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django-autocomplete-light’s purpose is to enable autocompletes quickly and properly in a django project: it is the fruit of years of R&D. It was designed for Django so that every part overridable or reusable independently. It is stable, tested, documented and fully supported: it tries to be a good neighbour in Django ecosystem.

**WARNING** you are currently on the v2 branch where new development happens. master (v1) is still supported for BC.
Features include:

- charfield, foreign key, many to many autocomplete widgets,
- generic foreign key, generic many to many autocomplete widgets,
- remote API backed-autocompletes,
- django template engine support for autocompletes, enabling you to include images etc ...
- 100% overridable HTML, CSS, Python and Javascript: there is no variable hidden far down in the scope anywhere.
- add-another popup supported outside the admin too.
- keyboard is supported with enter, tab and arrows by default.

Each feature has a live example and is fully documented. It is also designed and documented so that you create your own awesome features too.
v2 branch is under active development. You might want to use that instead, since it’s much easier to work with and supports python3.

In this case, please refer to the v2 documentation.

To upgrade to v2, please enjoy the v1 to v2 upgrade instructions (documented with love !).

- the Autocomplete class design hasn’t changed at all.
- yourlabsWidget() doesn’t parses data-* options the same,
- the django/form python code has been re-organised ie. get_widgets_dict() is gone and autocomplete_light.ModelForm wraps around all features.
Resources include:

- **Documentation** graciously hosted by RTFD
- Live demo graciously hosted by PythonAnywhere,
- Video demo graciously hosted by Youtube,
- Mailing list graciously hosted by Google
- Git graciously hosted by GitHub,
- Package graciously hosted by PyPi,
- Continuous integration graciously hosted by Travis-ci
You can run test projects for a local demo in a temporary virtualenv.

### 4.1 test_project: basic features and examples

Virtualenv is a great solution to isolate python environments. If necessary, you can install it from your package manager or the python package manager, i.e.:

```
sudo easy_install virtualenv
```

#### 4.1.1 Install last release

Install packages from PyPi and the test project from Github:

```
rm -rf django-autocomplete-light autocomplete_light_env/

virtualenv autocomplete_light_env
source autocomplete_light_env/bin/activate
git clone https://jpic@github.com/yourlabs/django-autocomplete-light.git
cd django-autocomplete-light/test_project
pip install -r requirements.txt
./manage.py runserver
```

#### 4.1.2 Or install the development version

Install directly from github:

```
AUTOCOMPLETE_LIGHT_VERSION="v2"

rm -rf autocomplete_light_env/

virtualenv autocomplete_light_env
source autocomplete_light_env/bin/activate
pip install -e git+git://github.com/yourlabs/django-autocomplete-light.git@$AUTOCOMPLETE_LIGHT_VERSION#egg=autocomplete_light
cd autocomplete_light_env/src/autocomplete-light/test_project
pip install -r requirements.txt
./manage.py runserver
```
4.1.3 Usage

- Run the server,
- Connect to /admin/, ie. http://localhost:8000/admin/,
- Login with user “test” and password “test”,
- Try the many example applications,

4.1.4 Database

A working SQLite database is shipped, but you can make your own ie.:

```bash
cd test_project
rm -rf db.sqlite
./manage.py syncdb --noinput
./manage.py migrate
./manage.py cities_light
```

Note that `test_project/project_specific/models.py` filters cities from certain countries.

4.2 test_remote_project: advanced features and examples

The autocomplete can suggest results from a remote API - objects that do not exist in the local database.

This project demonstrates how test_remote_project can provide autocomplete suggestions using the database from test_project.

4.2.1 Usage

In one console:

```bash
cd test_project
./manage.py runserver
```

In another:

```bash
cd test_remote_project
./manage.py runserver 127.0.0.1:8001
```

Now, note that there are no or few countries in test_api_project database.

Then, connect to http://localhost:8001/admin/remote_autocomplete/address/add/ and the city autocomplete should propose cities from both projects.

If you’re not going to use localhost:8000 for test_project, then you should update source urls in `test_remote_project/remote_autocomplete/autocomplete_light_registry.py`.
Click on any instruction step for details.

5.1 Install the `django-autocomplete-light>=2.0.0pre` package with pip

Install the stable release, preferably in a virtualenv:

```bash
django -m pip install 'django-autocomplete-light>=2.0.0a1'
```

Or the development version:

```bash
django -m pip install -e git+https://github.com/yourlabs/django-autocomplete-light@v2#egg=autocomplete_light
```

5.2 Append `'autocomplete_light'` to `settings.INSTALLED_APPS before django.contrib.admin`

Enable templates and static files by adding `autocomplete_light` to `settings.INSTALLED_APPS` which is editable in `settings.py`. For example:

```python
INSTALLED_APPS = [
    # [...] your list of app packages is here, add this:
    'autocomplete_light',
]
```

5.3 If using Django < 1.7, call `autocomplete_light.autodiscover()` before `admin.autodiscover()`

In `urls.py`, call `autocomplete_light.autodiscover()` before `admin.autodiscover()` and before any import of a form with autocompletes. It might look like this:

```python
import autocomplete_light
# import every app/autocomplete_light_registry.py
autocomplete_light.autodiscover()
```
import admin
admin.autodiscover()

Also, if you have yourapp.views which imports a form that has autocomplete, say SomeForm, this will work:

import autocomplete_light
autocomplete_light.autodiscover()

from yourapp.views import SomeCreateView

But this won’t:

from yourapp.views import SomeCreateView

import autocomplete_light
autocomplete_light.autodiscover()

That is because auto-discovery of autocomplete classes should happen before definition of forms using autocompletes.

5.4 Include autocomplete_light.urls

Install the autocomplete view and staff debug view in urls.py using the include function. Example:

# Django 1.4 onwards:
from django.conf.urls import patterns, url, include

# Django < 1.4:
# from django.conf.urls.default import patterns, url, include

urlpatterns = patterns('',
    # [...] your url patterns are here
    url(r'^autocomplete/', include('autocomplete_light.urls')),
)

5.5 Ensure you understand django.contrib.staticfiles

If you’re just trying this out using the Django runserver, that will take care of staticfiles for you - but for production, you’ll need to understand django-staticfiles to get everything working properly. If you don’t, here’s a good article about staticfiles or refer to the official Django howto and Django topic.

5.6 Include autocomplete_light/static.html after loading jquery.js (>=1.7)

Load the javascript scripts after loading jquery.js, for example by doing:

<script src="http://ajax.googleapis.com/ajax/libs/jquery/1.9.0/jquery.js" type="text/javascript"></script>
{% include 'autocomplete_light/static.html' %}
5.7 Optionally include it in admin/base_site.html too

For admin support, override admin/base_site.html. For example:

```django
{% extends "admin/base.html" %}
{% block extrahead %}
    <script src="http://ajax.googleapis.com/ajax/libs/jquery/1.9.0/jquery.js" type="text/javascript"></script>
    {% include 'autocomplete_light/static.html' %}
{% endblock %}
```

**Note:** There is **nothing** magic in how the javascript loads. This means that you can use django-compressor or anything.

If you didn’t click any, and this is your first install: bravo!
6.1 v1 to v2

6.1.1 Upgrading from django-autocomplete-light v1 to v2

You should not use widget directly anymore

We used to have things like this:

```python
class YourForm(autocomplete_light.GenericModelForm):
    user = forms.ModelChoiceField(User.objects.all(),
        widget=autocomplete_light.ChoiceWidget('UserAutocomplete'))

    related = GenericModelChoiceField(
        widget=autocomplete_light.ChoiceWidget(
            autocomplete='AutocompleteTaggableItems',
            autocomplete_js_attributes={'minimum_characters': 0}))

    class Meta:
        model = YourModel
```

This caused several problems:

- broke a DRY principle: if you have defined a `user` foreign key and registered an Autocomplete for the model in question, `User`, then you should not have to repeat this.
- broke the DRY principle since you had to set choices on both the `ModelChoiceField` and the Autocomplete - `UserAutocomplete` in this example.
- also, validation was done in the widget’s `render()` function, mostly for security reasons. Validation is not done in the widget anymore, instead it is done in `autocomplete_light.fields`.

What should the above code be like? Well it depends, it could just be:

```python
class YourForm(autocomplete_light.ModelForm):
    class Meta:
        model = YourModel
```

If you have registered an Autocomplete for the model that the `user` ForeignKey is for, then `autocomplete_light.ModelForm` will pick it up automatically.

Assuming you have registered a generic autocomplete, `autocomplete_light.ModelForm` will pick it up automatically.
If you want Django’s default behavior back (using a `<select>` tag), then you could tell `autocomplete_light.ModelForm` not to be “autocomplete-aware” for `user` as such:

```python
class YourForm(autocomplete_light.ModelForm):
    class Meta:
        model = YourModel
        autocomplete_exclude = ('user',)
```

`autocomplete_light.ModelChoiceField` and `autocomplete_light.GenericModelChoiceField`:

```python
class YourForm(autocomplete_light.ModelForm):
    user = autocomplete_light.ModelChoiceField('UserAutocomplete')
    related = autocomplete_light.GenericModelChoiceField('AutocompleteTaggableItems')
    class Meta:
        model = YourModel
        autocomplete_exclude = ('user',)
```

You can still override widgets the same way as before, but you should consider the **DRY breaking** implications (which are not specific to django-autocomplete-light, but Django’s design in general).

### Specification of the Autocomplete class to use

New rules are:

- if an Autocomplete class was registered for a model then it becomes the default Autocomplete class for auto-completion on that model,
- other Autocomplete classes registered for a model will not be used by default

You can still define the Autocomplete class you want in the field definition:

```python
class FooForm(autocomplete_light.ModelForm):
    bar = autocomplete_light.ModelChoiceField('SpecialBarAutocomplete')
    class Meta:
        model = Foo
```

But this will break some **break django DRY logic**. Instead, this won’t break DRY:

```python
class FooForm(autocomplete_light.ModelForm):
    class Meta:
        model = Foo
        autocomplete_names = {'bar': 'SpecialBarAutocomplete'}
```

### Python class re-organisation

Form classes like `FixedModelForm` or `GenericModelForm` were renamed. But if you can, just inherit from `autocomplete_light.ModelForm` instead.

Generic field classes were moved from `autocomplete_light.contrib.generic_m2m` into `autocomplete_light.fields`: just import `autocomplete_light.GenericModelChoiceField` and `autocomplete_light.GenericModelMultipleChoiceField <autocomplete_light.fields.GenericModelMultipleChoiceField>`.

### Deprecation of `autocomplete_js_attributes` and `widget_js_attributes`

In the past, we used `autocomplete_js_attributes` and `widget_js_attributes`. Those are deprecated and HTML `data` attributes should be used instead.
For example:

```python
class PersonAutocomplete(AutocompleteModelBase):
    model = Person
    autocomplete_js_attributes = {
        'minimum_characters': 0,
        'placeholder': 'foo',
    }
    widget_js_attributes = {'max_values': 3}
```

Should now be:

```python
class PersonAutocomplete(AutocompleteModelBase):
    model = Person
    attrs = {
        'data-autcomplete-minimum-characters': 0,
        'placeholder': 'foo',
    }
    widget_attrs = {'data-widget-maximum-values': 3}
```

As you probably understand already magic inside `autocomplete_js_attributes` and `widget_js_attributes` is gone. We're just setting plain simple HTML attributes now with `attrs`.

Also notice the other two differences which are detailed below:

- `max-values` was renamed to `maximum-values` (see below)
- `data-autocomplete-placeholder` is gone in favor of HTML5 placeholder attribute (see below)

### max-values was renamed to maximum-values

For consistency with one of my naming conventions which is: no abbreviations.

### data-autocomplete-placeholder is gone in favor of HTML5 placeholder attribute

It made no sense to keep `data-autocomplete-placeholder` since we now have the HTML5 placeholder attribute.

### Widget template changes

This is a side effect from the deprecation of `autocomplete_js_attributes` and `widget_js_attributes`.

This:

```html
<% if widget.widget_js_attributes.max_values == 1 %>
	single
<% else %>
	multiple
<% endif %>

<span class="autocomplete-light-widget {{ name }}" id="{{ widget.html_id }}-wrapper">

<% if widget.widget_js_attributes|autocomplete_light_data_attributes %>

<% if widget.autocomplete_js_attributes|autocomplete_light_data_attributes:'autocomplete-' %>

Is now:

```html
<% if widget.widget_js_attributes %>
</span>
```
Script changes

.yourlabsWidget() used to parse data-* attributes:

- data-foo-bar used to set the JS attribute yourlabs.Widget.fooBar,
- data-autocomplete-foo-bar used to set the JS attribute yourlabs.Widget.autocomplete.fooBar.

Now:

- .yourlabsWidget() parses data-widget-* attributes and,
- .yourlabsAutocomplete() parses data-autocomplete-* on the `<input>`!

So this:

```html
<span class="autocomplete-light-widget" data-autocomplete-foo-bar="2" data-foo-bar="3">
  <input .. />
</span>
```

Becomes:

```html
<span class="autocomplete-light-widget" data-widget-foo-bar="3">
  <input data-autocomplete-foo-bar="2" ... />
</span>
```

.choiceDetail and .choiceUpdate were renamed to .choice-detail and .choice-update

This makes the CSS class names standard.

6.2 Other upgrades

Run `pip install -U django-autocomplete-light`. Check the CHANGELOG for BC (Backward Compatibility) breaks. There should be none for minor version upgrades ie. from 1.1.3 to 1.1.22, but there might be some minor BC breaks for middle upgrades ie. 1.2.0 to 1.3.0.
Enabling autocompletes inside and outside of the admin has become piece of cake.

7.1 Tutorial

7.1.1 autocomplete_light.register() shortcut to generate and register Autocomplete classes

Register an Autocomplete for your model in your_app/autocomplete_light_registry.py, it can look like this:

```python
import autocomplete_light
from models import Person
# This will generate a PersonAutocomplete class
autocomplete_light.register(Person,
    # Just like in ModelAdmin.search_fields
    search_fields=['^first_name', 'last_name'],
    attrs={
        # This will set the input placeholder attribute:
        'placeholder': 'Other model name ?',
        # This will set the yourlabs.Autocomplete.minimumCharacters
        # options, the naming conversion is handled by jQuery
        'data-autocomplete-minimum-characters': 1,
    },
    # This will set the data-widget-maximum-values attribute on the
    # widget container element, and will be set to
    # yourlabs.Widget.maximumValues (jQuery handles the naming
    # conversion).
    widget_attrs={
        'data-widget-maximum-values': 4,
        # Enable modern-style widget !
        'class': 'modern-style',
    },
)
```

AutocompleteView.get() can proxy PersonAutocomplete.autocomplete_html() because PersonAutocomplete is registered. This means that opening /autocomplete/PersonAutocomplete/ will call AutocompleteView.get() which will in turn call PersonAutocomplete.autocomplete_html().
Also `AutocompleteView.post()` would proxy `PersonAutocomplete.post()` if it was defined. It could be useful to build your own features like on-the-fly object creation using Javascript method overrides like the `remote autocomplete`.

**Warning:** Note that this would make all `Person` public. Fine tuning security is explained later in this tutorial in section **Overriding the queryset of a model autocomplete to secure an Autocomplete.**

`autocomplete_light.register()` generates an Autocomplete class, passing the extra keyword arguments like `AutocompleteModel.search_fields` to the Python `type()` function. This means that extra keyword arguments will be used as class attributes of the generated class. An equivalent version of the above code would be:

```python
class PersonAutocomplete(autocomplete_light.AutocompleteModelBase):
    search_fields = ["^first_name", 'last_name']
    model = Person
taxocomplete_light.register(PersonAutocomplete)
```

**Note:** If you wanted, you could override the default `AutocompleteModelBase` used by `autocomplete_light.register()` to generate Autocomplete classes.

It could look like this (in your project’s `urls.py`):

```python
autocomplete_light.registry.autocomplete_model_base = YourAutocompleteModelBase
autocomplete_light.autodiscover()
```

Refer to the **Autocomplete classes** documentation for details, it is the first chapter of the the reference documentation.
7.1.2 autocomplete_light.modelform_factory() shortcut to generate ModelForms in the admin

First, ensure that scripts are installed in the admin base template.

Then, enabling autocompletes in the admin is as simple as overriding ModelAdmin.form in your_app/admin.py. You can use the modelform_factory() shortcut as such:

```python
class OrderAdmin(admin.ModelAdmin):
    # This will generate a ModelForm
    form = autocomplete_light.modelform_factory(Order)
admin.site.register(Order)
```

Refer to the Form, fields and widgets documentation for other ways of making forms, it is the second chapter of the reference documentation.

7.1.3 autocomplete_light.ModelForm to generate Autocomplete fields, the DRY way

First, ensure that scripts are properly installed in your template.

Then, you can use autocomplete_light.ModelForm to replace automatic Select and SelectMultiple widgets which renders <select> HTML inputs by autocompletion widgets:

```python
class OrderModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = Order
```

Note that the first Autocomplete class registered for a model becomes the default Autocomplete for that model. If you have registered several Autocomplete classes for a given model, you probably want to use a different Autocomplete class depending on the form using Meta.autocomplete_names:

```python
class OrderModelForm(autocomplete_light.ModelForm):
    class Meta:
        autocomplete_names = {'company': 'PublicCompanyAutocomplete'}
        model = Order
```

autocomplete_light.ModelForm respects Meta.fields and Meta.exclude. However, you can enable or disable autocomplete_light.ModelForm's behaviour in the same fashion with Meta.autocomplete_fields and Meta.autocomplete_exclude:

```python
class OrderModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = Order
# only enable autocompletes on 'person' and 'product' fields
        autocomplete_fields = ('person', 'product')
```

```python
class PersonModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = Order
# do not make 'category' an autocomplete field
        autocomplete_exclude = ('category',)
```

Also, it will automatically enable autocompletes on generic foreign keys and generic many to many relations if you have at least one generic Autocomplete class register (typically an AutocompleteGenericBase).

For more documentation, continue reading the reference documentation.
If you need anything more than just enabling autocompletes in the admin, then you should understand django-autocomplete-light’s architecture. Because you can override any part of it.

The architecture is based on 3 main parts which you can override to build insanely creative features as many users already did.

### 8.1 Autocomplete classes

**Note:** This chapter assumes that you have been through the entire *Tutorial*.

#### 8.1.1 Design documentation

Any class which implements `AutocompleteInterface` is guaranteed to work because it provides the methods that are expected by the view which serves autocomplete contents from ajax, and the methods that are expected by the form field for validation and by the form widget for rendering.

However, implementing those methods directly would result in duplicate code, hence `AutocompleteBase`. It contains all necessary rendering logic but lacks any business-logic, which means that it is not connected to any data.

If you wanted to make an Autocomplete class that implements business-logic based on a python list, you would end up with `AutocompleteList`.

As you need both business-logic and rendering logic for an Autocomplete class to be completely usable, you would mix both `AutocompleteBase` and `AutocompleteList` resulting in `AutocompleteListBase`:

![Diagram showing inheritance hierarchy of Autocomplete classes](image)

If you wanted to re-use your python list business logic with a template based rendering logic, you would mix `AutocompleteList` and `AutocompleteTemplate`, resulting in `AutocompleteListTemplate`:
So far, you should understand that rendering and business logic are not coupled in autocomplete classes: you can make your own business logic (i.e. using redis, haystack ...) and re-use an existing rendering logic (i.e. AutocompleteBase or AutocompleteTemplate) and vice-versa.

For an exhaustive list of Autocomplete classes, refer to the Autocomplete API doc.

One last thing: Autocomplete classes should be registered so that the view can serve them and that form fields and widget be able to re-use them. The registry itself is rather simple and filled with good intentions, refer to Registry API documentation.

### 8.1.2 Examples

**Create a basic list-backed autocomplete class**

Class attributes are thread safe because register() always creates a class copy. Hence, registering a custom Autocomplete class for your model in your_app/autocomplete_light_registry.py could look like this:

```python
import autocomplete_light

class OsAutocomplete(autocomplete_light.AutocompleteListBase):
    choices = ['Linux', 'BSD', 'Minix']

autocomplete_light.register(OsAutocomplete)
```

First, we imported autocomplete_light’s module. It should contain everything you need.

Then, we subclassed autocomplete_light.AutocompleteListBase, setting a list of OSes in the choices attribute.

Finally, we registered the Autocomplete class. It will be registered with the class name by default.

**Note:** Another way of achieving the above using the register shortcut could be:

```python
autocomplete_light.register(autocomplete_light.AutocompleteListBase,
    name='OsAutocomplete', choices=['Linux', 'BSD', 'Minix'])
```

**Using a template to render the autocomplete**

You could use AutocompleteListTemplate instead of AutocompleteListBase:

```python
import autocomplete_light

class OsAutocomplete(autocomplete_light.AutocompleteListTemplate):
    choices = ['Linux', 'BSD', 'Minix']
    autocomplete_template = 'your_autocomplete_box.html'
```
Inheriting from `AutocompleteListTemplate` instead of `AutocompleteListBase` like as show in the previous example enables two optionnal options:

- `autocomplete_template` which we have customized, if we hadn’t then `AutocompleteTemplate.choice_html()` would have fallen back on the parent `AutocompleteBase.choice_html()`.
- `choice_template` which we haven’t set, so `AutocompleteTemplate.choice_html()` will fall back on the parent `AutocompleteBase.choice_html()`.

See [Design documentation](#) for details.

Note: Another way of achieving the above could be:

```python
code
from autocomplete_light import AutocompleteListTemplate

class OsAutocomplete(AutocompleteListTemplate):
    name = 'OsAutocomplete'
    choices = ['Linux', 'BSD', 'Minix']
    autocomplete_template = 'your_autocomplete_box.html'

code
```

Creating a basic model autocomplete class

Registering a custom Autocomplete class for your model in `your_app/autocomplete_light_registry.py` can look like this:

```python
code
from models import Person

class PersonAutocomplete(AutocompleteModelBase):
    search_fields = ['^first_name', 'last_name']

code

``` AutocompleteLight register(Person, PersonAutocomplete)

In the same fashion, you could have used `AutocompleteModelTemplate` instead of `AutocompleteModelBase`. You can see that the inheritance diagram follows the same pattern:

![Inheritance Diagram](#)

Note: An equivalent of this example would be:

```python
code
from autocomplete_light import AutocompleteModel

code
```

Overriding the queryset of a model autocomplete to secure an Autocomplete

You can override any method of the Autocomplete class. Filtering choices based on the request user could look like this:

```python
code
from models import Person

class PersonAutocomplete(AutocompleteModelBase):
    search_fields = ['^first_name', 'last_name']

code

```
**class PersonAutocomplete (autocomplete_light.AutocompleteModelBase):**

```python
    search_fields = ['^first_name', 'last_name'])
    model = Person
```

```python
    def choices_for_request(self):
        if not self.request.user.is_staff:
            self.choices = self.choices.filter(private=False)
        return super(PersonAutocomplete, self).choices_for_request()
```

It is very important to note here, that `clean()` will raise a `ValidationError` if a model is selected in a `ModelChoiceField` or `ModelMultipleChoiceField`

**Note:** Use at your own discretion, as this can cause problems when a choice is no longer part of the queryset, just like with django’s Select widget.

---

**Registering the same Autocomplete class for several autocompletes**

This code registers an autocomplete with name `ContactAutocomplete`:

```python
    autocomplete_light.register(ContactAutocomplete)
```

To register two autocompletes with the same class, pass in a name argument:

```python
    autocomplete_light.register(ContactAutocomplete, name='Person',
                           choices=Person.objects.filter(is_company=False))
    autocomplete_light.register(ContactAutocomplete, name='Company',
                           choices=Person.objects.filter(is_company=True))
```

---

**8.2 Form, fields and widgets**

**Note:** This chapter assumes that you have been through `Tutorial` and `Autocomplete classes`.

---

**8.2.1 Design documentation**

This app provides optionnal helpers to make forms:

- `autocomplete_light.modelform_factory` which wraps around django’s modelform_factory but uses the heroic `autocomplete_light.ModelForm`.
- `autocomplete_light.ModelForm`: the heroic ModelForm which ties all our loosely coupled tools together:
  - `SelectMultipleHelpTextRemovalMixin`, which removes the “Hold down control or command to select more than one” help text on autocomplete widgets (fixing Django ticket #9321),
  - `VirtualFieldHandlingMixin` which enables support for generic foreign keys,
- `GenericM2MRelatedObjectDescriptorHandlingMixin` which enables support for generic many to many, if django-genericm2m is installed,
- `ModelFormMetaclass` which enables `FormFieldCallback` to replace the default form field creator replacing `<select>` with autocompletes for relations and creates generic foreign key and generic many to many fields.

You probably already know that Django has form-fields for validation and each form-field has a widget for rendering logic.

`autocomplete_light.FieldBase` makes a form field field rely on an Autocomplete class for initial choices and validation (hail DRY configuration!), it is used as a mixin to make some simple field classes:

- `autocomplete_light.ChoiceField`,
- `autocomplete_light.MultipleChoiceField`,
- `autocomplete_light.ModelChoiceField`,
- `autocomplete_light.ModelMultipleChoiceField`,
- `autocomplete_light.GenericModelChoiceField`, and
- `autocomplete_light.GenericModelMultipleChoiceField`.

In the very same fashion, `autocomplete_light.WidgetBase` renders a template which should contain:

- a hidden `<select>` field containing real field values,
- a visible `<input>` field which has the autocomplete,
- a deck which contains the list of selected values,
- add-another optionnal link, because add-another works outside the admin,
- a hidden choice template, which is copied when a choice is created on the fly (ie. with add-another).

It is used as a mixin to make some simple widget classes:

- `autocomplete_light.ChoiceWidget`,
- `autocomplete_light.MultipleChoiceWidget`,

### 8.2.2 Examples

This basic example demonstrates how to use an autocomplete form field in a form:

```python
class YourForm(forms.Form):
    os = autocomplete_light.ChoiceField('OsAutocomplete')
```

**Using `autocomplete_light.ModelForm`**

Consider such a model which have every kind of relations that are supported out of the box:

```python
class FullModel(models.Model):
    name = models.CharField(max_length=200)
    
    oto = models.OneToOneField('self', related_name='reverse_oto')
    fk = models.ForeignKey('self', related_name='reverse_fk')
    mtm = models.ManyToManyField('self', related_name='reverse_mtm')
```
content_type = models.ForeignKey(ContentType)
object_id = models.PositiveIntegerField()
gfk = generic.GenericForeignKey("content_type", "object_id")

# that's generic many to many as per django-generic-m2m
gmtm = RelatedObjectsDescriptor()

Assuming that you have registered an Autocomplete for FullModel and a generic Autocomplete, then autocomplete_light.ModelForm will contain 5 autocompletion fields by default: oto, fk, mtm, gfk and gmtm.

class FullModelModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = FullModel
        # add for django 1.6:
        fields = '__all__'

autocomplete_light.ModelForm gives autocompletion super powers to django.forms.ModelForm. To disable the fk input for example:

class FullModelModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = FullModel
        exclude = ['fk']

Or, to just get the default <select> widget for the fk field:

class FullModelModelForm(autocomplete_light.ModelForm):
    class Meta:
        model = FullModel
        autocomplete_exclude = ['fk']

In the same fashion, you can use Meta.fields and Meta.autocomplete_fields. To the difference that they all understand generic foreign key names and generic relation names in addition to regular model fields.

Not using autocomplete_light.ModelForm

Instead of using our autocomplete_light.ModelForm, you could create such a ModelForm using our mixins:

class YourModelForm(autocomplete_light.SelectMultipleHelpTextRemovalMixin,
    autocomplete_light.VirtualFieldHandlingMixin,
    autocomplete_light.GenericM2MRelatedObjectDescriptorHandlingMixin,
    forms.ModelForm):
    pass

This way, you get a fully working ModelForm which does not handle any field generation. You can use form fields directly though, which is demonstrated in the next example.

Using form fields directly

You might want to use form fields directly for any reason:

- you don’t want to or can’t extend autocomplete_light.ModelForm,
- you want to override a field, ie. if you have several Autocomplete classes registered for a model or for generic relations and you want to specify it,
- you want to override any option like placeholder, help_text and so on.
Considering the model of the above example, this is how you could do it:

class FullModelModelForm(autocomplete_light.ModelForm):
    # Demonstrate how to use a form field directly
    oto = autocomplete_light.ModelChoiceField('FullModelAutocomplete')
    fk = autocomplete_light.ModelChoiceField('FullModelAutocomplete')
    m2m = autocomplete_light.ModelMultipleChoiceField('FullModelAutocomplete')
    # It will use the default generic Autocomplete class by default
    gfk = autocomplete_light.GenericModelChoiceField()
    gmtm = autocomplete_light.GenericModelMultipleChoiceField()

    class Meta:
        model = FullModel
        # django 1.6:
        fields = '__all__'

As you see, it’s as easy as 1-2-3, but keep in mind that this can break DRY: *Model field’s help_text and verbose_name are lost when overriding the widget.*

### Using your own form in a ModelAdmin

You can use this form in the admin too, it can look like this:

```python
from django.contrib import admin
from forms import OrderForm
from models import Order

class OrderAdmin(admin.ModelAdmin):
    form = OrderForm

admin.site.register(Order, OrderAdmin)
```

**Note:** Ok, this has nothing to do with `django-autocomplete-light` because it is plain Django, but still it might be useful to someone.

### 8.3 Scripts: the javascript side of autocompletes

**Note:** This chapter assumes that you have been through *Tutorial* and *Autocomplete classes* and *Form, fields and widgets*.

#### 8.3.1 Design documentation

Before installing your own autocomplete scripts, you should know about the humble provided scripts:

- `autocomplete.js` provides `yourlabs.Autocomplete` via the `$().yourlabsAutocomplete()` jQuery extension: add an autocomplete box to a text input, it can be used on its own to create a navigation autocomplete like facebook and all the cool kids out there.

- `widget.js` provides `yourlabs.Widget` via the `$().yourlabsWidget()` jQuery extension: combine an text input with an autocomplete box with a django form field which is represented by a hidden `<select>`.

- `addanother.js` enables adding options to a `<select>` via a popup from outside the admin, code mostly comes from Django admin BTW,
• remote.js provides yourlabs.RemoteAutocompleteWidget, used extend yourlabs.Widget and override yourlabs.Widget.getValue to create choices on-the-fly.

• text_widget.js provides yourlabs.TextWidget, used to manage the value of a text input that has an autocomplete box.

Why a new autocomplete script you might ask? What makes this script unique is that it relies on the server to render the contents of the autocomplete-box. This means that you can fully design it like you want, including new HTML tags like `<img>`, using template tags like `{% url %}`, and so on.

If you want to change something on the javascript side, chances are that you will be better off overriding a method like yourlabs.RemoteAutocompleteWidget instead of installing your own script right away.

What you need to know is that:

• widgets don’t render any inline javascript: the have HTML attributes that will tell the scripts how to instanciate objects with `$.yourlabsWidget()`, `$.yourlabsTextWidget()` and so on. This allows to support dynamically inserted widgets ie. with a dynamic formsets inside or outside of django admin.

• the particular attribute that is watched for is data-bootstrap. If an HTML element with class `.autocomplete-light-widget` is found or created with data-bootstrap="normal" then widget.js will call `.yourlabsWidget`.

• if you customize data-bootstrap, widget.js will not do anything and you are free to implement your script, either by extending a provided a class, either using a third-party script, either completely from scratch.

8.3.2 Examples

django-autocomplete-light provides consistent JS plugins. A concept that you understand for one plugin is likely to be appliable for others.

Using `$.yourlabsAutocomplete` to create a navigation autocomplete

If your website has a lot of data, it might be useful to add a search input somewhere in the design. For example, there is a search input in Facebook’s header. You will also notice that the search input in Facebook provides an autocomplete which allows to directly navigate to a particular object’s detail page. This allows a visitor to jump to a particular page with very few effort.

Our autocomplete script is designed to support this kind of autocomplete. It can be enabled on an input field and query the server for a rendered autocomplete with anything like images and nifty design. Just create a view that renders just a list of links based on `request.GET.q`.

Then you can use it to make a global navigation autocomplete using `autocomplete.js` directly. It can look like this:

```javascript
// Make a javascript Autocomplete object and set it up
var autocomplete = $('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
});
```

So when the user clicks on a link of the autocomplete box which is generated by your view: it is like if he clicked on a normal link.

You’ve learned that you can have a fully functional navigation autocomplete like on Facebook with just this:

```javascript
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
    choiceSelector: 'a',
}).input.bind('selectChoice', function(e, choice, autocomplete) {
```
window.location.href = choice.attr('href');
});

autocomplete.js doesn’t do anything but trigger selectChoice on the input when a choice is selected either with mouse or keyboard, let’s enable some action:

Because the script doesn’t know what HTML the server returns, it is nice to tell it how to recognize choices in the autocomplete box HTML:: This will allow to use the keyboard arrows up/down to navigate between choices.

Refer to Making a global navigation autocomplete for complete help on making a navigation autocomplete.

Overriding a JS option in Python

Javascript widget and autocomplete objects options can be overridden via HTML data attributes:

- yourlabs.Autocomplete will use any data-autocomplete-* attribute on the input tag.
- yourlabs.Widget will use any data-widget-* attribute on the widget container.

Those can be set in Python either with register(), as Autocomplete class attributes or as widget attributes. See next examples for details.

Per registered Autocomplete

These options can be set with the register() shortcut:

```python
autocomplete_light.register(Person,
   attrs={
      'placeholder': 'foo',
      'data-autocomplete-minimum-characters': 0
   },
   widget_attrs={'data-widget-maximum-values': 4}
})
```

Per Autocomplete class

Or equivalently on a Python Autocomplete class:

```python
class YourAutocomplete(autocomplete_light.AutocompleteModelBase):
    model = Person
    attrs={
      'placeholder': 'foo',
      'data-autocomplete-minimum-characters': 0
    },
    widget_attrs={'data-widget-maximum-values': 4}
```

Per widget

Or via the Python widget class:

```python
autocomplete_light.ChoiceWidget('FooAutocomplete',
   attrs={
      'placeholder': 'foo',
      'data-autocomplete-minimum-characters': 0
   },
```

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Override autocomplete JS options in JS

The array passed to the plugin function will actually be used to $.extend the autocomplete instance, so you can override any option, ie:

```javascript
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
    hideAfter: 200,
    choiceSelector: '[data-url]',
    minimumCharacters: 1,
    placeholder: '{% trans 'Type your search here ...' %}',
    appendAutocomplete: $('#yourElement'),
    autocompleteZIndex: 1000,
});
```

**Note:** The pattern is the same for all plugins provided by django-autocomplete-light.

Override autocomplete JS methods

Overriding methods works the same, ie:

```javascript
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
    choiceSelector: '[data-url]',
    getQuery: function() {
        return this.input.val() + '&search_all=' + $('#searchAll').val();
    },
    hasChanged: function() {
        return true; // disable cache
    },
});
```

**Note:** The pattern is the same for all plugins provided by django-autocomplete-light.

Overload autocomplete JS methods

Use call to call a parent method. This example automatically selects the choice if there is only one:

```javascript
$(document).ready(function() {
    var autocomplete = $('#id_city_text').yourlabsAutocomplete();
    autocomplete.show = function(html) {
```
yourlabs.Autocomplete.prototype.show.call(this, html)
var choices = this.box.find(this.choiceSelector);

if (choices.length == 1) {
    this.input.trigger('selectChoice', [choices, this]);
}
});

Get an existing autocomplete object and chain autocompletes

You can use the jQuery plugin yourlabsAutocomplete() to get an existing autocomplete object. Which makes chaining autocompletes with other form fields as easy as:

$('#country').change(function() {
    $('#yourInput').yourlabsAutocomplete().data = {
        'country': $(this).val();
    }
});

Overriding widget JS methods

The widget js plugin will only bootstrap widgets which have data-bootstrap="normal". Which means that you should first name your new bootstrapping method to ensure that the default behaviour doesn’t get in the way.

autocomplete_light.register(City,
    widget_attrs={'data-widget-bootstrap': 'your-custom-bootstrap'})

Note: You could do this at various level, by setting the bootstrap argument on a widget instance, via register() or directly on an autocomplete class. See Overriding JS options in Python for details.

Now, you can instantiate the widget yourself like this:

$(document).bind('yourlabsWidgetReady', function() {
    $('.your.autocomplete-light-widget[data-bootstrap=your-custom-bootstrap]').live('initialize', function()
        $(this).yourlabsWidget({
            // Override options passed to $.yourlabsAutocomplete() from here
            autocompleteOptions: {
                url: '{% url "your_autocomplete_url" %}',
            // Override any autocomplete option in this array if you want
                choiceSelector: '[data-id]',
            },
            // Override some widget options, allow 3 choices:
            maxValues: 3,
            // or method:
            getValue: function(choice) {
                // This is the method that returns the value to use for the
                // hidden select option based on the HTML of the selected
                // choice.
                //
                // This is where you could make a non-async post request to
                // this.autocomplete.url for example. The default is:
                return choice.data('id')
            },
        });
    });
});

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You can use the remote autocomplete as an example.

Note: You could of course call `$yourlabsWidget()` directly, but using the `yourlabsWidgetReady` event takes advantage of the built-in `DOMNodeInserted` event: your widgets will also work with dynamically created widgets (ie. admin inlines).

### 8.4 Voodoo black magic

This cookbook is a work in progress. Please report any error or things that could be explained better! And make pull requests heh ...

#### 8.4.1 High level Basics

Various cooking recipes `your_app/autocomplete_light_registry.py`:

```python
# This actually creates a thread safe subclass of AutocompleteModelBase.
autocomplete_light.register(SomeModel)

# If NewModel.get_absolute_url or get_absolute_update_url is defined, this
# will look more fancy
autocomplete_light.register(NewModel,
    autocomplete_light.AutocompleteModelTemplate)

# Extra **kwargs are used as class properties in the subclass.
autocomplete_light.register(SomeModel,
    name='AutocompleteSomeModelNew',
    choices=SomeModel.objects.filter(new=True))

# It is possible to override javascript options from Python.
autocomplete_light.register(OtherModel,
    attrs={
        # This will actually data-autocomplete-minimum-characters which
        # will set widget.autocomplete.minimumCharacters.
        # 'data-autocomplete-minimum-characters': 0,
        # 'placeholder': 'Other model name ?',
    })

# But you can make your subclass yourself and override methods.
class YourModelAutocomplete(autocomplete_light.AutocompleteModelTemplate):
    template_name = 'your_app/your_special_choice_template.html'
    attrs = {
        'data-mininum-minimum-characters': 4,
        'placeholder': 'choose your model',
    }

    widget_attrs = {
        # That will set widget.maximumValues, naming conversion is done by
```
# jQuery.data()

'**data-widget-maximum-values': 6,

'**class': 'your-custom-class',

}

```python
def choices_for_request(self):
    """ Return choices for a particular request """
    self.choices = self.choices.exclude(extra=self.request.GET.get('extra'))
    return super(YourModelAutocomplete, self).choices_for_request()
```

# Just pass the class to register and it’ll subclass it to be thread safe.
autocomplete_light.register(YourModel, YourModelAutocomplete)

# This will subclass the subclass, using extra kwargs as class attributes.
autocomplete_light.register(YourModel, YourModelAutocomplete,
    # Again, registering another autocomplete for the same model, requires
    # registration under a different name
    name='YourModelOtherAutocomplete',
    # Extra **kwargs passed to register have priority.
    choice_template='your_app/other_template.html'
)

Various cooking recipes for `your_app/forms.py`:

# Use as much registered autocompletes as possible.
SomeModelForm = autocomplete_light.modelform_factory(SomeModel,
    exclude=('some_field'))

# Same with a custom autocomplete_light.ModelForm
class CustomModelForm(autocomplete_light.ModelForm):
    # autocomplete_light.ModelForm will set up the fields for you
    some_extra_field = forms.CharField()

class Meta:
    model = SomeModel

# Using form fields directly in any kind of form
class NonModelForm(forms.Form):
    user = autocomplete_light.ModelChoiceField('UserAutocomplete')

cities = autocomplete_light.ModelMultipleChoiceField('CityAutocomplete',
    widget=autocomplete_light.MultipleChoiceWidget('CityAutocomplete',
        # Those attributes have priority over the Autocomplete ones.
        attrs={'data-autocomplete-minimum-characters': 0,
            'placeholder': 'Choose 3 cities ...'},
        widget_attrs={'data-widget-maximum-values': 3}))

tags = forms.TextField(widget=autocomplete_light.TextWidget('TagAutocomplete'))

## 8.4.2 Low level basics

This is something you probably won’t need in the mean time. But it can turn out to be useful so here it is.

Various cooking recipes for `autocomplete.js`, useful if you want to use it manually for example to make a navigation autocomplete like Facebook:

```javascript
// Use default options, element id attribute and url options are required:
var autocomplete = $('#yourInput').yourlabsAutocomplete({
```
url: '{% url "your_autocomplete_url" %}'
});

// Because the jQuery plugin uses a registry, you can get the autocomplete
// instance again by calling yourlabsAutocomplete() again, and patch it:
$('#country').change(
    function () {
        $('#yourInput').yourlabsAutocomplete().data = {
            'country': $(this).val();
        }
    });

// And that’s actually how to do chained autoCompletes.

// The array passed to the plugin will actually be used to $.extend the
// autocomplete instance, so you can override any option:
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}'
});

// Or any method:
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
    choiceSelector: '[data-url]',
    getQuery: function() {
        return this.input.val() + '&search_all=' + $('#searchAll').val();
    },
    hasChanged: function() {
        return true; // disable cache
    },
});

// autocomplete.js doesn’t do anything but trigger selectChoice when
// an option is selected, let’s enable some action:
$('#yourInput').bind('selectChoice', function(e, choice, autocomplete) {
    window.location.href = choice.attr('href');
});

// For a simple navigation autocomplete, it could look like:
$('#yourInput').yourlabsAutocomplete({
    url: '{% url "your_autocomplete_url" %}',
    choiceSelector: 'a',
}).input.bind('selectChoice', function(e, choice, autocomplete) {
    window.location.href = choice.attr('href');
});

Using widget.js is pretty much the same:
```javascript
$('#yourWidget').yourlabsWidget({
  autocompleteOptions: {
    url: '{% url "your_autocomplete_url" %}
      // Override any autocomplete option in this array if you want
    choiceSelector: '[data-id]',
  },
  // Override some widget options, allow 3 choices:
  maximumValues: 3,
  // or method:
  getValue: function(choice) {
    return choice.data('id'),
  },
});

// Supporting dynamically added widgets (ie. inlines) is
// possible by using "solid initialization":
$(document).bind('yourlabsWidgetReady', function()
  $('.your.autocomplete-light-widget[data-bootstrap=your-custom-bootstrap]').live('initialize', function()
    $(this).yourlabsWidget({
      // your options ...
    });
});

// This method takes advantage of the default DOMNodeInserted observer
// served by widget.js

There are some differences with autocomplete.js:

- widget expect a certain HTML structure by default,
- widget options can be overridden from HTML too,
- widget can be instanciated automatically via the default bootstrap

Hence the widget.js HTML cookbook:

```html
<!--
  - class=autocomplete-light-widget: get picked up by widget.js defaults,
  - any data-widget-* attribute will override yourlabs.Widget.js option,
  - data-widget-bootstrap=normal: Rely on automatic bootstrap because
    if don’t need to override any method, but you could change
    that and make your own bootstrap, enabling you to make
    chained autocomplete, create options, whatever ...
  - data-widget-maximum-values: override a widget option maximumValues, note
    that the naming conversion is done by jQuery.data().
--><span
  class="autocomplete-light-widget"
  data-widget-bootstrap="normal"
  data-widget-maximum-values="3"
>

<!--
Expected structure: have an input, it can set override default
autocomplete options with data-autocomplete-* attributes, naming
conversion is done by jQuery.data().
--><input
  type="text"
  data-autocomplete-minimum-characters="0"

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Default expected structure: have a .deck element to append selected choices too:

```html
<span class="deck">
  <!-- Suppose a choice was already selected: -->
  <span class="choice" data-value="1234">Option #1234</span>
</span>
```

Default expected structure: have a multiple select.value-select:

```html
<select style="display:none" class="value-select" name="your_input" multiple="multiple">
  <!-- If option 1234 was already selected: -->
  <option value="1234">Option #1234</option>
</select>
```

Default expected structure: a .remove element that will be appended to choices, and that will de-select them on click:

```html
<span style="display:none" class="remove">Remove this choice</span>
```

Finally, supporting new options to be created directly in the select in javascript (ie. add another) is possible with a .choice-template. Of course, you can’t take this very far, since all you have is the new option’s value and html.

```html
<span style="display:none" class="choice-template">
  <span class="choice">
  </span>
</span>
```

Read everything about the registry and widgets.
Using just the concepts you’ve learned in the reference, here are some of the things you can do.

### 9.1 Styling autocomplete

A complete autocomplete widget has three parts you can style individually:

- the autocomplete widget, rendered on the form,
- the autocomplete box, fetched by ajax,
- choices presented by both the autocomplete box and widget deck.

Note that a choice HTML element is copied from the autocomplete box into the deck upon selection. It is then appended a “remove” element, that will remove the choice upon click.

#### 9.1.1 Styling choices

By default, choices are rendered by the `choice_html()` method. The result of this method will be used in the autocomplete box as well as in the widget deck. There are three easy ways to customize it:

- overriding `AutocompleteBase.choice_html_format`
- overriding `AutocompleteBase.choice_html()`
- or even with a template specified in `AutocompleteTemplate.choice_template`

**Overriding `AutocompleteBase.choice_html_format`**

The easiest and most limited way to change how a choice is rendered is to override the `AutocompleteBase.choice_html_format` attribute.

For example:

```python
class OsAutocomplete(autocomplete_light.AutocompleteListBase):
    choices = ['Linux', 'BSD', 'Minix']
    choice_html_format = u'<span class="block os" data-value="%s">%s</span>'
```

This will add the class `os` to choices.
Overriding AutocompleteBase.choice_html()

Overriding AutocompleteBase.choice_html() enables changing the way choices are rendered. For example:

class PersonAutocomplete(AutocompleteModelBase):
    choice_html_format = u''
    <span class="block" data-value="@s"> <img src="@s" /> @s</span>

def choice_html(self, choice):
    return self.choice_html_format % (self.choice_value(choice),
        choice.profile_image.url, self.choice_label(choice))

Overriding AutocompleteTemplate.choice_template

Perhaps the coolest way to style choices is to use a template. Just set AutocompleteTemplate.choice_template. It is used by AutocompleteTemplate.choice_html:

class PersonAutocomplete(AutocompleteModelTemplate):
    choice_template = 'person_choice.html'

Now, all you have to do is create a person_choice.html template. Consider this elaborated example with image and links to the detail page and admin change form:

{% load i18n %}
{% load thumbnail %}

<span class="block person" data-value="{{ choice.pk }}">
    <img src="{% thumbnail choice.profile_image.url 50x50 crop %}" />
    <a href="{% url 'admin:persons_person_change' choice.pk %}">
        {{ choice.first_name }} {{ choice.last_name }}
    </a>
    <a href="{% url 'admin:persons_person_change' choice.pk %}">
        {% trans 'Edit person' %}
    </a>
    {% if choice.company %}
    <a href="{% url 'admin:persons_person_change' choice.pk %}">
        {{ choice.company }}
    </a>
    {% endif %}
</span>

First, the template loads the i18n template tags library which enables the {% trans %} template tag, useful for internationalization.

Then, it defines the <span> tag, this element is valid anywhere even if your autocomplete widget is rendered in a <table>. However, this <span> element has the block class which makes it display: block for space. Also, it adds the person class to enable specific CSS stylings. Finally it defines the data-value attribute. Note that the "data-value" is critical because it is what tells autocomplete.js that this element is a choice, and it also tells widget.js that the value is {{ choice.pk }} (which will be rendered before widget.js gets its hands on it of course).
9.1.2 Styling autocomplete boxes

By default, the autocomplete box is rendered by the `autocomplete_html()` method. The result of this method will be used to render the autocomplete box. There are many ways to customize it:

- overriding `AutocompleteBase.autocomplete_html_format`,
- overriding `AutocompleteBase.autocomplete_html()`,
- or even with a template specified in `AutocompleteTemplate.autocomplete_template` if using `AutocompleteTemplate` for rendering logic.

Overriding `AutocompleteBase.autocomplete_html_format`

The easiest and most limited way to change how a autocomplete is rendered is to override the `AutocompleteBase.autocomplete_html_format` attribute.

For example:

```python
class OsAutocomplete(AutocompleteListBase):
    autocompletes = ['Linux', 'BSD', 'Minix']
    autocomplete_html_format = u'<span class="autocomplete-os">%s</span>'
```

This will add the `autocomplete-os` class to the autocomplete box.

Overriding `AutocompleteBase.autocomplete_html`

Overriding `AutocompleteBase.autocomplete_html()` enables changing the way autocompletes are rendered.

For example:

```python
class PersonAutocomplete(AutocompleteModelBase):
    autocomplete_html_format = u''
    <span class="count">%s Persons matching your query</span>
    <span class="count">%s</span>

    def autocomplete_html(self):
        html = ''.join(
            [self.choice_html(c) for c in self.choices_for_request()])

        if not html:
            html = self.empty_html_format % _('no matches found').capitalize()

        count = len(self.choices_for_request())
        return self.autocomplete_html_format % (count, html)
```

This will add a choice counter at the top of the autocomplete.

Overriding `AutocompleteTemplate.autocomplete_template`

Perhaps the coolest way to style an autocomplete box is to use a template. Just set `AutocompleteTemplate.autocomplete_template`. It is used by `AutocompleteTemplate.autocomplete_html`:

9.1. Styling autocompletes
class PersonAutocomplete(autocomplete_light.AutocompleteModelTemplate):
    autocomplete_template = 'person_autocomplete.html'

Now, all you have to do is create a `person_autocomplete.html` template. Consider this elaborated example with user-friendly translated messages:

```django
{% load i18n %}
{% load autocomplete_light_tags %}

{% if choices %}
    <h2>{% trans 'Please select a person' %}</h2>
    {% for choice in choices %}
    {{ choice|autocomplete_light_choice_html:autocomplete }}
    {% endfor %}
{% endif %}

{% if choices %}
    <h2>{% trans 'No matching person found' %}</h2>
    <p>{% blocktrans %} Sometimes, persons have not filled their name, maybe try to search based on email addresses ?{% endblocktrans %}</p>
{% endif %}
```

First, it loads Django’s i18n template tags for translation. Then, it loads autocomplete-light’s tags.

If there are any choices, it will display the list of choices, rendered by `choice_html()` through the `autocomplete_light_choice_html` template filter as such: `{{ choice|autocomplete_light_choice_html:autocomplete }}`.

If no choice is found, then it will display a user friendly suggestion.

### 9.1.3 Styling widgets

Widgets are rendered by the `render()` method. By default, it renders `autocomplete_light/widget.html`. While you can override the widget template globally, there are two ways to override the widget template name on a per-case basis:

- `WidgetBase.widget_template`
- `AutocompleteBase.widget_template`

Using another template instead of a global override allows to extend the default widget template and override only the parts you need.

If you’re not sure what is in a widget template, please review part 2 of reference documentation about widget templates.

Also, note that the widget is styled with CSS, you can override or extend any definition of `autocomplete_light/style.css`.

#### AutocompleteModelTemplate

By default, `AutocompleteModelTemplate` sets `choice_template` to `autocomplete_light/model_template/choice.html`. It adds a “view absolute url” link as well as an “update form url” link based on `YourModel.get_absolute_url()` and `YourModel.get_absolute_update_url()` with such a template:

```django
{% load i18n %}
{% load static %}

<span class="block" data-value="{{ choice.pk|unlocalize }}">
```
It does not play well in all projects, so it was not set as default. But you can inherit from it:

```python
class YourAutocomplete(autocomplete_light.AutocompleteModelTemplate):
    model = YourModel
autocomplete_light.register(YourAutocomplete)
```

Or let the `register()` shortcut use it:

```python
autocomplete_light.register(YourModel, autocomplete_light.AutocompleteModelTemplate)
```

Or set it as default with `AutocompleteRegistry.autocomplete_model_base` and used it as such:

```python
autocomplete_light.register(YourModel)
```

### 9.2 Making a global navigation autocomplete

This guide demonstrates how to make a global navigation autocomplete like on Facebook.

Note that there are many ways to implement such a feature, we’re just describing a simple one.

#### 9.2.1 A simple view

As we’re just going to use `autocomplete.js` for this, we only need a view to render the autocomplete. For example:

```python
from django import shortcuts
from django.db.models import Q

from autocomplete_light.example_apps.music.models import Artist, Genre

def navigation_autocomplete(request,
    template_name='navigation_autocomplete/autocomplete.html'):
    q = request.GET.get('q', '')
    queries = {}

    queries['artists'] = Artist.objects.filter(Q(name__icontains=q) | Q(genre__name__icontains=q))
```

9.2. Making a global navigation autocomplete 43
Along with a trivial template for `navigation_autocomplete/autocomplete.html` would work:

```html
<% for artist in artists %>
    <a class="block choice" href="{{ artist.get_absolute_url }}">{{ artist }}</a>
<% endfor %>

<% for genre in genre %>
    <a class="block choice" href="{{ genre.get_absolute_url }}">{{ genre }}</a>
<% endfor %>

9.2.2 A basic autocomplete configuration

That's a pretty basic usage of `autocomplete.js`, concepts are detailed in *Using $.yourlabsAutocomplete to create a navigation autocomplete*, this is what it looks like:

```javascript
// Change #yourInput by a selector that matches the input you want to use for the navigation autocomplete.
$('#yourInput').yourlabsAutocomplete({
    // Url of the view you just created
    url: '{% url "your_autocomplete_url" %}',

    // With keyboard, we should iterate around <a> tags in the autocomplete
    choiceSelector: 'a',
}).input.bind('selectChoice', function(e, choice, autocomplete) {
    // When a choice is selected, open it. Note: this is not needed for mouse click on the links of course, but this is necessary for keyboard selection.
    window.location.href = choice.attr('href');
});
```

9.3 Dependencies between autocompletes

This means that the selected value in an autocomplete widget is used to filter choices from another autocomplete widget.

This page drives through the example in `autocomplete_light/example_apps/dependant_autocomplete/`.

9.3.1 Specifications

Consider such a model:

```python
from django.db import models

class Dummy(models.Model):
    parent = models.ForeignKey('self', null=True, blank=True)
```
```

    country = models.ForeignKey('cities_light.country')
    region = models.ForeignKey('cities_light.region')

    def __unicode__(self):
        return '%s %s' % (self.country, self.region)

And we want two autocompletes in the form, and make the “region” autocomplete to be filtered using the value of the “country” autocomplete.

### 9.3.2 Autocompletes

Register an Autocomplete for Region that is able to use ‘country_id’ GET parameter to filter choices:

```python
import autocomplete_light
from cities_light.models import Country, Region
autocomplete_light.register(Country, search_fields=('name', 'name_ascii',),
    autocomplete_js_attributes={'placeholder': 'country name ..'})

class AutocompleteRegion(autocomplete_light.AutocompleteModelBase):
    autocomplete_js_attributes={'placeholder': 'region name ..'}

def choices_for_request(self):
    q = self.request.GET.get('q', '')
    country_id = self.request.GET.get('country_id', None)

    choices = self.choices.all()
    if q:
        choices = choices.filter(name_ascii__icontains=q)
    if country_id:
        choices = choices.filter(country_id=country_id)

    return self.order_choices(choices)[0:self.limit_choices]

autocomplete_light.register(Region, AutocompleteRegion)
```

### 9.3.3 Javascript

Actually, a normal modelform is sufficient. But it was decided to use Form.Media to load the extra javascript:

```python
from django import forms
import autocomplete_light
from .models import Dummy

class DummyForm(autocomplete_light.ModelForm):
    class Media:
        ""
        We're currently using Media here, but that forced to move the javascript from the footer to the extrahead block ...

        So that example might change when this situation annoys someone a lot.
        """

9.3. Dependencies between autocompletes
That’s the piece of javascript that ties the two autocompletes:

```javascript
$(document).ready(function() {
    $('body').on('change', '.autocomplete-light-widget select[name$=country]', function() {
        var countrySelectElement = $(this);
        var regionSelectElement = $('' + $(this).attr('id').replace('country', 'region'));
        var regionWidgetElement = regionSelectElement.parents('.autocomplete-light-widget');

        // When the country select changes
        value = $(this).val();

        if (value) {
            // If value is contains something, add it to autocomplete.data
            regionWidgetElement.yourlabsWidget().autocomplete.data = {
                'country_id': value[0],
            };
        } else {
            // If value is empty, empty autocomplete.data
            regionWidgetElement.yourlabsWidget().autocomplete.data = {};
        }

        // example debug statements, that does not replace using breakpoints and a proper debugger but can hel
        // console.log($(this), 'changed to', value);
        // console.log(regionWidgetElement, 'data is', regionWidgetElement.yourlabsWidget().autocomplete.data)
    });
});
```

9.3.4 Conclusion

Again, there are many ways to achieve this. It’s just a working example you can test in the demo, you may copy it and adapt it to your needs.

9.4 Generic relations

First, you need to register an autocomplete class for autocompletes on generic relations.

The easiest is to inherit from `AutocompleteGenericBase` or `AutocompleteGenericTemplate`. The main logic is contained in `AutocompleteGeneric` which is extended by both the Base and Template versions.

Generic relation support comes in two flavors:

- for django’s generic foreign keys,
- and for django-generic-m2m’s generic many to many.

`autocomplete_light.ModelForm` will setup the fields:

- `autocomplete_light.GenericModelChoiceField`, and
- `autocomplete_light.GenericModelMultipleChoiceField`. 
Those fields will use the default generic autocomplete class, which is the last one you register as generic. If you want to use several generic autocomplete classes, then you should setup the fields yourself to specify the autocomplete name as such:

```python
class YourModelForm(autocomplete_light.ModelForm):
    # if your GenericForeignKey name is "generic_fk":
    generic_fk = autocomplete_light.GenericModelChoiceField('YourAutocomplete1')

    # if your RelatedObjectsDescriptor is "generic_m2m":
    generic_m2m = autocomplete_light.GenericModelMultipleChoiceField('YourAutocomplete2')
```

But please note that you will lose some DRY by doing that, as stated in the faq.

### 9.4.1 Example using AutocompleteGenericBase

This example demonstrates how to setup a generic autocomplete with 4 models:

```python
class AutocompleteTaggableItems(autocomplete_light.AutocompleteGenericBase):
    choices = (
        User.objects.all(),
        Group.objects.all(),
        City.objects.all(),
        Country.objects.all(),
    )

    search_fields = (
        ('username', 'email'),
        ('name'),
        ('search_names'),
        ('name_ascii'),
    )

autocomplete_light.register(AutocompleteTaggableItems)
```

### 9.5 When things go wrong

There is a convenience view to visualize the registry, login as staff, and open the autocomplete url, for example: /autocomplete_light/.

Ensure that:

- jquery is loaded,
- autocomplete_light/static.html is included once, it should load autocomplete.js, widget.js and style.css,
- your form uses autocomplete_light widgets,
- your channels are properly defined see /autocomplete/ if you included autocomplete_light.urls with prefix /autocomplete/.

If you don’t know how to debug, you should learn to use:

**Firebug javascript debugger**  Open the script tab, select a script, click on the left of the code to place a breakpoint

**Ipdb python debugger**  Install ipdb with pip, and place in your python code: import ipdb; ipdb.set_trace()
If you are able to do that, then you are a professional, enjoy autocomplete_light !!!
If you need help, open an issue on the github issues page.
But make sure you’ve read how to report bugs effectively and how to ask smart questions.
Also, don’t hesitate to do pull requests!
10.1 How to run tests

You should not try to test autocomplete_light from your own project because tests depend on example apps to be present in INSTALLED_APPS. You may use the provided test_project which is prepared to run all tests.

Install a version from git, ie:

```
pip install -e git+https://github.com/yourlabs/django-autocomplete-light.git#egg=autocomplete_light
```

From there you have two choices:

- either go in env/src/autocomplete_light/test_project and run ./manage.py test autocomplete_light,
- either go in env/src/autocomplete_light/ and run tox after installing it from pip.

If you’re trying to run a buildbot then you can use test.sh and use that buildbot configuration to enable CI on the 28 supported configurations:

```python
def make_build(python, django, genericm2m, taggit):
    name = 'py$s-dj$s' % (python, django)
    if genericm2m != '0':
        name += '-genericm2m'
    if taggit != '0':
        name += '-taggit'

    slavenames = ['example-slave']
    if python == '2.7':
        slavenames.append('gina')

    factory = BuildFactory()
    # check out the source
    factory.addStep(Git(repourl='https://github.com/yourlabs/django-autocomplete-light.git', mode='incremental'))
    # run the tests (note that this will require that ‘trial’ is installed)
    factory.addStep(ShellCommand(command=['./test.sh'], timeout=3600))

    c['builders'].append(
        BuilderConfig(name=name,
                      slavenames=slavenames,
                      factory=factory,
                      env={
                          'DJANGO_VERSION': django,
                      }))
```
c['schedulers'].append(SingleBranchScheduler(
    name="all-%s" % name,
    change_filter=filter.ChangeFilter(branch='v2'),
    treeStableTimer=None,
    builderNames=[name]))
c['schedulers'].append(ForceScheduler(
    name="force-%s" % name,
    builderNames=[name]))

for python in pythons:
    for django in djangos:
        if python == '3.3' and django == '1.4':
            continue
        for genericm2m in ['0','1']:
            for taggit in ['0','1']:
                make_build(python, django, genericm2m, taggit)

10.2 Why not use Widget.Media?

In the early versions (0.1) of django-autocomplete-light, we had widgets defining the Media class like this:

```python
class AutocompleteWidget(forms.SelectMultiple):
    class Media:
        js = ('autocomplete_light/autocomplete.js',)
```

This caused a problem if you want to load jquery and autocomplete.js globally anyway and anywhere in the admin to have a global navigation autocomplete: it would double load the scripts.

Also, this didn’t work well with django-compressor and other cool ways of deploying the JS.

So, in the next version, I added a dependency management system. Which sucked and was removed right away to finally keep it simple and stupid as we have it today.

10.3 Model field’s help_text and verbose_name are lost when overriding the widget

This has nothing to do with django-autocomplete-light, but still it’s a FAQ so here goes.

When Django’s ModelForm creates a form field for a model field, it copies models.Field.verbose_name to forms.Field.label and models.Field.help_text to forms.Field.help_text, as uses models.Field.blank to create forms.Field.required.
For example:

```python
class Person(models.Model):
    name = models.CharField(
        max_length=100,
        blank=True,
        verbose_name='Person name',
        help_text='Please fill in the complete person name'
    )

class PersonForm(forms.ModelForm):
    class Meta:
        model = Person

Thanks to Django’s DRY system, this is equivalent to:

```python
class PersonForm(forms.ModelForm):
    name = forms.CharField(
        max_length=100,
        required=False,
        label='Person name',
        help_text='Please fill in the complete person name'
    )

class Meta:
    model = Person
```

But you will lose that logic as soon as you decide to override Django’s generated form field with your own. So if you do this:

```python
class PersonForm(forms.ModelForm):
    name = forms.CharField(widget=YourWidget)

class Meta:
    model = Person
```

Then you lose Django’s DRY system, because you instantiate the name form field, so Django leaves it as is.

If you want to override the widget of a form field and you don’t want to override the form field, then you should refer to Django’s documentation on overriding the default fields which means you should use `Meta.widgets`, i.e.:

```python
class PersonForm(forms.ModelForm):
    class Meta:
        model = Person
        widgets = {'name': YourWidget}
```

Again, this has nothing to do with django-autocomplete-light.

### 10.4 Fields bound on values which are not in the queryset anymore raise a `ValidationError`

This is not specific to django-autocomplete-light, but still it’s a FAQ so here goes.

Django specifies in its unit tests that a `ModelChoiceField` and `ModelMultipleChoiceField` should raise a `ValidationError` if a value is not part of the queryset passed to the field constructor.

This is the relevant part of Django’s specification:
## Delete a Category object *after* the ModelChoiceField has already been instantiated. This proves clean() checks the database during clean() rather than caching it at time of instantiation.

```python
Category.objects.get(url='5th').delete()
with self.assertRaises(ValidationError):
    f.clean(c5.id)
```

# [...]  

```python
Category.objects.get(url='6th').delete()
with self.assertRaises(ValidationError):
    f.clean([c6.id])
```

django-autocomplete-light behaves exactly the same way. If an item is removed from the queryset, then its value will be dropped from the field values on display of the form. Trying to save that value again will raise a ValidationError will be raised, just like if the item wasn’t there at all.

But don’t take my word for it, try the security_test app of the test_project, it provides:

- an admin to control which items are in and out of the queryset,
- an update view with a django select
- another update view with an autocomplete instead

### 10.5 How to override a JS method?

Refer to [Override autocomplete JS methods](#).

### 10.6 How to work around Django bug #9321: *Hold down “Control”...?

Just use the autocomplete_light.ModelForm or inherit from both SelectMultipleHelpTextRemovalMixin and django.forms.ModelForm.

### 10.7 How to report a bug effectively?

Read [How to Report Bugs Effectively](#) and open an issue on django-autocomplete-light’s issue tracker on GitHub.

### 10.8 How to ask for help?

The best way to ask for help is:

- fork the repo,
- add a simple way to reproduce your problem in a new app of test_project, try to keep it minimal,
- open an issue on github and mention your fork.
Really, it takes quite some time for me to clean pasted code and put up an example app it would be really cool if you could help me with that!

If you don’t want to do the fork and the reproduce case, then you should better ask on StackOverflow and you might be lucky (just tag your question with django-autocomplete-light to ensure that I find it).
API: find hidden gems

11.1 Registry API

class autocomplete_light.registry.AutocompleteRegistry (autocomplete_model_base=None)

AutocompleteRegistry is a dict of AutocompleteName: AutocompleteClass with some shortcuts to handle a registry of autocompletes.

    autocomplete_model_base

    The default model autocomplete class to use when registering a Model without Autocomplete class. Default is AutocompleteModelBase. You can override it just before calling autodiscover() in urls.py as such:

        import autocomplete_light
        autocomplete_light.registry.autocomplete_model_base = autocomplete_light.AutocompleteModelTemplate
        autocomplete_light.autodiscover()

You can pass a custom base autocomplete which will be set to autocomplete_model_base when instantiating an AutocompleteRegistry.

    autocomplete_for_generic()

    Return the default generic autocomplete.

    autocomplete_for_model (model)

    Return the default autocomplete class for a given model or None.

    classmethod extract_args (*args)

    Takes any arguments like a model and an autocomplete, or just one of those, in any order, and return a model and autocomplete.

    register (*args, **kwargs)

    Register an autocomplete.

    Two unordered arguments are accepted, at least one should be passed:

        *a model if not a generic autocomplete,

        *an autocomplete class if necessary, else one will be generated.

    ‘name’ is also an acceptable keyword argument, that can be used to override the default autocomplete name which is the class name by default, which could cause name conflicts in some rare cases.

    In addition, keyword arguments will be set as class attributes.

    For thread safety reasons, a copy of the autocomplete class is stored in the registry.
unregister(name)
Unregister a autocomplete given a name.

autocomplete_light.registry.register(*args, **kwargs)
Proxy method AutocompleteRegistry.register() of the registry module level instance.

autocomplete_light.registry.autodiscover()
Check all apps in INSTALLED_APPS for stuff related to autocomplete_light.

For each app, autodiscover imports app.autocomplete_light_registry if possing, resulting in execution of register() statements in that module, filling up registry.

Consider a standard app called cities_light with such a structure:

cities_light/
   __init__.py
   models.py
   urls.py
   views.py
   autocomplete_light_registry.py

Where autocomplete_light_registry.py contains something like:

    from models import City, Country
    import autocomplete_light
    autocomplete_light.register(City)
    autocomplete_light.register(Country)

When autodiscover() imports cities_light.autocomplete_light_registry, both CityAutocomplete and CountryAutocomplete will be registered. See AutocompleteRegistry.register() for details on how these autocomplete classes are generated.

11.2 Autocomplete class API

11.2.1 AutocompleteInterface
class autocomplete_light.autocomplete.base.AutocompleteInterface(request=None, values=None)

An autocomplete proposes “choices”. A choice has a “value”. When the user selects a “choice”, then it is converted to a “value”.

AutocompleteInterface is the minimum to implement in a custom Autocomplete class usable by the widget and the view. It has two attributes:

values
A list of values which validate_values() and choices_for_values() should use.

request
A request object which autocomplete_html() should use.

It is recommended that you inherit from AutocompleteBase instead when making your own classes because it has taken some design decisions favorising a DRY implementation of AutocompleteInterface.

Instanciate an Autocomplete with a given request and values arguments. values will be casted to list if necessary and both will be assigned to instance attributes request and values respectively.
**autocomplete_html**

Return the HTML autocomplete that should be displayed under the text input. `request` can be used, if set.

**choices_for_values**

Return the list of choices corresponding to `values`.

**get_absolute_url**

Return the absolute url for this autocomplete, using autocomplete_light_autocomplete url.

**validate_values**

Return True if `values` are all valid.

### 11.2.2 Rendering logic Autocomplete mixins

**AutocompleteBase**

```python
class autocomplete_light.autocomplete.base.AutocompleteBase(request=None, values=None):

A basic implementation of AutocompleteInterface that renders HTML and should fit most cases. It only needs overload of choices_for_request() and choices_for_values() which is the business-logic.
```

**choice_html_format**

HTML string used to format a python choice in HTML by `choice_html()`. It is formated with two positionnal parameters: the value and the html representation, respectively generated by `choice_value()` and `choice_label()`. Default is:

```html
<span data-value="%s">%s</span>
```

**empty_html_format**

HTML string used to format the message “no matches found” if no choices match the current request. It takes a parameter for the translated message. Default is:

```html
<span class="block"><em>%s</em></span>
```

**autocomplete_html_format**

HTML string used to format the list of HTML choices. It takes a positionnal parameter which contains the list of HTML choices which come from `choice_html()`. Default is:

```html
%s
```

**add_another_url_name**

Name of the url to add another choice via a javascript popup. If empty then no “add another” link will appear.

**add_another_url_kwargs**

Keyword arguments to use when reversing the add another url.

**widget_template**

A special attribute used only by the widget. If it is set, the widget will use that instead of the default autocomplete_light/widget.html.

**autocomplete_html**

Simple rendering of the autocomplete.

It will append the result of `choice_html()` for each choice returned by `choices_for_request()`, and wrap that in `autocomplete_html_format`.

**choice_html**(choice)

Format a choice using `choice_html_format`. 

---

11.2. Autocomplete class API

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**choice_label** *(choice)*

Return the human-readable representation of a choice. This simple implementation returns the textual representation.

**choice_value** *(choice)*

Return the value of a choice. This simple implementation returns the textual representation.

**choices_for_request**

Return the list of choices that are available. Uses request if set, this method is used by `autocomplete_html()`.

**get_add_another_url**

Return the url to use when adding another element

**validate_values**

This basic implementation returns True if all values are in `choices_for_values()`.

### AutocompleteTemplate

```python
class autocomplete_light.autocomplete.template.AutocompleteTemplate(request=None, values=None)
```

This extension of `AutocompleteBase` supports two new attributes:

**choice_template**

Name of the template to use to render a choice in the autocomplete. If none is specified, then `AutocompleteBase` will render the choice.

**autocomplete_template**

Name of the template to use to render the autocomplete. Again, fall back on `AutocompleteBase` if this is None.

**autocomplete_html**

Render `autocomplete_template` with base context and {{ choices }}. If `autocomplete_template` is None then fall back on `base.AutocompleteBase.autocomplete_html()`.

**choice_html** *(choice)*

Render `choice_template` with base context and {{ choice }}. If `choice_template` is None then fall back on `base.AutocompleteBase.choice_html()`.

**get_base_context**

Return a dict to use as base context for all templates.

It contains:

- {{ request }} if available,
- {{ autocomplete }} the “self” instance.

**render_template_context** *(template, extra_context=None)*

Render `template` with base context and `extra_context`.

### 11.2.3 Business logic Autocomplete mixins

### AutocompleteList

```python
class autocomplete_light.autocomplete.list.AutocompleteList
```

Simple Autocomplete implementation which expects `choices` to be a list of string choices.
choices
    List of string choices.

limit_choices
    The maximum of items to suggest from choices.

order_by
    order_choices() will use this against choices as an argument sorted().

It was mainly used as a starter for me when doing test-driven development and to ensure that the Autocomplete pattern would be concretely simple and yet powerful.

choices_for_request()
    Return any choices that contains the search string. It is case insensitive and ignores spaces.

choices_for_values()
    Return any choices that is in values.

order_choices(choices)
    Run sorted() against choices and order_by.

AutocompleteChoiceList

class autocomplete_light.autocomplete.choice_list.AutocompleteChoiceList
    Simple AutocompleteList implementation which expects choices to be a list of tuple choices in the fashion of django.db.models.Field.choices.

    choices
        List of choice tuples (value, label) like django.db.models.Field.choices. Example:

        choices = {
            ('v', 'Video'),
            ('p', 'Paper'),
        }

    limit_choices
        The maximum of items to suggest from choices.

    order_by
        order_choices() will use this against choices as an argument sorted().

    choice_label(choice)
        Return item 1 of the choice tuple.

    choice_value(choice)
        Return item 0 of the choice tuple.

    choices_for_request()
        Return any choices tuple that contains the search string. It is case insensitive and ignores spaces.

    choices_for_values()
        Return any choices that is in values.

AutocompleteModel

class autocomplete_light.autocomplete.model.AutocompleteModel
    Autocomplete which considers choices as a queryset.

    choices
        A queryset.
 limit_choices
   Maximum number of choices to display.

 search_fields
   Fields to search in, configurable like on django.contrib.admin.ModelAdmin.search_fields

 split_words
   If True, AutocompleteModel splits the search query into words and returns all objects that contain each of the words, case insensitive, where each word must be in at least one of search_fields. This mimics the mechanism of django's django.contrib.admin.ModelAdmin.search_fields.

   If 'or', AutocompleteModel does the same but returns all objects that contain any of the words.

 order_by
   If set, it will be used to order choices. It can be a single field name or an iterable (ie. list, tuple).

 choice_label (choice)
   Return the textual representation of the choice by default.

 choice_value (choice)
   Return the pk of the choice by default.

 choices_for_request()
   Return a queryset based on choices using options split_words, search_fields and limit_choices.

 choices_for_values()
   Return ordered choices which pk are in values.

 order_choices (choices)
   Order choices using order_by option if it is set.

 validate_values()
   Return True if all values where found in choices.

 AutocompleteGeneric

class autocomplete_light.autocomplete.generic.AutocompleteGeneric
   AutocompleteModel extension which considers choices as a list of querysets, and composes a choice value with both the content type pk and the actual model pk.

 choices
   A list of querysets. Example:

   choices = {
     User.objects.all(),
     Group.objects.all(),
   }

 search_fields
   A list of lists of fields to search in, configurable like on ModelAdmin.search_fields. The first list of fields will be used for the first queryset in choices and so on. Example:

   search_fields = {
     ('email', '^name''),  # Used for User.objects.all()
     ('name',)            # User for Group.objects.all()
   }

 AutocompleteGeneric inherits from model.AutocompleteModel and supports limit_choices and split_words exactly like AutocompleteModel.
However, `order_by` is not supported (yet) in AutocompleteGeneric.

- **choice_value** *(choice)*
  Rely on `GenericModelChoiceField` to return a string containing the content type id and object id of the result.

- **choices_for_request** *
  Return a list of choices from every queryset in `choices`.

- **choices_for_values** *
  Values which are not found in any querysets of `choices` are ignored.

- **validate_values** *
  Ensure that every choice is part of a queryset in `choices`.

### 11.2.4 Autocomplete classes with both rendering and business logic

- **class** `autocomplete_light.autocomplete.AutocompleteChoiceListBase` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteBase` for rendering logic and `AutocompleteChoiceList` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteChoiceListTemplate` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteTemplate` for rendering logic and `AutocompleteChoiceList` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteGenericBase` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteBase` for rendering logic and `AutocompleteGeneric` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteGenericTemplate` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteTemplate` for rendering logic and `AutocompleteGeneric` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteListBase` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteBase` for rendering logic and `AutocompleteList` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteListTemplate` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteTemplate` for rendering logic and `AutocompleteList` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteModelBase` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteBase` for rendering logic and `AutocompleteModel` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteModelTemplate` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteTemplate` for rendering logic and `AutocompleteModel` for business logic.

  It also sets a default `choice_template`.

  ```
  choice_template = 'autocomplete_light/model_template/choice.html'
  ```

- **class** `autocomplete_light.autocomplete.AutocompleteRestModelBase` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteBase` for rendering logic and `AutocompleteRestModel` for business logic.

- **class** `autocomplete_light.autocomplete.AutocompleteRestModelTemplate` *(request=*, `None`, `values=*, `None`)*

  Use `AutocompleteTemplate` for rendering logic and `AutocompleteRestModel` for business logic.
11.2.5 Views

class autocomplete_light.views.AutocompleteView(**kwargs)
    Simple view that routes the request to the appropriate autocomplete.

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

def get(request, *args, **kwargs)
    Return an HttpResponse with the return value of autocomplete.autocomplete_html().

    This view is called by the autocomplete script, it is expected to return the rendered autocomplete box contents.

    To do so, it gets the autocomplete class from the registry, given the url keyword argument autocomplete, that should be the autocomplete name.

    Then, it instantiates the autocomplete with no argument as usual, and calls autocomplete.init_for_request, passing all arguments it received.

    Finally, it makes an HttpResponse with the result of autocomplete.autocomplete_html(). The javascript will use that to fill the autocomplete suggestion box.

def post(request, *args, **kwargs)
    Just proxy autocomplete.post().

    This is the key to communication between the autocomplete and the widget in javascript. You can use it to create results and such.

class autocomplete_light.views.CreateView(**kwargs)
    Simple wrapper for generic.CreateView, that responds to _popup.

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

    def form_valid(form)
        If request.GET._popup, return some javascript.

11.3 Form, fields and widgets API

11.3.1 Widgets

WidgetBase

class autocomplete_light.widgets.WidgetBase(autocomplete=None,
    widget_get_js_attributes=None,
    autocomplete_js_attributes=None,
    extra_context=None,
    registry=None,
    widget_template=None,
    widget_attrs=None)

Base widget for autocompletes.

    attrs
        HTML <input / > attributes, such as class, placeholder, etc ... Note that any data-autocomplete-* attribute will be parsed as an option for yourlabs.Autocomplete.js object. For example:

        attrs={‘placeholder’: ‘foo’, ‘data-autocomplete-minimum-characters’: 0 ‘class’: ‘bar’,

        }

        Will render like::


Which will set by the way yourlabs.Autocomplete.minimumCharacters option - the naming conversion is handled by jQuery.

**widget.attrs**

HTML widget container attributes. Note that any data-widget-* attribute will be parsed as an option for yourlabs.Widget.js object. For example:

```python
code=

dict=
    'data-widget-maximum-values': 6,
    'class': 'country-autocomplete',
}

Will render like:

```html
    id="country-wrapper"
    data-widget-maximum-values="6"
    class="country-autocomplete autcomplete-light-widget"

Which will set by the way yourlabs.Widget.maximumValues - note that the naming conversion is handled by jQuery.

**widget_js_attributes**

DEPRECATED in favor of :py:attr::widget_attrs.

A dict of options that will override the default widget options. For example:

```python

code=

dict = {'max_values': 8}
```

The above code will set this HTML attribute:

```html
    data-max-values="8"
```

Which will override the default javascript widget maxValues option (which is 0).

It is important to understand naming conventions which are sparse unfortunately:

- python: lower case with underscores ie. max_values,
- HTML attributes: lower case with dashes ie. data-max-values,
- javascript: camel case, ie. maxValues.

The python to HTML name conversion is done by the autocomplete_light_data_attributes template filter.

The HTML to javascript name conversion is done by the jquery plugin.

**autocomplete_js_attributes**

DEPRECATED in favor of :py:attr::attrs.

A dict of options like for widget_js_attributes. However, note that HTML attributes will be prefixed by data-autocomplete- instead of just data-. This allows the jQuery plugins to make the distinction between attributes for the autocomplete instance and attributes for the widget instance.

extra_context
Extra context dict to pass to the template.

**widget_template**

Template to use to render the widget. Default is autocomplete_light/widget.html.
ChoiceWidget

class autocomplete_light.widgets.ChoiceWidget (autocomplete=None, 
    widget_js_attributes=None, 
    autocomplete_js_attributes=None, 
    extra_context=None, registry=None, widget_template=None, 
    widget_attrs=None, 
    *args, **kwargs)

Widget that provides an autocomplete for zero to one choice.

MultipleChoiceWidget

class autocomplete_light.widgets.MultipleChoiceWidget (autocomplete=None, 
    widget_js_attributes=None, 
    autocomplete_js_attributes=None, 
    extra_context=None, registry=None, 
    widget_template=None, widget_attrs=None, 
    *args, **kwargs)

Widget that provides an autocomplete for zero to n choices.

TextWidget

class autocomplete_light.widgets.TextWidget (autocomplete=None, 
    widget_js_attributes=None, 
    autocomplete_js_attributes=None, 
    extra_context=None, registry=None, 
    widget_template=None, widget_attrs=None, 
    *args, **kwargs)

Widget that just adds an autocomplete to fill a text input.

Note that it only renders an <input>, so attrs and widget_attrs are merged together.

render (name, value, attrs=None)
Proxy Django’s TextInput.render()

11.3.2 Fields

FieldBase

class autocomplete_light.fields.FieldBase (autocomplete=None, registry=None, 
    widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, 
    extra_context=None, *args, **kwargs)

ChoiceField

class autocomplete_light.fields.ChoiceField (autocomplete=None, registry=None, 
    widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, 
    extra_context=None, *args, **kwargs)
**MultipleChoiceField**

```python
class autocomplete_light.fields.MultipleChoiceField (autocomplete=None, registry=None, widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, extra_context=None, *args, **kwargs)
```

**ModelChoiceField**

```python
class autocomplete_light.fields.ModelChoiceField (autocomplete=None, registry=None, widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, extra_context=None, *args, **kwargs)
```

**ModelMultipleChoiceField**

```python
class autocomplete_light.fields.ModelMultipleChoiceField (autocomplete=None, registry=None, widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, extra_context=None, *args, **kwargs)
```

**GenericModelChoiceField**

```python
class autocomplete_light.fields.GenericModelChoiceField (autocomplete=None, registry=None, widget=None, widget_js_attributes=None, autocomplete_js_attributes=None, extra_context=None, *args, **kwargs)
```

Simple form field that converts strings to models.

**prepare_value** *(value)*

Given a model instance as value, with content type id of 3 and pk of 5, return such a string ‘3-5’.
to_python(value)
Given a string like ‘3-5’, return the model of content type id 3 and pk 5.

widget
alias of ChoiceWidget

GenericModelMultipleChoiceField

class autocomplete_light.fields.GenericModelMultipleChoiceField (autocomplete=None,
registry=None,
widget=None,
widget_js_attributes=None,
autocomplete_js_attributes=None,
extra_context=None,
*args, **kwargs)

Simple form field that converts strings to models.

widget
alias of MultipleChoiceWidget

11.3.3 Form stuff

High-level API for django-autocomplete-light.

Before, django-autocomplete-light was just a container for a loosely coupled set of tools. You had to go for a treasure
hunt in the docs and source to find just what you need and add it to your project.

While you can still do that, this module adds a high-level API which couples all the little pieces together. Basically
you could just inherit from ModelForm or use modelform_factory() and expect everything to work out of the box,
from simple autocompletes to generic many to many autocompletes including a bug fix for django bug #9321 or even
added security.

modelform_factory

autocomplete_light.forms.modelform_factory (model, autocomplete_fields=None,
autocomplete_exclude=None,
autocomplete_names=None, registry=None,
**kwargs)

Wrap around Django’s django_modelform_factory, using our ModelForm and setting autocomplete_fields and
autocomplete_exclude.

ModelForm

class autocomplete_light.forms.ModelForm(*args, **kwargs)
ModelForm override using our metaclass that adds our various mixins.

autocomplete_fields
A list field names on which you want automatic autocomplete fields.

autocomplete_exclude
A list of field names on which you do not want automatic autocomplete fields.
autocomplete_names
A dict of field_name: AutocompleteName to override the default autocomplete that would be used for a field.

Note: all of autocomplete_fields, autocomplete_exclude and autocomplete_names understand generic foreign key and generic many to many descriptor names.

ModelFormMetaclass

class autocomplete_light.forms.ModelFormMetaclass
Wrap around django’s ModelFormMeta class to add autocompletes.

SelectMultipleHelpTextRemovalMixin

class autocomplete_light.forms.SelectMultipleHelpTextRemovalMixin (*args, **kwargs)
This mixin that removes the ‘Hold down “Control” ...’ message that is enforced in select multiple fields.
See https://code.djangoproject.com/ticket/9321

VirtualFieldHandlingMixin

class autocomplete_light.forms.VirtualFieldHandlingMixin (*args, **kwargs)
Enable virtual field (generic foreign key) handling in django’s ModelForm.

•treat virtual fields like GenericForeignKey as normal fields,
•when setting a GenericForeignKey value, also set the object id and content type id fields.

Probably, django doesn’t do that for legacy reasons: virtual fields were added after ModelForm and simply nobody asked django to add virtual field support in ModelForm.

The constructor adds virtual field values to django.forms.Form.initial

GenericM2MRelatedObjectDescriptorHandlingMixin

class autocomplete_light.forms.GenericM2MRelatedObjectDescriptorHandlingMixin (*args, **kwargs)
Extension of autocomplete_light.GenericModelForm, that handles genericm2m’s RelatedObjectsDescriptor.
Add related objects to initial for each generic m2m field.

generic_m2m_fields ()
Yield name, field for each RelatedObjectsDescriptor of the model of this ModelForm.

save (commit=True)
Save the form and particularly the generic many to many relations.

FormfieldCallback

class autocomplete_light.forms.FormfieldCallback (default=None, meta=None)
Decorate model_field.formfield() to use a autocomplete_light.ModelChoiceField for OneToOneField and ForeignKey or a autocomplete_light.ModelMultipleChoiceField for a ManyToManyField.

It is the very purpose of our ModelFormMetaclass!
ModelFormMetaclass

class autocomplete_light.forms.ModelFormMetaClass
    Wrap around django’s ModelFormMetaClass to add autocompletes.

11.4 Script API

11.4.1 autocomplete.js

The autocomplete box script, see autocomplete.js API documentation.

11.4.2 widget.js

The script that ties the autocomplete box script and the hidden `<select>` used by django, see widget.js API documentation.

11.4.3 text_widget.js

The script that ties the autocomplete box script with a text input, see text_widget.js API documentation.

11.4.4 addanother.js

The script that enables adding options to a `<select>` outside the admin, see addanother.js API documentation.

11.4.5 remote.js

The script that overrides a method from widget.js to create choices on the fly, see remote.js API documentation.
12.1 CharField autocompletes

django-tagging and derivates like django-tagging-ng provide a TagField, which is a CharField expecting comma separated tags. Behind the scenes, this field is parsed and Tag model instances are created and/or linked.

A stripped variant of widget.js, text_widget.js, enables autocompletion for such a field. To make it even easier, a stripped variant of Widget, TextWidget, automates configuration of text_widget.js.

Needless to say, TextWidget and text_widget.js have a structure that is consistent with Widget and widget.js.

It doesn’t have many features for now, but feel free to participate to the project on GitHub.

As usual, a working example lives in test_project in app charfield_autocomplete.

**Warning:** Note that this feature was added in version 1.0.16, if you have overloaded autocomplete_light/static.html from a previous version then you should make it load autocomplete_light/text_widget.js to get this new feature.

12.1.1 Example

This demonstrates a working usage of TextWidget:

```python
from django import forms
import autocomplete_light
from models import Taggable

class TaggableForm(forms.ModelForm):
    class Meta:
        model = Taggable
        widgets = {
            'tags': autocomplete_light.TextWidget('TagAutocomplete'),
        }
```

FTR, using the form in the admin is still as easy:
from django.contrib import admin
from forms import TaggableForm
from models import Taggable

class TaggableInline(admin.TabularInline):
    form = TaggableForm
    model = Taggable

class TaggableAdmin(admin.ModelAdmin):
    form = TaggableForm
    list_display = ['name', 'tags']
    inlines = [TaggableInline]

admin.site.register(Taggable, TaggableAdmin)

So is registering an Autocomplete for Tag:

from tagging.models import Tag
import autocomplete_light

autocomplete_light.register(Tag)

12.1.2 Django-tagging

This demonstrates the models setup used for the above example, using django-taggit, which provides a normal CharField behaviour:

from django.db import models
from tagging.fields import TagField
import tagging

class Taggable(models.Model):
    name = models.CharField(max_length=50)
    tags = TagField(null=True, blank=True)
    parent = models.ForeignKey('self', null=True, blank=True)

    def __unicode__(self):
        return self.name

tagging.register(Taggable, tag_descriptor_attr='etags')

12.1.3 Django-taggit

For django-taggit, you need autocomplete_light.contrib.taggit_tagfield.
12.2 Add another popup outside the admin

This documentation drives through the example app `non_admin_add_another` which lives in `test_project`. Implementing this feature is utterly simple and can be done in two steps:

- make your create view to return some script if called with `_popup=1`,
- add `add_another_url_name` attribute to your Autocomplete.

**Warning:** Note that this feature was added in version 1.0.21, if you have overloaded `autocomplete_light/static.html` from a previous version then you should make it load `autocomplete_light/addanother.js` to get this new feature.

12.2.1 Specifications

Consider such a model:

```python
from __future__ import unicode_literals
from django.db import models
from django.core import urlresolvers
from django.utils.encoding import python_2_unicode_compatible

@python_2_unicode_compatible
class NonAdminAddAnotherModel(models.Model):
    name = models.CharField(max_length=100)
    widgets = models.ManyToManyField('self', blank=True)

    def get_absolute_url(self):
        return urlresolvers.reverse('non_admin_add_another_model_update', args=(self.pk,))

    def __str__(self):
        return self.name
```

And we want to have add/update views outside the admin, with autocompletes for relations as well as a `+/add-another` button just like in the admin.

Technical details come from a blog post written by me a couple years ago, Howto: javascript popup form returning value for select like Django admin for foreign keys.

12.2.2 Create view

A create view opened via the add-another button should return such a body:

```html
<script type="text/javascript">
opener.dismissAddAnotherPopup(
    window,
    "name of created model",
    "id of created model"
);</script>
```
Note that you could also use `autocomplete_light.CreateView` which simply wraps around `django.views.generic.edit.CreateView.form_valid()` to do that. Example usage:

```python
from django.conf.urls import patterns, url
from django.views import generic
import autocomplete_light

from .forms import NonAdminAddAnotherModelForm
from .models import NonAdminAddAnotherModel

urlpatterns = patterns('',
    url(r'^$', autocomplete_light.CreateView.as_view(
        model=NonAdminAddAnotherModel, form_class=NonAdminAddAnotherModelForm),
        name='non_admin_add_another_model_create'),
    url(r'(?P<pk>\d+)/$', generic.UpdateView.as_view(
        model=NonAdminAddAnotherModel, form_class=NonAdminAddAnotherModelForm),
        name='non_admin_add_another_model_update'),
)
```

**Note:** It is not mandatory to use url namespaces.

### 12.2.3 Autocompletes

Simply register an Autocomplete for widget, with an `add_another_url_name` argument, for example:

```python
import autocomplete_light

from .models import NonAdminAddAnotherModel

autocomplete_light.register(NonAdminAddAnotherModel,
    add_another_url_name='non_admin_add_another_model_create')
```

### 12.3 Proposing results from a remote API

This documentation is optional, but it is complementary with all other documentation. It aims advanced users.

Consider a social network about music. In order to propose all songs in the world in its autocomplete, it should either:

- have a database with all songs of the world,
- use a simple REST API to query a database with all songs world

The purpose of this documentation is to describe every elements involved. Note that a living demonstration is available in `test_remote_project`, where one project serves a full database of cities via an API to another.

#### 12.3.1 Example

In `test_remote_project/remote_autocomplete`, of course you should not hardcode urls like that in actual projects:
from cities_light.contrib.autocompletes import *

import autocomplete_light

autocomplete_light.register(Country, CountryRestAutocomplete,
    source_url='http://localhost:8000/cities_light/country/')

autocomplete_light.register(Region, RegionRestAutocomplete,
    source_url='http://localhost:8000/cities_light/region/')

autocomplete_light.register(City, CityRestAutocomplete,
    source_url='http://localhost:8000/cities_light/city/)

Check out the documentation of RemoteCountryChannel and RemoteCityChannel for more.

12.3.2 API

class autocomplete_light.autocomplete.rest_model.AutocompleteRestModel

    download(url)
        Given an url to a remote object, return the corresponding model from the local database.
        
The default implementation expects url to respond with a JSON dict of the attributes of an object.
        
        For relation attributes, it expect the value to be another url that will respond with a JSON dict of the attributes of the related object.
        
        It calls model_for_source_url() to find which model class corresponds to which url. This allows download() to be recursive.

    download_choice(choice)
        Take a choice’s dict representation, return it’s local pk which might have been just created.
        
        If your channel works with 0 to 1 API call, consider overriding this method. If your channel is susceptible of using several different API calls, consider overriding download().

    get_remote_choices(max)
        Parses JSON from the API, return model instances.
        
The JSON should contain a list of dicts. Each dict should contain the attributes of an object. Relation attributes should be represented by their url in the API, which is set to model._source_url.

    get_source_url(limit)
        Return an API url for the current autocomplete request.
        
        By default, return self.source_url with the data dict returned by get_source_url_data().

    get_source_url_data(limit)
        Given a limit of items, return a dict of data to send to the API.
        
        By default, it passes current request GET arguments, along with format: ‘json’ and the limit.

    model_for_source_url(url)
        Take an URL from the API this remote channel is supposed to work with, return the model class to use for that url.
        
        It is only needed for the default implementation of download(), because it has to follow relations recursively.
By default, it will return the model of self.choices.

12.3.3 Javascript fun

Channels with `bootstrap='remote'` get a deck using `RemoteChannelDeck`'s `getValue()` rather than the default `getValue()` function.

```javascript
if (window.yourlabs == undefined) window.yourlabs = {};

yourlabs.RemoteAutocompleteWidget = {
  /*
   * The default deck getValue() implementation just returns the PK from the
   * choice HTML. RemoteAutocompleteWidget.getValue’s implementation checks for
   * a url too. If a url is found, it will post to that url and expect the pk to
   * be in the response.
   *
   * This is how autocomplete-light supports proposing values that are not there
   * in the database until user selection.
   *
   * getValue: function(choice) {
   *   var value = choice.data('value');
   *   if (typeof(value)=='string' && isNaN(value) && value.match(/https?:/)) {
   *     $.ajax(this.autocompleteOptions.url, {
   *       async: false,
   *       type: 'post',
   *       data: {
   *         'value': value
   *       },
   *       success: function(text, jqXHR, textStatus) {
   *         value = text;
   *       }
   *     });
   *     choice.data('value', value);
   *   }
   *   return value;
   * }
   */

$(document).bind('yourlabsWidgetReady', function() {
  // Instanciate decks with RemoteAutocompleteWidget as override for all widgets with
  // autocomplete 'remote'.
  $('body').on('initialize', '.autocomplete-light-widget[data-bootstrap=rest_model]', function() {
    $(this).yourlabsWidget(yourlabs.RemoteAutocompleteWidget);
  });
});
```

12.4 Django 1.3 support workarounds

The app is was developed for Django 1.4. However, there are workarounds to get it to work with Django 1.3 too. This document attempts to provide an exhaustive list of notes that should be taken in account when using the app with django-autocomplete-light.
12.4.1 *modelform_factory*

The provided autocomplete_light.modelform_factory relies on Django 1.4’s modelform_factory that accepts a ‘widgets’ dict.

Django 1.3 does not allow such an argument. You may however define your form as such:

```python
class AuthorForm(forms.ModelForm):
    class Meta:
        model = Author
        widgets = autocomplete_light.get_widgets_dict(Author)
```

12.5 Support for *django-generic-m2m*

See [GenericManyToMany documentation](#).

12.6 Support for *django-hvad*

This is how to enable `language()` for one Autocomplete:

```python
import autocomplete_light
from autocomplete_light.contrib.hvad import AutocompleteModelBase

autocomplete_light.register(YourModel, AutocompleteModelBase)
```

Or, enable it globally by updating your `autodiscover()` call like this:

```python
import autocomplete_light
from autocomplete_light.contrib.hvad import AutocompleteModelBase

autocomplete_light.registry.autocomplete_model_base = AutocompleteModelBase

autocomplete_light.autodiscover()
```

In that case, you can just register as usual:

```python
autocomplete_light.register(YourTranslatableModel)
```

```python
class autocomplete_light.contrib.hvad.AutocompleteModel(request=None, values=None)
    Ensure that .language() is called.
    Overridden init to call .language(). Note: this will replace the base choices.

class autocomplete_light.contrib.hvad.AutocompleteModelBase(request=None, values=None)
    Drop-in replacement for AutocompleteModelBase
    Overridden init to call .language(). Note: this will replace the base choices.

class autocomplete_light.contrib.hvad.AutocompleteModelTemplate(request=None, values=None)
    Drop-in replacement for AutocompleteModelTemplate
    Overridden init to call .language(). Note: this will replace the base choices.
```
12.7 Support for django-taggit

django-taggit does it slightly differently. It is supported by autocomplete_light as of 1.0.25, using the autocomplete_light.contrib.taggit_tagfield module.
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