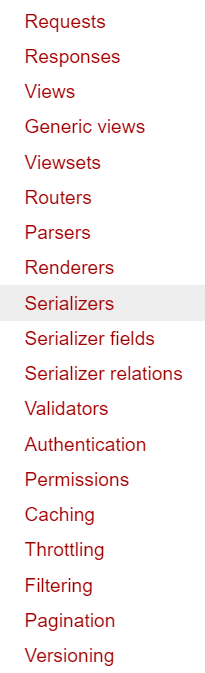
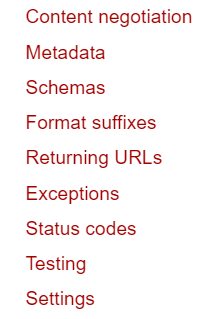


API Guide





**Serializers** allow complex data such as **querysets** and **model instances** to be converted to native Python datatypes that can then be easily rendered into JSON, XML or other content types. Serializers also provide deserialization, allowing parsed data to be converted back into complex types, after first validating the incoming data.

The serializers in REST framework work very similarly to Django's Form and ModelForm classes. We provide a Serializerclass which gives you a powerful, generic way to control the output of your responses, as well as a ModelSerializer class which provides a useful shortcut for creating serializers that deal with model instances and querysets.

# @ [**differentiate null=True, blank=True in django**](https://stackoverflow.com/questions/8609192/differentiate-null-true-blank-true-in-django)

models.CharField(max\_length=100, **null=True**, **blank=True**)

null=True sets NULL (versus NOT NULL) on the column in your DB.

Blank values for Django field types such as DateTimeField or ForeignKey will be stored as NULL in the DB.

blank=True determines whether the field will be required in forms. This includes the admin and your own custom forms. If blank=True then the field will not be required, whereas if it's False the field cannot be blank.

@ **Routers**

REST framework adds support for **automatic URL routing** to Django, and provides you with a simple, quick and consistent way of wiring your view logic to a set of URLs.

Here's an example of a simple URL conf, that uses SimpleRouter.

from rest\_framework import routers

router = routers.SimpleRouter()

router.register(r'users', UserViewSet)

router.register(r'accounts', AccountViewSet)

urlpatterns = router.urls

There are two mandatory arguments to the register() method:

* prefix - The URL prefix to use for this set of routes.
* viewset - The viewset class.

Optionally, you may also specify an additional argument:

* basename - The base to use for the URL names that are created. If unset the basename will be automatically generated based on the queryset attribute of the viewset, if it has one. Note that if the viewset does not include a queryset attribute then you must set basename when registering the viewset.

Typically you won't need to specify the basename argument, but if you have a viewset where you've defined a custom get\_queryset method, then the viewset may not have a .queryset attribute set.

# **generics vs viewset in django rest framework,** how to prefer which one to use?

DRF has two main systems for handling views:

1. [APIView](http://www.django-rest-framework.org/api-guide/views/): This provides some **handler methods**, to handle the http verbs: get, post, put, patch, and delete.
2. [ViewSet](http://www.django-rest-framework.org/api-guide/viewsets/#viewsets): This is an abstraction over APIView, which provides **actions** as methods:
   * **list**: read only, returns multiple resources (http verb: get). Returns a list of dicts.
   * **retrieve**: read only, single resource (http verb: get, but will expect an id). Returns a single dict.
   * **create**: creates a new resource (http verb: post)
   * **update**/**partial\_update**: edits a resource (http verbs: put/patch)
   * **destroy**: removes a resource (http verb: delete)

Both can be used with normal django urls.

Because of the conventions established with the **actions**, the ViewSet has also the ability to be [mapped into a router](http://www.django-rest-framework.org/api-guide/routers/#simplerouter), which is really helpful.

Now, both of this Views, have **shortcuts**, these shortcuts give you a simple implementation ready to be used.

[GenericAPIView](http://www.django-rest-framework.org/api-guide/generic-views/#genericapiview): for APIView, this gives you shortcuts that map closely to your database models. Adds commonly required behavior for standard list and detail views. Gives you some attributes like, the serializer\_class, also gives pagination\_class, filter\_backend, etc

[GenericViewSet](http://www.django-rest-framework.org/api-guide/viewsets/#genericviewset): There are many GenericViewSet, the most common being ModelViewSet. They inherit from GenericAPIView and have a full implementation of all of the **actions**: list, retrieve, destroy, updated, etc. Of course, you can also pick some of them, [read the docs](http://www.django-rest-framework.org/api-guide/viewsets/#example_3)

So, to answer your question: [DRY](https://en.wikipedia.org/wiki/Don%27t_repeat_yourself), if you are doing something really simple, with a ModelViewSet should be enough, even redefining and calling super also is enough. For more complex cases, you can go for lower level classes.

**Mixin**

(The owner of the ice cream shop offered a basic flavor of ice cream (vanilla, chocolate, etc.) and blended in a combination of extra items (nuts, cookies, fudge, etc.) and called the item a "[mix-in](https://en.wikipedia.org/wiki/Mix-in)", his own trademarked term at the time.)

1, It provides a mechanism for **multiple inheritance** by allowing multiple classes to use the **common functionality**,

**but without the complex semantics of multiple inheritance**.

2, **Code reusability**: Mixins are useful when a programmer wants to **share functionality between different classes**. Instead of repeating the same code over and over again, the common functionality can simply be grouped into a mixin and then included into each class that requires it.

3, Mixins allow inheritance and use of **only the desired features** from the parent class, not necessarily all of the

features from the parent class.

**Class-Based Views vs. Function-Based Views**

Commonly, the **function-based views** are the most used due to them being the first used when **Django** views are starting to be understood and this view type is very easy to use and functional; so then, why were **class-based** views created? Which view type would be the most appropriate? What’s the main **difference** between these two types of views?

## Function-based views

“A view (function) is simply a **Python** function that takes a **Web request**and returns a **Web response**. This response can be the **HTML** contents of a **Web page**, or a **redirect**, or a **404 error**, or an **XML** document, or an image . . . or anything, really. The view itself contains whatever arbitrary logic is necessary to return that response.“

*A simple****example****of a list function would be:*

def item\_list(request):

template\_name = 'app/item\_list.html'

items = Item.objects.all()

data = {}

data['object\_list'] = items

return render(request, template\_name, data)

As you can see, this **function** is **very easy**to implement and it’s very **useful** but the **main disadvantage** is that on a large **Django** project, there are usually a lot of similar functions in the views; one case could be that all objects of a **Django** project usually have **CRUD**operations, so this **code** is repeated again and again unnecessarily, and so, this was one of the reasons that the **class-based views** and generic views were created!

## Class-based views

“**Class-based views** provide an **alternative way** to implement views as **Python** objects instead of functions. They do not replace **function-based views**, but have certain differences and **advantages** when compared to function-based views:

* Organization of code related to specific **HTTP methods** (GET, POST, etc.) can be addressed by separate methods instead of conditional branching.
* Object oriented techniques such as mixins (**multiple inheritance**) can be used to factor code into reusable components.”

As already mentioned, the **class-based views** don’t replace **function-based views** but thanks to the inheritance they are easier to implement and more optimal, furthermore, for solved much more the repeated code, the **Django’s generic views** were developed and with this, the **class-based generic views** are **more optimal** yet.

*The****example****shown above would be:*

class ItemList(ListView):

model = Item

This is very easy, isn't it?

The **generic views** help to **simplify**the **code** much more, in that it has **attributes** and **methods** providing functionality by defect, if we wanted to modify or add attribute values or some method, we only have to write the **attribute/method** in our code and this will overwrite the default values.

Some generic views are: **TemplateView**, **ListView**, **DetailView**,**CreateView**, **DeleteView**, so on. See more [here](http://ccbv.co.uk/).

### Conclusion

In conclusion, could it be said that it’s more appropriate to use **the class-based views** than the **function-based views**? Actually no, it’s just as good to use functions like use classes on the views, but it’ll depend on the functionality, we can use functions if the functionality is simple (show a template, for example), and we use generic views with class if the functionality contains **CRUD** operations or it’s more complex, as it's more optimal.

**@ Django template**

**{% %}** and **{{ }}** are part of **Django templating** language. They are used to pass the variables

from **views** to **template**.

**{% %}** is basically used when you have an expression and are called **tags**

while **{{ }}** is used to simply access the **variable**.

- What you have to do When you modify models.py.

C:\eclipse-workspace-msx\msxviewer> python manage.py makemigrations <projectname>

C:\eclipse-workspace-msx\msxviewer> python manage.py migrate

**@ How to create a Django project on Eclipse.**

< **File - New - PyDev Django Project** >

- virtualenv to install all files in the requirements.txt file.

1. cd to the directory where requirements.txt is located.

2. activate your virtualenv.

3. run: **pip install -r requirements.txt**

D:\venv35>Scripts\activate

(venv35) D:\venv35>**python -m pip install --upgrade pip**

(venv35) D:\venv35>**pip list**

(venv35) D:\venv35>**pip install django**

(venv35) D:\venv35>**pip install djangorestfraimework**

(venv35) D:\venv35>**django-admin startproject api\_example**

(venv35) D:\venv35>**cd api\_example**

(venv35) D:\venv35\api\_example>**python manage.py migrate**

(venv35) D:\venv35\api\_example>**python manage.py createsuperuser**

Username (leave blank to use 'tigerkt'):

Email address: kyungtak.lee@gmail.com

pw: amadeus88

(venv35) D:\venv35\api\_example>**python manage.py startapp languages**

- **settings** : add apps (rest\_framework, languages)

- **api\_example/urls** :

- **languages/models** : - languages/urls :

(venv35) D:\venv35\api\_example>**python manage.py makemigrations**

(venv35) D:\venv35\api\_example>**python manage.py migrate**

(venv35) D:\venv35\api\_example>**python manage.py runserver**

- **languages/serializers** :

- **languages/views** :

: **Before** you can get started with creating your own **models** and **views**,

you must.

-Open **settings.py** file, add INSTALLED\_APPS = [ ...., applicationname]

-Create a **Views**, Mapping **URLs**

**@ How to log source file name & line number in Python**

#!/usr/bin/env python

import logging

logging.basicConfig(format='%(asctime)s,%(msecs)d %(levelname)-8s [%(filename)s:%(lineno)d] %(message)s',

datefmt='%d-%m-%Y:%H:%M:%S',

level=logging.DEBUG)

logger = logging.getLogger('stackoverflow\_rocks')

logger.debug("This is a debug log")

logger.info("This is an info log")

logger.critical("This is critical")

logger.error("An error occurred")

Generates this output:

06-06-2017:17:07:02,158 DEBUG [log.py:11] This is a debug log

06-06-2017:17:07:02,158 INFO [log.py:12] This is an info log

06-06-2017:17:07:02,158 CRITICAL [log.py:13] This is critical

06-06-2017:17:07:02,158 ERROR [log.py:14] An error occurred

**@ csrf(cross site request forgery)**

**from django.middleware import csrf**

**def get\_or\_create\_csrf\_token(request):**

**token = request.META.get('CSRF\_COOKIE', None)**

**if token is None:**

**token = csrf.\_get\_new\_csrf\_key()**

**request.META['CSRF\_COOKIE'] = token**

**request.META['CSRF\_COOKIE\_USED'] = True**

**return token**

you should not use internal APIs and in fact \_get\_new\_csrf\_key() does not exist in Django anymore.

you can use get\_token()

**@ sqlite3**

**sqlite>** .open "C:\\Devsup\\Data\\PRD.sqlite3"

**sqlite>** .database

main: C:\Devsup\Data\PRD.sqlite3

**sqlite>** .tables

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To get a values\_list from Model(Brand).

brand\_names = **list**(Brand.objects.**values\_list**('name', **flat=True**))

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