# django-braces Documentation

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You can view the code of our project or fork it and add your own mixins (please, send them back to us), on Github.

## CHAPTER 1

## Access Mixins

These mixins all control a user's access to a given view. Since many of them extend the AccessMixin, the following are common attributes:

```
login_url = settings.LOGIN_URL
redirect_field_name = REDIRECT_FIELD_NAME
raise_exception = False
```

The raise\_exception attribute will cause the view to raise a PermissionDenied exception if it is set to True, otherwise the view will redirect to the login view provided.

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## LoginRequiredMixin

This mixin is rather simple and is generally the first inherited class in any view. If you don't have an authenticated user, there's no need to go any further. If you've used Django before you are probably familiar with the login\_required decorator. This mixin replicates the decorator's functionality.

**Note:** As of version 1.0, the LoginRequiredMixin has been rewritten to behave like the rest of the access mixins. It now accepts login\_url, redirect\_field\_name and raise\_exception.

**Note:** This should be the left-most mixin of a view, except when combined with *CsrfExemptMixin* - which in that case should be the left-most mixin.

```
from django.views.generic import TemplateView
from braces.views import LoginRequiredMixin
class SomeSecretView(LoginRequiredMixin, TemplateView):
    template_name = "path/to/template.html"
    #optional
    login_url = "/signup/"
    redirect_field_name = "hollaback"
    raise_exception = True
    def get(self, request):
        return self.render_to_response({})
```

## PermissionRequiredMixin

This mixin was originally written by Daniel Sokolowski (code here), but this version eliminates an unneeded render if the permissions check fails.

Rather than overloading the dispatch method manually on every view that needs to check for the existence of a permission, use this mixin and set the permission\_required class attribute on your view. If you don't specify permission\_required on your view, an ImproperlyConfigured exception is raised reminding you that you haven't set it.

The one limitation of this mixin is that it can **only** accept a single permission. If you need multiple permissions use *MultiplePermissionsRequiredMixin*.

In normal use of this mixin, *LoginRequiredMixin* comes first, then the PermissionRequiredMixin. If the user isn't an authenticated user, there is no point in checking for any permissions.

**Note:** If you are using Django's built in auth system, superusers automatically have all permissions in your system.

The PermissionRequiredMixin also offers a check\_permssions method that should be overridden if you need custom permissions checking.

#### **MultiplePermissionsRequiredMixin**

The MultiplePermissionsRequiredMixin is a more powerful version of the *PermissionRequiredMixin*. This view mixin can handle multiple permissions by setting the mandatory permissions attribute as a dict with the keys any and/or all to a list or tuple of permissions. The all key requires the request.user to have **all** of the specified permissions. The any key requires the request.user to have **at least one** of the specified permissions. If you only need to check a single permission, the *PermissionRequiredMixin* is a better choice.

**Note:** If you are using Django's built in auth system, superusers automatically have all permissions in your system.

The MultiplePermissionsRequiredMixin also offers a check\_permssions method that should be overridden if you need custom permissions checking.

#### GroupRequiredMixin

New in version 1.2.

The GroupRequiredMixin ensures that the requesting user is in the group or groups specified. This view mixin can handle multiple groups by setting the mandatory group\_required attribute as a list or tuple.

**Note:** The mixin assumes you're using Django's default Group model and that your user model provides groups as a ManyToMany relationship. If this **is not** the case, you'll need to override check\_membership in the mixin to handle your custom set up.

#### Standard Django Usage

```
from django.views import TemplateView
from braces.views import GroupRequiredMixin
class SomeProtectedView(GroupRequiredMixin, TemplateView):
    #required
    group_required = u"editors"
```

#### **Multiple Groups Possible Usage**

```
from django.views import TemplateView
from braces.views import GroupRequiredMixin
class SomeProtectedView(GroupRequiredMixin, TemplateView):
    #required
    group_required = [u"editors", u"admins"]
```

#### **Custom Group Usage**

```
from django.views import TemplateView
from braces.views import GroupRequiredMixin
class SomeProtectedView(GroupRequiredMixin, TemplateView):
    #required
    group_required = u"editors"
    def check_membership(self, group):
        ...
        # Check some other system for group membership
        if user_in_group:
            return True
        else:
            return False
```

## **UserPassesTestMixin**

New in version 1.3.0.

Mixin that reimplements the user\_passes\_test decorator. This is helpful for much more complicated cases than checking if user is\_superuser (for example if their email is from specific a domain).

## **SuperuserRequiredMixin**

Another permission-based mixin. This is specifically for requiring a user to be a superuser. Comes in handy for tools that only privileged users should have access to.

## AnonymousRequiredMixin

New in version 1.4.0.

Mixin that will redirect authenticated users to a different view. The default redirect is to Django's settings.LOGIN\_REDIRECT\_URL.

#### **Static Examples**

```
from django.views import TemplateView
from braces.views import AnonymousRequiredMixin
class SomeView(AnonymousRequiredMixin, TemplateView):
    authenticated_redirect_url = u"/send/away/"
```



#### **Dynamic Example**

```
from django.views import TemplateView
from braces.views import AnonymousRequiredMixin
class SomeView(AnonymousRequiredMixin, TemplateView):
    """ Redirect based on user level """
    def get_authenticated_redirect_url(self):
        if self.request.user.is_superuser:
            return u"/admin/"
        return u"/somewhere/else/"
```

## **StaffuserRequiredMixin**

Similar to *SuperuserRequiredMixin*, this mixin allows you to require a user with is\_staff set to True.

# CHAPTER 2

## Form Mixins

All of these mixins, with one exception, modify how forms are handled within views. The UserKwargModelFormMixin is a mixin for use in forms to auto-pop a user kwarg.

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## CsrfExemptMixin

If you have Django's CSRF protection middleware enabled you can exempt views using the csrf\_exempt decorator. This mixin exempts POST requests from the CSRF protection middleware without requiring that you decorate the dispatch method.

Note: This mixin should always be the left-most plugin.

```
from django.views.generic import UpdateView
from braces.views import LoginRequiredMixin, CsrfExemptMixin
from profiles.models import Profile
class UpdateProfileView(CsrfExemptMixin, LoginRequiredMixin, UpdateView):
    model = Profile
```

## **UserFormKwargsMixin**

A common pattern in Django is to have forms that are customized to a user. To custom tailor the form for users, you have to pass that user instance into the form and, based on their permission level or other details, change certain fields or add specific options within the forms \_\_init\_\_ method.

This mixin automates the process of overloading the get\_form\_kwargs (this method is available in any generic view which handles a form) method and stuffs the user instance into the form kwargs. The user can then be pop()``ed off in the form. \*\*Always\*\* remember to pop the user from the kwargs before calling ``super() on your form, otherwise the form will get an unexpected keyword argument.

#### Usage

```
from django.views.generic import CreateView
from braces.views import LoginRequiredMixin, UserFormKwargsMixin
from next.example import UserForm
class SomeSecretView(LoginRequiredMixin, UserFormKwargsMixin,
    TemplateView):
    form_class = UserForm
    model = User
    template_name = "path/to/template.html"
```

This obviously pairs very nicely with the following mixin.

## **UserKwargModelFormMixin**

The UserKwargModelFormMixin is a form mixin to go along with our *UserFormKwargsMixin*. This becomes the first inherited class of our forms that receive the user keyword argument. With this mixin, the pop()``ing of the ``user is automated and no longer has to be done manually on every form that needs this behavior.

#### Usage

```
from braces.forms import UserKwargModelFormMixin

class UserForm(UserKwargModelFormMixin, forms.ModelForm):
    class Meta:
        model = User

    def __init__(self, *args, **kwargs):
        super(UserForm, self).__init__(*args, **kwargs)

        if not self.user.is_superuser:
        del self.fields["group"]
```

## SuccessURLRedirectListMixin

The SuccessURLRedirectListMixin is a bit more tailored to how CRUD is often handled within CM-Ses. Many CMSes, by design, redirect the user to the ListView for whatever model they are working with, whether they are creating a new instance, editing an existing one, or deleting one. Rather than having to override get\_success\_url on every view, use this mixin and pass it a reversible route name. Example:

```
# urls.py
url(r"^users/$", UserListView.as_view(), name="users_list"),
# views.py
from django.views import CreateView
from braces import views
class UserCreateView(views.LoginRequiredMixin, views.PermissionRequiredMixin,
    views.SuccessURLRedirectListMixin, CreateView):
    form_class = UserForm
    model = User
    permission_required = "auth.add_user"
    success_list_url = "users_list"
    ...
```

#### FormValidMessageMixin

New in version 1.2.

The FormValidMessageMixin allows you to to *statically* or *programmatically* set a message to be returned using Django's messages framework when the form is valid. The returned message is controlled by the form\_valid\_message property which can either be set on the view or returned by the get\_form\_valid\_message method. The message is not processed until the end of the form\_valid method.

Warning: This mixin requires the Django messages app to be enabled.

**Note:** This mixin is designed for use with Django's generic form class-based views, e.g. FormView, CreateView, UpdateView

#### Static Example

```
from django.utils.translation import ugettext_lazy as _
from django.views.generic import CreateView
from braces.views import FormValidMessageMixin

class BlogPostCreateView(FormValidMessageMixin, CreateView):
    form_class = PostForm
    model = Post
    form_valid_message = _(u"Blog post created!")
```

#### **Dynamic Example**

```
from django.views.generic import CreateView
from braces.views import FormValidMessageMixin
class BlogPostCreateView(FormValidMessageMixin, CreateView):
    form_class = PostForm
    model = Post
    def get_form_valid_message(self):
        return u"{0} created!".format(self.object.title)
```

#### FormInvalidMessageMixin

New in version 1.2.

The FormInvalidMessageMixin allows you to to *statically* or *programmatically* set a message to be returned using Django's messages framework when the form is invalid. The returned message is controlled by the form\_invalid\_message property which can either be set on the view or returned by the get\_form\_invalid\_message method. The message is not processed until the end of the form\_invalid method.

Warning: This mixin requires the Django messages app to be enabled.

Note: This mixin is designed for use with Django's generic form class-based views, e.g. FormView, CreateView, UpdateView

#### Static Example

```
from django.utils.translation import ugettext_lazy
from django.views.generic import CreateView
from braces.views import FormInvalidMessageMixin

class BlogPostCreateView(FormInvalidMessageMixin, CreateView):
    form_class = PostForm
    model = Post
    form_invalid_message = _(u"Oh snap, something went wrong!")
```

#### **Dynamic Example**

```
from django.utils.translation import ugettext_lazy as _
from django.views.generic import CreateView
from braces.views import FormInvalidMessageMixin

class BlogPostCreateView(FormInvalidMessageMixin, CreateView):
    form_class = PostForm
    model = Post

    def get_form_invalid_message(self):
        return _(u"Some custom message")
```

#### FormMessagesMixin

New in version 1.2.

FormMessagesMixin is a convenience mixin which combines *FormValidMessageMixin* and *FormInvalidMessageMixin* since we commonly provide messages for both states (form\_valid, form\_invalid).

Warning: This mixin requires the Django messages app to be enabled.

#### **Static & Dynamic Example**

```
from django.utils.translation import ugettext_lazy as _
from django.views.generic import CreateView
from braces.views import FormMessagesMixin
class BlogPostCreateView(FormMessagesMixin, CreateView):
   form_class = PostForm
   form_invalid_message = _(u"Something went wrong, post was not saved")
   model = Post
   def get_form_valid_message(self):
        return u"{0} created!".format(self.object.title)
```

## CHAPTER 3

## Other Mixins

These mixins handle other random bits of Django's views, like controlling output, controlling content types, or setting values in the context.

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## **SetHeadlineMixin**

The SetHeadlineMixin allows you to *statically* or *programmatically* set the headline of any of your views. Ideally, you'll write as few templates as possible, so a mixin like this helps you reuse generic templates. Its usage is amazingly straightforward and works much like Django's built-in get\_queryset method. This mixin has two ways of being used:

#### **Static Example**

```
from django.utils.translation import ugettext_lazy as _
from django.views import TemplateView
from braces.views import SetHeadlineMixin
class HeadlineView(SetHeadlineMixin, TemplateView):
    headline = _(u"This is our headline")
    template_name = u"path/to/template.html"
```

#### **Dynamic Example**

```
from datetime import date
from django.views import TemplateView
from braces.views import SetHeadlineMixin
class HeadlineView(SetHeadlineMixin, TemplateView):
    template_name = u"path/to/template.html"
    def get_headline(self):
        return u"This is our headline for {0}".format(date.today().isoformat())
```

For both usages, the context now contains a headline key with your headline.

## StaticContextMixin

New in version 1.4.

The StaticContextMixin allows you to easily set static context data by using the static\_context property.

**Note:** While it's possible to override the StaticContextMixin.get\_static\_context method, it's not very practical. If you have a need to override a method for dynamic context data it's best to override the standard get\_context\_data method of Django's generic class-based views.

#### **View Example**

```
# views.py
from django.views import TemplateView
from braces.views import StaticContextMixin
class ContextTemplateView(StaticContextMixin, TemplateView):
    static_context = {u"nav_home": True}
```

#### **URL Example**

```
# urls.py
urlpatterns = patterns(
    '',
    url(ur"^$",
        ContextTemplateView.as_view(
            template_name=u"index.html",
            static_context={u"nav_home": True}
        ),
        name=u"index")
)
```

## **SelectRelatedMixin**

A simple mixin which allows you to specify a list or tuple of foreign key fields to perform a select\_related on. See Django's docs for more information on select\_related.

```
# views.py
from django.views.generic import DetailView
from braces.views import SelectRelatedMixin
from profiles.models import Profile
class UserProfileView(SelectRelatedMixin, DetailView):
    model = Profile
    select_related = [u"user"]
    template_name = u"profiles/detail.html"
```

## PrefetchRelatedMixin

A simple mixin which allows you to specify a list or tuple of reverse foreign key or ManyToMany fields to perform a prefetch\_related on. See Django's docs for more information on prefetch\_related.

```
# views.py
from django.contrib.auth.models import User
from django.views.generic import DetailView
from braces.views import PrefetchRelatedMixin

class UserView(PrefetchRelatedMixin, DetailView):
    model = User
    prefetch_related = [u"post_set"]  # where the Post model has an FK to the User_
    +model as an author.
    template_name = u"users/detail.html"
```

## **JSONResponseMixin**

Changed in version 1.1: render\_json\_response now accepts a status\_code keyword argument. json\_dumps\_kwargs class-attribute and get\_json\_dumps\_kwargs method to provide arguments to the json.dumps() method.

A simple mixin to handle very simple serialization as a response to the browser.

```
# views.py
from django.views.generic import DetailView
from braces.views import JSONResponseMixin
class UserProfileAJAXView(JSONResponseMixin, DetailView):
    model = Profile
    json_dumps_kwargs = {u"indent": 2}
    def get(self, request, *args, **kwargs):
        self.object = self.get_object()
        context_dict = {
            u"name": self.object.user.name,
            u"location": self.object.location
        }
        return self.render_json_response(context_dict)
```

You can additionally use the AjaxResponseMixin

The JSONResponseMixin provides a class-level variable to control the response type as well. By default it is *applica-tion/json*, but you can override that by providing the *content\_type* variable a different value or, programmatically, by overriding the *get\_content\_type()* method.

```
from django.views import DetailView
from braces.views import JSONResponseMixin

class UserProfileAJAXView(JSONResponseMixin, DetailView):
    content_type = u"application/javascript"
    model = Profile

def get(self, request, *args, **kwargs):
    self.object = self.get_object()

    context_dict = {
        u"name": self.object.user.name,
        u"location": self.object.location
    }

    return self.render_json_response(context_dict)

def get_content_type(self):
    # Shown just for illustrative purposes
    return u"application/javascript"
```

## **JsonRequestResponseMixin**

New in version 1.3.

A mixin that attempts to parse the request as JSON. If the request is properly formatted, the JSON is saved to self. request\_json as a Python object. request\_json will be None for imparsible requests.

To catch requests that aren't JSON-formatted, set the class attribute require\_json to True.

Override the class attribute error\_response\_dict to customize the default error message.

It extends JSONResponseMixin, so those utilities are available as well.

Note: To allow public access to your view, you'll need to use the csrf\_exempt decorator or CsrfExemptMixin.

```
from django.utils.translation import ugettext_lazy as _
from django.views.generic import View
from braces import views
class SomeView(views.CsrfExemptMixin, views.JsonRequestResponseMixin, View):
    require_json = True
    def post(self, request, *args, **kwargs):
        try:
            burrito = self.request_json[u"burrito"]
            toppings = self.request_json[u"toppings"]
        except KeyError:
```

```
error_dict = {u"message":
    __(u"your order must include a burrito AND toppings")}
    return self.render_bad_request_response(error_dict)
place_order(burrito, toppings)
return self.render_json_response(
    {u"message": _(u"Your order has been placed!")})
```

## AjaxResponseMixin

This mixin provides hooks for altenate processing of AJAX requests based on HTTP verb.

To control AJAX-specific behavior, override get\_ajax, post\_ajax, put\_ajax, or delete\_ajax. All four methods take request, \*args, and \*\*kwargs like the standard view methods.

```
# views.py
from django.views.generic import View
from braces import views
class SomeView(views.JSONResponseMixin, views.AjaxResponseMixin, View):
    def get_ajax(self, request, *args, **kwargs):
        json_dict = {
            'name': "Benny's Burritos",
            'location': "New York, NY"
        }
        return self.render_json_response(json_dict)
```

Note: This mixin is only useful if you need to have behavior in your view fork based on request.is\_ajax().

## **OrderableListMixin**

New in version 1.1.

A mixin to allow easy ordering of your queryset basing on the GET parameters. Works with ListView.

To use it, define columns that the data can be ordered by, as well as the default column to order by in your view. This can be done either by simply setting the class attributes:

```
# views.py
from django.views import ListView
from braces.views import OrderableListMixin
class OrderableListView(OrderableListMixin, ListView):
    model = Article
    orderable_columns = (u"id", u"title",)
    orderable_columns_default = u"id"
```

Or by using similarly-named methods to set the ordering constraints more dynamically:

```
# views.py
from django.views import ListView
from braces.views import OrderableListMixin
class OrderableListView(OrderableListMixin, ListView):
    model = Article
    def get_orderable_columns(self):
        # return an iterable
        return (u"id", u"title",)
    def get_orderable_columns_default(self):
        # return a string
        return u"id"
```

The orderable\_columns restriction is here in order to stop your users from launching inefficient queries, like ordering by binary columns.

OrderableListMixin will order your queryset basing on following GET params:

- order\_by: column name, e.g. "title"
- ordering: "asc" (default) or "desc"

Example url: http://127.0.0.1:8000/articles/?order\_by=title&ordering=asc

## CanonicalSlugDetailMixin

New in version 1.3.

A mixin that enforces a canonical slug in the URL. Works with DetailView.

If a urlpattern takes a object's pk and slug as arguments and the slug URL argument does not equal the object's canonical slug, this mixin will redirect to the URL containing the canonical slug.

To use it, the urlpattern must accept both a pk and slug argument in its regex:

```
# urls.py
urlpatterns = patterns('',
    url(r"^article/(?P<pk>\d+)-(?P<slug>[-\w]+)$")
    ArticleView.as_view(),
    "view_article"
)
```

Then create a standard DetailView that inherits this mixin:

```
class ArticleView(CanonicalSlugDetailMixin, DetailView):
    model = Article
```

Now, given an Article object with {pk: 1, slug: 'hello-world'}, the URL *http://127.0.0.1:8000/article/1-goodbye-moon* will redirect to *http://127.0.0.1:8000/article/1-hello-world* with the HTTP status code 301 Moved Permanently. Any other non-canonical slug, not just 'goodbye-moon', will trigger the redirect as well.

Control the canonical slug by either implementing the method get\_canonical\_slug() on the model class:

```
class Article(models.Model):
    blog = models.ForeignKey('Blog')
    slug = models.SlugField()
def get_canonical_slug(self):
    return "{0}-{1}".format(self.blog.get_canonical_slug(), self.slug)
```

Or by overriding the get\_canonical\_slug() method on the view:

```
class ArticleView(CanonicalSlugDetailMixin, DetailView):
    model = Article
    def get_canonical_slug():
        import codecs
        return codecs.encode(self.get_object().slug, "rot_13")
```

Given the same Article as before, this will generate urls of *http://127.0.0.1:8000/article/1-my-blog-hello-world* and *http://127.0.0.1:8000/article/1-uryyb-jbeyq*, respectively.

#### MessageMixin

New in version 1.4.

A mixin that adds a messages attribute on the view which acts as a wrapper to django.contrib.messages and passes the request object automatically.

**Warning:** If you're using Django 1.4, then the message attribute is only available after the base view's dispatch method has been called (so our second example would not work for instance).

```
from django.views.generic import TemplateView
from braces.views import MessageMixin

class MyView(MessageMixin, TemplateView):
    """
    This view will add a debug message which can then be displayed
    in the template.
    """
    template_name = "my_template.html"
    def get(self, request, *args, **kwargs):
        self.messages.debug("This is a debug message.")
        return super(MyView, self).get(request, *args, **kwargs)
```

```
from django.contrib import messages
from django.views.generic import TemplateView
from braces.views import MessageMixin
class OnlyWarningView(MessageMixin, TemplateView):
    """
```

```
This view will only show messages that have a level
above `warning`.
"""
template_name = "my_template.html"
def dispatch(self, request, *args, **kwargs):
    self.messages.set_level(messages.WARNING)
    return super(OnlyWarningView, self).dispatch(request, *args, **kwargs)
```

## **AllVerbsMixin**

New in version 1.4.

This mixin allows you to specify a single method that will response to all HTTP verbs, making a class-based view behave much like a function-based view.

```
from django.views import TemplateView
from braces.views import AllVerbsMixin
class JustShowItView(AllVerbsMixin, TemplateView):
    template_name = "just/show_it.html"
    def all(self, request, *args, **kwargs):
        return super(JustShowItView, self).get(request, *args, **kwargs)
```

If you need to change the name of the method called, provide a new value to the all\_handler attribute (default is 'all')

View our Changelog

Want to contribute?

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