codecs.**OpenAPICodecYaml**(*validators*)
Bases: *drf_yasg.codecs._OpenAPICodec*

media_type = 'application/yaml'

_dump_dict(*spec*)
Dump `spec` into YAML.

9.1.2 drf_yasg.errors

exception `drf_yasg.errors.`**`SwaggerError`**

Bases: `Exception`

exception `drf_yasg.errors.`**`SwaggerValidationError`**(*msg*, *validator_name*, *spec*, *source_codec*, **args*)

Bases: *`drf_yasg.errors.SwaggerError`*

exception `drf_yasg.errors.`**`SwaggerGenerationError`**

Bases: *`drf_yasg.errors.SwaggerError`*

9.1.3 drf_yasg.generators

class `drf_yasg.generators.`**`EndpointEnumerator`**(*patterns=None*, *urlconf=None*)

Bases: `rest_framework.schemas.generators.EndpointEnumerator`

`get_path_from_regex`(*path_regex*)

`unescape`(*s*)

Unescape all backslash escapes from *s*.

Parameters **`s`** (*`str`*) – string with backslash escapes

Return type str

`unescape_path`(*path*)

Remove backslashes from all path components outside {parameters}. This is needed because Django>=2.0 `path()`/`RoutePattern` aggresively escapes all non-parameter path components.

NOTE: this might destructively affect some url regex patterns that contain metacharacters (e.g. w, d) outside path parameter groups; if you are in this category, God help you

Parameters **`path`** (*`str`*) – path possibly containing

Returns the unescaped path

Return type str

class `drf_yasg.generators.`**`OpenAPISchemaGenerator`**(*info*, *version=''*, *url=''*, *patterns=None*, *urlconf=None*)

Bases: `object`

This class iterates over all registered API endpoints and returns an appropriate OpenAPI 2.0 compliant schema. Method implementations shamelessly stolen and adapted from rest-framework `SchemaGenerator`.

Parameters

- **`info`** (`Info`) – information about the API
- **`version`** (*`str`*) – API version string; can be omitted to use *info.default_version*
- **`url`** (*`str`*) – API url; can be empty to remove URL info from the result
- **`patterns`** – if given, only these patterns will be enumerated for inclusion in the API spec
- **`urlconf`** – if patterns is not given, use this urlconf to enumerate patterns; if not given, the default urlconf is used

`endpoint_enumerator_class`

alias of *`EndpointEnumerator`*

`url`

get_schema(*request=None*, *public=False*)
Generate a *Swagger* object representing the API schema.

Parameters

- **request** (*Request*) – the request used for filtering accesible endpoints and finding the spec URI
- **public** (*bool*) – if True, all endpoints are included regardless of access through *request*

Returns the generated Swagger specification

Return type *openapi.Swagger*

create_view(*callback*, *method*, *request=None*)
Create a view instance from a view callback as registered in urlpatterns.

Parameters

- **callback** (*callable*) – view callback registered in urlpatterns
- **method** (*str*) – HTTP method
- **request** (*rest_framework.request.Request*) – request to bind to the view

Returns the view instance

replace_version(*endpoints*, *request*)
If `request.version` is not `None`, replace the version parameter in the path of any endpoints using `URLPathVersioning` as a versioning class.

Parameters

- **endpoints** (*dict*) – endpoints as returned by *get_endpoints()*
- **request** (*Request*) – the request made against the schema view

Returns endpoints with modified paths

get_endpoints(*request*)
Iterate over all the registered endpoints in the API and return a fake view with the right parameters.

Parameters **request** (*rest_framework.request.Request*) – request to bind to the endpoint views

Returns {path: (view_class, list[(http_method, view_instance)])

Return type dict

get_operation_keys(*subpath*, *method*, *view*)
Return a list of keys that should be used to group an operation within the specification.

```
/users/                   ("users", "list"), ("users", "create")
/users/{pk}/              ("users", "read"), ("users", "update"), ("users",
↪"delete")
/users/enabled/           ("users", "enabled")  # custom viewset list action
/users/{pk}/star/         ("users", "star")     # custom viewset detail␣
↪action
/users/{pk}/groups/       ("users", "groups", "list"), ("users", "groups",
↪"create")
/users/{pk}/groups/{pk}/  ("users", "groups", "read"), ("users", "groups",
↪"update")
```

Parameters

- **subpath** (*str*) – path to the operation with any common prefix/base path removed
- **method** (*str*) – HTTP method
- **view** – the view associated with the operation

Return type tuple

determine_path_prefix(*paths*)

Given a list of all paths, return the common prefix which should be discounted when generating a schema structure.

This will be the longest common string that does not include that last component of the URL, or the last component before a path parameter.

For example:

```
/api/v1/users/
/api/v1/users/{pk}/
```

The path prefix is `/api/v1/`.

Parameters **paths** (*list[str]*) – list of paths

Return type str

get_paths(*endpoints*, *components*, *request*, *public*)

Generate the Swagger Paths for the API from the given endpoints.

Parameters

- **endpoints** (*dict*) – endpoints as returned by get_endpoints
- **components** (`ReferenceResolver`) – resolver/container for Swagger References
- **request** (*Request*) – the request made against the schema view; can be None
- **public** (*bool*) – if True, all endpoints are included regardless of access through *request*

Return type *openapi.Paths*

get_operation(*view*, *path*, *prefix*, *method*, *components*, *request*)

Get an *Operation* for the given API endpoint (path, method). This method delegates to *get_operation()* of a *ViewInspector* determined according to settings and *@swagger_auto_schema* overrides.

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **prefix** (*str*) – common path prefix among all endpoints
- **method** (*str*) – the http method of the operation
- **components** (`openapi.ReferenceResolver`) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

Return type *openapi.Operation*

get_path_item(*path*, *view_cls*, *operations*)
Get a `PathItem` object that describes the parameters and operations related to a single path in the API.

Parameters

- **path** (*str*) – the path
- **view_cls** (*type*) – the view that was bound to this path in urlpatterns
- **operations** (*dict[str,* `openapi.Operation`*]*) – operations defined on this path, keyed by lowercase HTTP method

Return type *openapi.PathItem*

get_overrides(*view*, *method*)
Get overrides specified for a given operation.

Parameters

- **view** – the view associated with the operation
- **method** (*str*) – HTTP method

Returns a dictionary containing any overrides set by `@swagger_auto_schema`

Return type dict

get_path_parameters(*path*, *view_cls*)
Return a list of Parameter instances corresponding to any templated path variables.

Parameters

- **path** (*str*) – templated request path
- **view_cls** (*type*) – the view class associated with the path

Returns path parameters

Return type list[*openapi.Parameter*]

9.1.4 drf_yasg.inspectors

drf_yasg.inspectors.**NotHandled = <object object>**
The most base type

class drf_yasg.inspectors.**BaseInspector**(*view*, *path*, *method*, *components*, *request*)
Bases: `object`

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **components** (`openapi.ReferenceResolver`) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

probe_inspectors(*inspectors*, *method_name*, *obj*, *initkwargs=None*, ***kwargs*)
Probe a list of inspectors with a given object. The first inspector in the list to return a value that is not `NotHandled` wins.

Parameters

- **inspectors** (*list[type[BaseInspector]]*) – list of inspectors to probe
- **method_name** (*str*) – name of the target method on the inspector
- **obj** – first argument to inspector method
- **initkwargs** (*dict*) – extra kwargs for instantiating inspector class
- **kwargs** – additional arguments to inspector method

Returns the return value of the winning inspector, or `None` if no inspector handled the object

process_result (*result*, *method_name*, *obj*, ***kwargs*)

After an inspector handles an object (i.e. returns a value other than *NotHandled*), all inspectors that were probed get the chance to alter the result, in reverse order. The inspector that handled the object is the first to receive a `process_result` call with the object it just returned.

This behaviour is similar to the Django request/response middleware processing.

If this inspector has no post-processing to do, it should just `return result` (the default implementation).

Parameters

- **result** – the return value of the winning inspector, or `None` if no inspector handled the object
- **method_name** (*str*) – name of the method that was called on the inspector
- **obj** – first argument passed to inspector method
- **kwargs** – additional arguments passed to inspector method

Returns

class drf_yasg.inspectors.**FilterInspector** (*view*, *path*, *method*, *components*, *request*)

Bases: *drf_yasg.inspectors.BaseInspector*

Base inspector for filter backends.

Responsible for determining extra query parameters added by given filter backends.

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **components** (*openapi.ReferenceResolver*) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

get_filter_parameters (*filter_backend*)

Get the filter parameters for a single filter backend **instance**.

Should return *NotHandled* if this inspector does not know how to handle the given *filter_backend*.

Parameters **filter_backend** (*BaseFilterBackend*) – the filter backend

Return type list[*openapi.Parameter*]

class drf_yasg.inspectors.**PaginatorInspector** (*view*, *path*, *method*, *components*, *request*)

Bases: *drf_yasg.inspectors.BaseInspector*

Base inspector for paginators.

Responisble for determining extra query parameters and response structure added by given paginators.

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **components** (openapi.ReferenceResolver) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

get_paginated_response(*paginator*, *response_schema*)

Add appropriate paging fields to a response *Schema*.

Should return *NotHandled* if this inspector does not know how to handle the given *paginator*.

Parameters

- **paginator** (*BasePagination*) – the paginator
- **response_schema** (openapi.Schema) – the response schema that must be paged.

Return type *openapi.Schema*

get_paginator_parameters(*paginator*)

Get the pagination parameters for a single paginator **instance**.

Should return *NotHandled* if this inspector does not know how to handle the given *paginator*.

Parameters **paginator** (*BasePagination*) – the paginator

Return type list[*openapi.Parameter*]

class drf_yasg.inspectors.**FieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.BaseInspector*

Base inspector for serializers and serializer fields.

_get_partial_types(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

Helper method to extract generic information from a field and return a partial constructor for the appropriate openapi object.

All arguments are the same as *field_to_swagger_object()*.

The return value is a tuple consisting of:

- a function for constructing objects of *swagger_object_type*; its prototype is:

```
def SwaggerType(existing_object=None, **instance_kwargs):
```

  This function creates an instance of *swagger_object_type*, passing the following attributes to its init, in order of precedence:

  – arguments specified by the `kwargs` parameter of *_get_partial_types()*

  – `instance_kwargs` passed to the constructor function

  – `title`, `description`, `required` and `default` inferred from the field, where appropriate

  If `existing_object` is not `None`, it is updated instead of creating a new object.

- a type that should be used for child objects if *field* is of an array type. This can currently have two values:

  – *Schema* if *swagger_object_type* is *Schema*

  - `Items` if *swagger_object_type* is `Parameter` or `Items`

  Return type tuple[callable,(type[*openapi.Schema*],type[*openapi.Items*])]

`field_to_swagger_object` (*field*, *swagger_object_type*, *use_references*, ***kwargs*)
Convert a drf Serializer or Field instance into a Swagger object.

Should return `NotHandled` if this inspector does not know how to handle the given *field*.

Parameters

- **`field`** (*`rest_framework.serializers.Field`*) – the source field
- **`swagger_object_type`** (*`type[openapi.SwaggerDict]`*) – should be one of Schema, Parameter, Items
- **`use_references`** (*`bool`*) – if False, forces all objects to be declared inline instead of by referencing other components
- **`kwargs`** – extra attributes for constructing the object; if swagger_object_type is Parameter, `name` and `in_` should be provided

Returns the swagger object

Return type *openapi.Parameter*,*openapi.Items*,*openapi.Schema*,*openapi.SchemaRef*

`probe_field_inspectors` (*field*, *swagger_object_type*, *use_references*, ***kwargs*)
Helper method for recursively probing *field_inspectors* to handle a given field.

All arguments are the same as `field_to_swagger_object()`.

Return type *openapi.Parameter*,*openapi.Items*,*openapi.Schema*,*openapi.SchemaRef*

class `drf_yasg.inspectors.`**`SerializerInspector`** (*view*, *path*, *method*, *components*, *request*, *field_inspectors*)
Bases: `drf_yasg.inspectors.FieldInspector`

`get_request_parameters` (*serializer*, *in_*)
Convert a DRF serializer into a list of `Parameter`s.

Should return `NotHandled` if this inspector does not know how to handle the given *serializer*.

Parameters

- **`serializer`** (*`serializers.BaseSerializer`*) – the `Serializer` instance
- **`in`** (*`str`*) – the location of the parameters, one of the *openapi.IN_** constants

Return type list[*openapi.Parameter*]

`get_schema` (*serializer*)
Convert a DRF Serializer instance to an `openapi.Schema`.

Should return `NotHandled` if this inspector does not know how to handle the given *serializer*.

Parameters **`serializer`** (*`serializers.BaseSerializer`*) – the `Serializer` instance

Return type *openapi.Schema*

class `drf_yasg.inspectors.`**`ViewInspector`** (*view*, *path*, *method*, *components*, *request*, *overrides*)
Bases: `drf_yasg.inspectors.BaseInspector`

Inspector class responsible for providing `Operation` definitions given a view, path and method.

Parameters **overrides** (*dict*) – manual overrides as passed to *@swagger_auto_schema*

_prepend_inspector_overrides (*inspectors*)

body_methods = ('PUT', 'PATCH', 'POST')

field_inspectors = [<class 'drf_yasg.inspectors.field.CamelCaseJSONFilter'>, <class 'd

filter_inspectors = [<class 'drf_yasg.inspectors.query.CoreAPICompatInspector'>]

get_filter_parameters ()

Return the parameters added to the view by its filter backends.

Return type list[*openapi.Parameter*]

get_operation (*operation_keys*)

Get an `Operation` for the given API endpoint (path, method). This includes query, body parameters and response schemas.

Parameters **operation_keys** (*tuple[str]*) – an array of keys describing the hierarchical layout of this view in the API; e.g. `('snippets', 'list')`, `('snippets', 'retrieve')`, etc.

Return type *openapi.Operation*

get_paginated_response (*response_schema*)

Add appropriate paging fields to a response `Schema`.

Parameters **response_schema** (`openapi.Schema`) – the response schema that must be paged.

Returns the paginated response class:*.Schema*, or `None` in case of an unknown pagination scheme

Return type *openapi.Schema*

get_pagination_parameters ()

Return the parameters added to the view by its paginator.

Return type list[*openapi.Parameter*]

paginator_inspectors = [<class 'drf_yasg.inspectors.query.DjangoRestResponsePagination

serializer_to_parameters (*serializer*, *in_*)

Convert a serializer to a possibly empty list of `Parameter`s.

Parameters

- **serializer** (*serializers.BaseSerializer*) – the `Serializer` instance
- **in** (*str*) – the location of the parameters, one of the *openapi.IN_** constants

Return type list[*openapi.Parameter*]

serializer_to_schema (*serializer*)

Convert a serializer to an OpenAPI `Schema`.

Parameters **serializer** (*serializers.BaseSerializer*) – the `Serializer` instance

Returns the converted `Schema`, or `None` in case of an unknown serializer

Return type *openapi.Schema*,*openapi.SchemaRef*,None

should_filter ()

Determine whether filter backend parameters should be included for this request.

Return type bool

should_page()
Determine whether paging parameters and structure should be added to this operation's request and response.

Return type bool

class drf_yasg.inspectors.**CoreAPICompatInspector**(*view*, *path*, *method*, *components*, *request*)
Bases: *drf_yasg.inspectors.PaginatorInspector*, *drf_yasg.inspectors.FilterInspector*

Converts `coreapi.Fields` to *openapi.Parameter*s for filters and paginators that implement a `get_schema_fields` method.

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **components** (`openapi.ReferenceResolver`) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

coreapi_field_to_parameter(*field*)
Convert an instance of *coreapi.Field* to a swagger *Parameter* object.

Parameters **field** (*coreapi.Field*) –

Return type *openapi.Parameter*

get_filter_parameters(*filter_backend*)

get_paginator_parameters(*paginator*)

class drf_yasg.inspectors.**DjangoRestResponsePagination**(*view*, *path*, *method*, *components*, *request*)
Bases: *drf_yasg.inspectors.PaginatorInspector*

Provides response schema pagination warpping for django-rest-framework's LimitOffsetPagination, PageNumberPagination and CursorPagination

Parameters

- **view** – the view associated with this endpoint
- **path** (*str*) – the path component of the operation URL
- **method** (*str*) – the http method of the operation
- **components** (`openapi.ReferenceResolver`) – referenceable components
- **request** (*Request*) – the request made against the schema view; can be None

get_paginated_response(*paginator*, *response_schema*)

class drf_yasg.inspectors.**InlineSerializerInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)
Bases: *drf_yasg.inspectors.SerializerInspector*

Provides serializer conversions using *FieldInspector.field_to_swagger_object()*.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

get_parameter_name(*field_name*)

get_property_name(*field_name*)

get_request_parameters(*serializer*, *in_*)

get_schema(*serializer*)

use_definitions = False

class drf_yasg.inspectors.**ReferencingSerializerInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.InlineSerializerInspector*

use_definitions = True

class drf_yasg.inspectors.**RelatedFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Provides conversions for `RelatedField`s.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**SimpleFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Provides conversions for fields which can be described using just `type`, `format`, `pattern` and min/max validators.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**FileFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Provides conversions for `FileField`s.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**ChoiceFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Provides conversions for `ChoiceField` and `MultipleChoiceField`.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**DictFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Provides conversion for `DictField`.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**StringDefaultFieldInspector**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

For otherwise unhandled fields, return them as plain *TYPE_STRING* objects.

field_to_swagger_object(*field*, *swagger_object_type*, *use_references*, ***kwargs*)

class drf_yasg.inspectors.**CamelCaseJSONFilter**(*view*, *path*, *method*, *components*, *request*, *field_inspectors*)

Bases: *drf_yasg.inspectors.FieldInspector*

Converts property names to camelCase if `CamelCaseJSONParser` or `CamelCaseJSONRenderer` are used.

is_camel_case()

process_result(*result*, *method_name*, *obj*, ***kwargs*)

class drf_yasg.inspectors.**SwaggerAutoSchema**(*view*, *path*, *method*, *components*, *request*, *overrides*)

Bases: *drf_yasg.inspectors.ViewInspector*

add_manual_parameters(*parameters*)

Add/replace parameters from the given list of automatically generated request parameters.

Parameters **parameters** (*list[openapi.Parameter]*) – genereated parameters

Returns modified parameters

Return type list[*openapi.Parameter*]

get_consumes()

Return the MIME types this endpoint can consume.

Return type list[str]

get_default_responses()

Get the default responses determined for this view from the request serializer and request method.

Type dict[str, openapi.Schema]

get_description()

Return an operation description determined as appropriate from the view's method and class docstrings.

Returns the operation description

Return type str

get_operation(*operation_keys*)

get_operation_id(*operation_keys*)

Return an unique ID for this operation. The ID must be unique across all *Operation* objects in the API.

Parameters **operation_keys** (*tuple[str]*) – an array of keys derived from the pathdescribing the hierarchical layout of this view in the API; e.g. `('snippets', 'list')`, `('snippets', 'retrieve')`, etc.

Return type str

get_query_parameters()

Return the query parameters accepted by this view.

Return type list[*openapi.Parameter*]

get_query_serializer()

Return the query serializer (used for parsing query parameters) for this endpoint.

Returns the query serializer, or `None`

get_request_body_parameters(*consumes*)

Return the request body parameters for this view. This is either:

- a list with a single object Parameter with a *Schema* derived from the request serializer
- a list of primitive Parameters parsed as form data

Parameters **consumes** (*list[str]*) – a list of accepted MIME types as returned by *get_consumes()*

Returns a (potentially empty) list of `Parameter`s either `in: body` or `in: formData`

Return type list[*openapi.Parameter*]

`get_request_body_schema`(*serializer*)
Return the `Schema` for a given request's body data. Only applies to PUT, PATCH and POST requests.

Parameters **`serializer`** – the view's request serializer as returned by `get_request_serializer()`

Return type *openapi.Schema*

`get_request_form_parameters`(*serializer*)
Given a Serializer, return a list of `in: formData` `Parameter`s.

Parameters **`serializer`** – the view's request serializer as returned by `get_request_serializer()`

Return type list[*openapi.Parameter*]

`get_request_serializer`()
Return the request serializer (used for parsing the request payload) for this endpoint.

Returns the request serializer, or one of `Schema`, `SchemaRef`, `None`

`get_response_schemas`(*response_serializers*)
Return the `openapi.Response` objects calculated for this view.

Parameters **`response_serializers`** (*`dict`*) – response serializers as returned by `get_response_serializers()`

Returns a dictionary of status code to `Response` object

Return type dict[str, *openapi.Response*]

`get_response_serializers`()
Return the response codes that this view is expected to return, and the serializer for each response body. The return value should be a dict where the keys are possible status codes, and values are either strings, `Serializer`s, `Schema`, `SchemaRef` or `Response` objects. See `@swagger_auto_schema` for more details.

Returns the response serializers

Return type dict

`get_responses`()
Get the possible responses for this view as a swagger `Responses` object.

Returns the documented responses

Return type *openapi.Responses*

`get_tags`(*operation_keys*)
Get a list of tags for this operation. Tags determine how operations relate with each other, and in the UI each tag will show as a group containing the operations that use it.

Parameters **`operation_keys`** (*`tuple[str]`*) – an array of keys derived from the pathdescribing the hierarchical layout of this view in the API; e.g. `('snippets', 'list')`, `('snippets', 'retrieve')`, etc.

Return type list[str]

`get_view_serializer`()
Return the serializer as defined by the view's `get_serializer()` method.

Returns the view's `Serializer`

`make_body_parameter`(*schema*)
Given a *`Schema`* object, create an `in: body` *`Parameter`*.

Parameters **`schema`** (`openapi.Schema`) – the request body schema

Return type *openapi.Parameter*

9.1.5 drf_yasg.middleware

`class` `drf_yasg.middleware.`**`SwaggerExceptionMiddleware`**(*get_response*)
Bases: `object`

`process_exception`(*request, exception*)

9.1.6 drf_yasg.openapi

`drf_yasg.openapi.`**`TYPE_OBJECT = 'object'`**

`drf_yasg.openapi.`**`TYPE_STRING = 'string'`**

`drf_yasg.openapi.`**`TYPE_NUMBER = 'number'`**

`drf_yasg.openapi.`**`TYPE_INTEGER = 'integer'`**

`drf_yasg.openapi.`**`TYPE_BOOLEAN = 'boolean'`**

`drf_yasg.openapi.`**`TYPE_ARRAY = 'array'`**

`drf_yasg.openapi.`**`TYPE_FILE = 'file'`**

`drf_yasg.openapi.`**`FORMAT_DATE = 'date'`**

`drf_yasg.openapi.`**`FORMAT_DATETIME = 'date-time'`**

`drf_yasg.openapi.`**`FORMAT_PASSWORD = 'password'`**

`drf_yasg.openapi.`**`FORMAT_BINARY = 'binary'`**

`drf_yasg.openapi.`**`FORMAT_BASE64 = 'bytes'`**

`drf_yasg.openapi.`**`FORMAT_FLOAT = 'float'`**

`drf_yasg.openapi.`**`FORMAT_DOUBLE = 'double'`**

`drf_yasg.openapi.`**`FORMAT_INT32 = 'int32'`**

`drf_yasg.openapi.`**`FORMAT_INT64 = 'int64'`**

`drf_yasg.openapi.`**`FORMAT_EMAIL = 'email'`**

`drf_yasg.openapi.`**`FORMAT_IPV4 = 'ipv4'`**

`drf_yasg.openapi.`**`FORMAT_IPV6 = 'ipv6'`**

`drf_yasg.openapi.`**`FORMAT_URI = 'uri'`**

`drf_yasg.openapi.`**`FORMAT_UUID = 'uuid'`**

`drf_yasg.openapi.`**`FORMAT_SLUG = 'slug'`**

`drf_yasg.openapi.`**`IN_BODY = 'body'`**

`drf_yasg.openapi.`**`IN_PATH = 'path'`** `drf_yasg.openapi.`**`IN_QUERY = 'query'`**

`drf_yasg.openapi.`**`IN_FORM = 'formData'`**

`drf_yasg.openapi.`**`IN_HEADER = 'header'`**

`drf_yasg.openapi.`**`SCHEMA_DEFINITIONS = 'definitions'`**

`drf_yasg.openapi.`**`make_swagger_name`**(*attribute_name*)

Convert a python variable name into a Swagger spec attribute name.

In particular,

- if name starts with `x_`, return `x-{camelCase}`
- if name is `ref`, return `$ref`
- else return the name converted to camelCase, with trailing underscores stripped

Parameters **`attribute_name`** (*`str`*) – python attribute name

Returns swagger name

`class` `drf_yasg.openapi.`**`SwaggerDict`**(***attrs*)

Bases: `collections.OrderedDict`

A particular type of OrderedDict, which maps all attribute accesses to dict lookups using *`make_swagger_name()`*. Attribute names starting with _ are set on the object as-is and are not included in the specification output.

Used as a base class for all Swagger helper models.

`_insert_extras__`()

From an ordering perspective, it is desired that extra attributes such as vendor extensions stay at the bottom of the object. However, python2.7's OrderdDict craps out if you try to insert into it before calling init. This means that subclasses must call super().__init__ as the first statement of their own __init__, which would result in the extra attributes being added first. For this reason, we defer the insertion of the attributes and require that subclasses call ._insert_extras__ at the end of their __init__ method.

`static _as_odict`(*obj*, *memo*)

Implementation detail of *`as_odict()`*

`as_odict`()

Convert this object into an `OrderedDict` instance.

Return type OrderedDict

`class` `drf_yasg.openapi.`**`Contact`**(*name=None*, *url=None*, *email=None*, ***extra*)

Bases: *`drf_yasg.openapi.SwaggerDict`*

Swagger Contact object

At least one of the following fields is required:

Parameters

- **`name`** (*`str`*) – contact name
- **`url`** (*`str`*) – contact url
- **`email`** (*`str`*) – contact e-mail

`class` `drf_yasg.openapi.`**`License`**(*name*, *url=None*, ***extra*)

Bases: *`drf_yasg.openapi.SwaggerDict`*

Swagger License object

Parameters

- **name** (*str*) – Required. License name
- **url** (*str*) – link to detailed license information

class drf_yasg.openapi.**Info**(*title*, *default_version*, *description=None*, *terms_of_service=None*, *contact=None*, *license=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Swagger Info object

Parameters

- **title** (*str*) – Required. API title.
- **default_version** (*str*) – Required. API version string (not to be confused with Swagger spec version)
- **description** (*str*) – API description; markdown supported
- **terms_of_service** (*str*) – API terms of service; should be a URL
- **contact** (Contact) – contact object
- **license** (License) – license object

class drf_yasg.openapi.**Swagger**(*info=None*, *_url=None*, *_version=None*, *paths=None*, *definitions=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Root Swagger object.

Parameters

- **info** (Info) – info object
- **_url** (*str*) – URL used for guessing the API host, scheme and basepath
- **_version** (*str*) – version string to override Info
- **paths** (Paths) – paths object
- **definitions** (*dict[str,*Schema*]*) – named models

class drf_yasg.openapi.**Paths**(*paths*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

A listing of all the paths in the API.

Parameters paths (*dict[str,*PathItem*]*) –

class drf_yasg.openapi.**PathItem**(*get=None*, *put=None*, *post=None*, *delete=None*, *options=None*, *head=None*, *patch=None*, *parameters=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Information about a single path

Parameters

- **get** (Operation) – operation for GET
- **put** (Operation) – operation for PUT
- **post** (Operation) – operation for POST
- **delete** (Operation) – operation for DELETE
- **options** (Operation) – operation for OPTIONS
- **head** (Operation) – operation for HEAD
- **patch** (Operation) – operation for PATCH

- **parameters** (*list[Parameter]*) – parameters that apply to all operations

class drf_yasg.openapi.**Operation**(*operation_id*, *responses*, *parameters=None*, *consumes=None*, *produces=None*, *summary=None*, *description=None*, *tags=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Information about an API operation (path + http method combination)

Parameters

- **operation_id** (*str*) – operation ID, should be unique across all operations
- **responses** (Responses) – responses returned
- **parameters** (*list[Parameter]*) – parameters accepted
- **consumes** (*list[str]*) – content types accepted
- **produces** (*list[str]*) – content types produced
- **summary** (*str*) – operation summary; should be < 120 characters
- **description** (*str*) – operation description; can be of any length and supports markdown
- **tags** (*list[str]*) – operation tags

class drf_yasg.openapi.**Items**(*type=None*, *format=None*, *enum=None*, *pattern=None*, *items=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Used when defining an array *Parameter* to describe the array elements.

Parameters

- **type** (*str*) – type of the array elements; must not be `object`
- **format** (*str*) – value format, see OpenAPI spec
- **enum** (*list*) – restrict possible values
- **pattern** (*str*) – pattern if type is `string`
- **items** (Items) – only valid if *type* is `array`

class drf_yasg.openapi.**Parameter**(*name*, *in_*, *description=None*, *required=None*, *schema=None*, *type=None*, *format=None*, *enum=None*, *pattern=None*, *items=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Describe parameters accepted by an *Operation*. Each parameter should be a unique combination of (*name*, *in_*). `body` and `form` parameters in the same operation are mutually exclusive.

Parameters

- **name** (*str*) – parameter name
- **in** (*str*) – parameter location
- **description** (*str*) – parameter description
- **required** (*bool*) – whether the parameter is required for the operation
- **schema** (Schema, SchemaRef) – required if *in_* is `body`
- **type** (*str*) – parameter type; required if *in_* is not `body`; must not be `object`
- **format** (*str*) – value format, see OpenAPI spec
- **enum** (*list*) – restrict possible values

- **`pattern`** (*`str`*) – pattern if type is `string`
- **`items`** (`Items`) – only valid if *type* is `array`

class `drf_yasg.openapi.`**`Schema`**(*title=None*, *description=None*, *type=None*, *format=None*, *enum=None*, *pattern=None*, *properties=None*, *additional_properties=None*, *required=None*, *items=None*, *default=None*, *read_only=None*, ***extra*)

Bases: *`drf_yasg.openapi.SwaggerDict`*

Describes a complex object accepted as parameter or returned as a response.

Parameters

- **`title`** (*`str`*) – schema title
- **`description`** (*`str`*) – schema description
- **`type`** (*`str`*) – value type; required
- **`format`** (*`str`*) – value format, see OpenAPI spec
- **`enum`** (*`list`*) – restrict possible values
- **`pattern`** (*`str`*) – pattern if type is `string`
- **`properties`** (*`list[Schema,SchemaRef]`*) – object properties; required if *type* is `object`
- **`additional_properties`** (*`bool,Schema,SchemaRef`*) – allow wildcard properties not listed in *properties*
- **`required`** (*`list[str]`*) – list of requried property names
- **`items`** (`Schema,SchemaRef`) – type of array items, only valid if *type* is `array`
- **`default`** – only valid when insider another `Schema`'s `properties`; the default value of this property if it is not provided, must conform to the type of this Schema
- **`read_only`** – only valid when insider another `Schema`'s `properties`; declares the property as read only - it must only be sent as part of responses, never in requests

`OR_REF = (<class 'drf_yasg.openapi.Schema'>, <class 'drf_yasg.openapi.SchemaRef'>)`

useful for type-checking, e.g `isinstance(obj, openapi.Schema.OR_REF)`

class `drf_yasg.openapi.`**`_Ref`**(*resolver*, *name*, *scope*, *expected_type*)

Bases: *`drf_yasg.openapi.SwaggerDict`*

Base class for all reference types. A reference object has only one property, `$ref`, which must be a JSON reference to a valid object in the specification, e.g. `#/definitions/Article` to refer to an article model.

Parameters

- **`resolver`** (`ReferenceResolver`) – component resolver which must contain the referneced object
- **`name`** (*`str`*) – referenced object name, e.g. "Article"
- **`scope`** (*`str`*) – reference scope, e.g. "definitions"
- **`expected_type`** (*`type[SwaggerDict]`*) – the expected type that will be asserted on the object found in resolver

`ref_name_re = re.compile('#/(?P<scope>.+)/(?P<name>[^/]+)$')`

`resolve`(*resolver*)

Get the object targeted by this reference from the given component resolver.

Parameters **`resolver`** (`ReferenceResolver`) – component resolver which must contain the referneced object

Returns the target object

class drf_yasg.openapi.**SchemaRef**(*resolver*, *schema_name*)

Bases: *drf_yasg.openapi._Ref*

Adds a reference to a named Schema defined in the `#/definitions/` object.

Parameters

- **resolver** (ReferenceResolver) – component resolver which must contain the definition
- **schema_name** (`str`) – schema name

drf_yasg.openapi.**resolve_ref**(*ref_or_obj*, *resolver*)

Resolve *ref_or_obj* if it is a reference type. Return it unchaged if not.

Parameters

- **ref_or_obj** (SwaggerDict,_Ref) –
- **resolver** – component resolver which must contain the referenced object

class drf_yasg.openapi.**Responses**(*responses*, *default=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Describes the expected responses of an *Operation*.

Parameters

- **responses** (*dict[(str,int),*Response*]*) – mapping of status code to response definition
- **default** (Response) – description of the response structure to expect if another status code is returned

class drf_yasg.openapi.**Response**(*description*, *schema=None*, *examples=None*, ***extra*)

Bases: *drf_yasg.openapi.SwaggerDict*

Describes the structure of an operation's response.

Parameters

- **description** (`str`) – response description
- **schema** (Schema,SchemaRef) – sturcture of the response body
- **examples** (`dict`) – example bodies mapped by mime type

class drf_yasg.openapi.**ReferenceResolver**(**scopes*)

Bases: `object`

A mapping type intended for storing objects pointed at by Swagger Refs. Provides support and checks for different refernce scopes, e.g. 'definitions'.

For example:

```
> components = ReferenceResolver('definitions', 'parameters')
> definitions = ReferenceResolver.with_scope('definitions')
> definitions.set('Article', Schema(...))
> print(components)
{'definitions': OrderedDict([('Article', Schema(...)]), 'parameters':␣
↪OrderedDict()}
```

Parameters **scopes** (`str`) – an enumeration of the valid scopes this resolver will contain

with_scope(*scope*)

Return a view into this *ReferenceResolver* whose scope is defaulted and forced to *scope*.

Parameters **`scope`** (*`str`*) – target scope, must be in this resolver's *scopes*

Returns the bound resolver

Return type *ReferenceResolver*

`_check_scope`(*scope*)

`set`(*name*, *obj*, *scope=None*)

Set an object in the given scope, raise an error if it already exists.

Parameters

- **`name`** (*`str`*) – reference name
- **`obj`** – referenced object
- **`scope`** (*`str`*) – reference scope

`setdefault`(*name*, *maker*, *scope=None*)

Set an object in the given scope only if it does not exist.

Parameters

- **`name`** (*`str`*) – reference name
- **`maker`** (*`callable`*) – object factory, called only if necessary
- **`scope`** (*`str`*) – reference scope

`get`(*name*, *scope=None*)

Get an object from the given scope, raise an error if it does not exist.

Parameters

- **`name`** (*`str`*) – reference name
- **`scope`** (*`str`*) – reference scope

Returns the object

`getdefault`(*name*, *default=None*, *scope=None*)

Get an object from the given scope or a default value if it does not exist.

Parameters

- **`name`** (*`str`*) – reference name
- **`default`** – the default value
- **`scope`** (*`str`*) – reference scope

Returns the object or *default*

`has`(*name*, *scope=None*)

Check if an object exists in the given scope.

Parameters

- **`name`** (*`str`*) – reference name
- **`scope`** (*`str`*) – reference scope

Returns True if the object exists

Return type bool

`scopes`

`keys`()

9.1.7 drf_yasg.renderers

class `drf_yasg.renderers.`**`_SpecRenderer`**

Bases: `rest_framework.renderers.BaseRenderer`

Base class for text renderers. Handles encoding and validation.

`charset = None`

`validators = ['ssv', 'flex']`

`codec_class = None`

`classmethod with_validators`(*validators*)

`render`(*data*, *media_type=None*, *renderer_context=None*)

class `drf_yasg.renderers.`**`OpenAPIRenderer`**

Bases: *`drf_yasg.renderers._SpecRenderer`*

Renders the schema as a JSON document with the `application/openapi+json` specific mime type.

`media_type = 'application/openapi+json'`

`format = 'openapi'`

`codec_class`

alias of `OpenAPICodecJson`

class `drf_yasg.renderers.`**`SwaggerJSONRenderer`**

Bases: *`drf_yasg.renderers._SpecRenderer`*

Renders the schema as a JSON document with the generic `application/json` mime type.

`media_type = 'application/json'`

`format = '.json'`

`codec_class`

alias of `OpenAPICodecJson`

class `drf_yasg.renderers.`**`SwaggerYAMLRenderer`**

Bases: *`drf_yasg.renderers._SpecRenderer`*

Renders the schema as a YAML document.

`media_type = 'application/yaml'`

`format = '.yaml'`

`codec_class`

alias of `OpenAPICodecYaml`

class `drf_yasg.renderers.`**`_UIRenderer`**

Bases: `rest_framework.renderers.BaseRenderer`

Base class for web UI renderers. Handles loading and passing settings to the appropriate template.

`media_type = 'text/html'`

`charset = 'utf-8'`

`template = ''`

`render`(*swagger*, *accepted_media_type=None*, *renderer_context=None*)

`set_context`(*renderer_context*, *swagger*)

get_auth_urls()

get_swagger_ui_settings()

get_redoc_settings()

class drf_yasg.renderers.**SwaggerUIRenderer**

Bases: *drf_yasg.renderers._UIRenderer*

Renders a swagger-ui web interface for schema browisng. Also requires *OpenAPIRenderer* as an available renderer on the same view.

template = 'drf-yasg/swagger-ui.html'

format = 'swagger'

class drf_yasg.renderers.**ReDocRenderer**

Bases: *drf_yasg.renderers._UIRenderer*

Renders a ReDoc web interface for schema browisng. Also requires *OpenAPIRenderer* as an available renderer on the same view.

template = 'drf-yasg/redoc.html'

format = 'redoc'

9.1.8 drf_yasg.utils

drf_yasg.utils.**no_body = <object object>**

used to forcibly remove the body of a request via *swagger_auto_schema()*

drf_yasg.utils.**swagger_auto_schema**(*method=None, methods=None, auto_schema=None, request_body=None, query_serializer=None, manual_parameters=None, operation_id=None, operation_description=None, responses=None, field_inspectors=None, filter_inspectors=None, paginator_inspectors=None, **extra_overrides*)

Decorate a view method to customize the Operation object generated from it.

method and *methods* are mutually exclusive and must only be present when decorating a view method that accepts more than one HTTP request method.

The *auto_schema* and *operation_description* arguments take precendence over view- or method-level values.

Changed in version 1.1: Added the `extra_overrides` and `operatiod_id` parameters.

Changed in version 1.1: Added the `field_inspectors`, `filter_inspectors` and `paginator_inspectors` parameters.

Parameters

- **method** (*str*) – for multi-method views, the http method the options should apply to
- **methods** (*list[str]*) – for multi-method views, the http methods the options should apply to
- **auto_schema** (inspectors.SwaggerAutoSchema) – custom class to use for generating the Operation object; this overrides both the class-level `swagger_schema` attribute and the `DEFAULT_AUTO_SCHEMA_CLASS` setting
- **request_body** (Schema, SchemaRef, *Serializer*) – custom request body, or *no_body*. The value given here will be used as the `schema` property of a *Parameter* with `in: 'body'`.

A Schema or SchemaRef is not valid if this request consumes form-data, because `form` and `body` parameters are mutually exclusive in an *Operation*. If you need to set custom `form` parameters, you can use the *manual_parameters* argument.

If a `Serializer` class or instance is given, it will be automatically converted into a *Schema* used as a `body` *Parameter*, or into a list of `form` *Parameter*s, as appropriate.

- **query_serializer** (*Serializer*) – if you use a `Serializer` to parse query parameters, you can pass it here and have *Parameter* objects be generated automatically from it.

  If any `Field` on the serializer cannot be represented as a `query` *Parameter* (e.g. nested Serializers, file fields, . . .), the schema generation will fail with an error.

  Schema generation will also fail if the name of any Field on the *query_serializer* conflicts with parameters generated by `filter_backends` or `paginator`.

- **manual_parameters** (*list[*Parameter*]*) – a list of manual parameters to override the automatically generated ones

  *Parameter*s are identified by their (`name`, `in`) combination, and any parameters given here will fully override automatically generated parameters if they collide.

  It is an error to supply `form` parameters when the request does not consume form-data.

- **operation_id** (*str*) – operation ID override; the operation ID must be unique accross the whole API
- **operation_description** (*str*) – operation description override
- **responses** (*dict[str, (*Schema*,*SchemaRef*,*Response*,str, Serializer)]*) – a dict of documented manual responses keyed on response status code. If no success (`2xx`) response is given, one will automatically be generated from the request body and http method. If any `2xx` response is given the automatic response is suppressed.
  - if a plain string is given as value, a *Response* with no body and that string as its description will be generated
  - if a *Schema*, *SchemaRef* is given, a *Response* with the schema as its body and an empty description will be generated
  - a `Serializer` class or instance will be converted into a *Schema* and treated as above
  - a *Response* object will be used as-is; however if its `schema` attribute is a `Serializer`, it will automatically be converted into a *Schema*
- **field_inspectors** (*list[*FieldInspector*]*) – extra serializer and field inspectors; these will be tried before *ViewInspector.field_inspectors* on the *inspectors.SwaggerAutoSchema* instance
- **filter_inspectors** (*list[*FilterInspector*]*) – extra filter inspectors; these will be tried before *ViewInspector.filter_inspectors* on the *inspectors.SwaggerAutoSchema* instance
- **paginator_inspectors** (*list[*PaginatorInspector*]*) – extra paginator inspectors; these will be tried before *ViewInspector.paginator_inspectors* on the *inspectors.SwaggerAutoSchema* instance

- **extra_overrides** – extra values that will be saved into the `overrides` dict; these values will be available in the handling *inspectors.SwaggerAutoSchema* instance via `self.overrides`

`drf_yasg.utils.`**`is_list_view`**(*path*, *method*, *view*)

Check if the given path/method appears to represent a list view (as opposed to a detail/instance view).

Parameters

- **path** (*str*) – view path
- **method** (*str*) – http method
- **view** (*APIView*) – target view

Return type bool

`drf_yasg.utils.`**`guess_response_status`**(*method*)

`drf_yasg.utils.`**`param_list_to_odict`**(*parameters*)

Transform a list of *Parameter* objects into an `OrderedDict` keyed on the `(name, in_)` tuple of each parameter.

Raises an `AssertionError` if *parameters* contains duplicate parameters (by their name + in combination).

Parameters **parameters** (*list[Parameter]*) – the list of parameters

Returns *parameters* keyed by `(name, in_)`

Return type dict[tuple(str,str),*Parameter*]

`drf_yasg.utils.`**`filter_none`**(*obj*)

Remove `None` values from tuples, lists or dictionaries. Return other objects as-is.

Parameters **obj** –

Returns collection with `None` values removed

`drf_yasg.utils.`**`force_serializer_instance`**(*serializer*)

Force *serializer* into a `Serializer` instance. If it is not a `Serializer` class or instance, raises an assertion error.

Parameters **serializer** – serializer class or instance

Returns serializer instance

9.1.9 drf_yasg.views

`drf_yasg.views.`**`deferred_never_cache`**(*view_func*)

Decorator that adds headers to a response so that it will never be cached.

`drf_yasg.views.`**`get_schema_view`**(*info=None, url=None, patterns=None, urlconf=None, public=False, validators=None, generator_class=<class 'drf_yasg.generators.OpenAPISchemaGenerator'>, authentication_classes=[<class 'rest_framework.authentication.SessionAuthentication'>, <class 'rest_framework.authentication.BasicAuthentication'>], permission_classes=[<class 'rest_framework.permissions.AllowAny'>]*)

Create a SchemaView class with default renderers and generators.

Parameters

- **info** (`Info`) – Swagger API Info object; if omitted, defaults to *DEFAULT_INFO*
- **url** (*str*) – API base url; if left blank will be deduced from the location the view is served at

- **patterns** – passed to SchemaGenerator
- **urlconf** – passed to SchemaGenerator
- **public** (*bool*) – if False, includes only endpoints the current user has access to
- **validators** (*list*) – a list of validator names to apply; allowed values are `flex`, `ssv`
- **generator_class** (*type*) – schema generator class to use; should be a subclass of *OpenAPISchemaGenerator*
- **authentication_classes** (*tuple*) – authentication classes for the schema view itself
- **permission_classes** (*tuple*) – permission classes for the schema view itself

Returns SchemaView class

Return type type[*SchemaView*]

class drf_yasg.views.**SchemaView**(***kwargs*)

Bases: `rest_framework.views.APIView`

Constructor. Called in the URLconf; can contain helpful extra keyword arguments, and other things.

_ignore_model_permissions = True

classmethod apply_cache(*view*, *cache_timeout*, *cache_kwargs*)

Override this method to customize how caching is applied to the view.

Arguments described in *as_cached_view()*.

classmethod as_cached_view(*cache_timeout=0*, *cache_kwargs=None*, ***initkwargs*)

Calls .as_view() and wraps the result in a cache_page decorator. See https://docs.djangoproject.com/en/1.11/topics/cache/

Parameters

- **cache_timeout** (*int*) – same as cache_page; set to 0 for no cache
- **cache_kwargs** (*dict*) – dictionary of kwargs to be passed to cache_page
- **initkwargs** – kwargs for .as_view()

Returns a view instance

authentication_classes = [<class 'rest_framework.authentication.SessionAuthentication'

generator_class

alias of `OpenAPISchemaGenerator`

get(*request*, *version=''*, *format=None*)

permission_classes = [<class 'rest_framework.permissions.AllowAny'>]

public = False

renderer_classes = (<class 'drf_yasg.renderers.SwaggerYAMLRenderer'>, <class 'drf_yasg

schema = None

classmethod with_ui(*renderer='swagger'*, *cache_timeout=0*, *cache_kwargs=None*)

Instantiate this view with a Web UI renderer, optionally wrapped with cache_page. See https://docs.djangoproject.com/en/1.11/topics/cache/.

Parameters

- **`renderer`** (*`str`*) – UI renderer; allowed values are `swagger`, `redoc`
- **`cache_timeout`** (*`int`*) – same as cache_page; set to 0 for no cache
- **`cache_kwargs`** (*`dict`*) – dictionary of kwargs to be passed to cache_page

Returns a view instance

`classmethod without_ui`(*cache_timeout=0*, *cache_kwargs=None*)

Instantiate this view with just JSON and YAML renderers, optionally wrapped with cache_page. See https://docs.djangoproject.com/en/1.11/topics/cache/.

Parameters

- **`cache_timeout`** (*`int`*) – same as cache_page; set to 0 for no cache
- **`cache_kwargs`** (*`dict`*) – dictionary of kwargs to be passed to cache_page

Returns a view instance

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