django-tables2

Release 1.11.0

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Getting started

Its features include:

- Any iterable can be a data-source, but special support for Django querysets is included.
- The builtin UI does not rely on JavaScript.
- Support for automatic table generation based on a Django model.
- Supports custom column functionality via subclassing.
- Pagination.
- Column based table sorting.
- Template tag to enable trivial rendering to HTML.
- Generic view mixin.

About the app:

- Available on pypi
- Tested with python 2.7, 3.3, 3.4, 3.5 and Django 1.8, 1.9, Travis CI
- Documentation on readthedocs.org
- Bug tracker

CHAPTER 1

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1.1 Installation

Django-tables2 is Available on pypi and can be installed using pip:

```
pip install django-tables2
```

After installing, add `'django_tables2'` to `INSTALLED_APPS` and make sure that `'django.template.context_processors.request'` is added to the `context_processors` in your template setting `OPTIONS`.

1.2 Tutorial

This is a step-by-step guide to learn how to install and use django-tables2.

1. `pip install django-tables2`
2. Add `'django_tables2'` to `INSTALLED_APPS`
3. Add `'django.template.context_processors.request'` to the `context_processors` in your template setting `OPTIONS`.

We are going to run through creating a tutorial app. Let's start with a simple model:

```
# tutorial/models.py
class Person(models.Model):
    name = models.CharField(verbose_name="full name")
```

Add some data so you have something to display in the table. Now write a view to pass a `Person` queryset into a template:

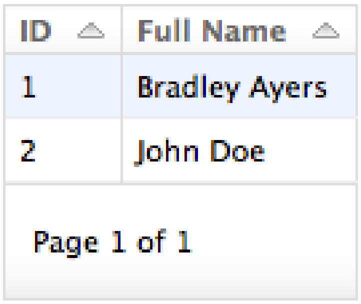
```
# tutorial/views.py
from django.shortcuts import render
```

```
def people(request):
    return render(request, 'people.html', {'people': Person.objects.all()})
```

Finally, implement the template:

```
{# tutorial/templates/people.html #}
{% load render_table from django_tables2 %}
{% load static %}
<!doctype html>
<html>
    <head>
        <link rel="stylesheet" href="{% static 'django_tables2/themes/paleblue/css/
↪screen.css' %}" />
    </head>
    <body>
        {% render_table people %}
    </body>
</html>
```

Hook the view up in your URLs, and load the page, you should see:



ID	Full Name
1	Bradley Ayers
2	John Doe

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While simple, passing a queryset directly to `{% render_table %}` doesn't allow for any customisation. For that, you must define a custom *Table* class:

```
# tutorial/tables.py
import django_tables2 as tables
from .models import Person

class PersonTable(tables.Table):
    class Meta:
        model = Person
        # add class="paleblue" to <table> tag
        attrs = {'class': 'paleblue'}
```

You'll then need to instantiate and configure the table in the view, before adding it to the context:

```
# tutorial/views.py
from django.shortcuts import render
from django_tables2 import RequestConfig
from .models import Person
from .tables import PersonTable

def people(request):
    table = PersonTable(Person.objects.all())
    RequestConfig(request).configure(table)
    return render(request, 'people.html', {'table': table})
```

Using *RequestConfig* automatically pulls values from `request.GET` and updates the table accordingly. This enables data ordering and pagination.

Rather than passing a queryset to `{% render_table %}`, instead pass the table instance:

```
{% render_table table %}
```

At this point you haven't actually customised anything, you've merely added the boilerplate code that `{% render_table %}` does for you when given a `QuerySet`. The remaining sections in this document describe how to change various aspects of the table.

TODO: insert links to various customisation options here.

1.3 Populating a table with data

Tables can be created from a range of input data structures. If you've seen the tutorial you'll have seen a queryset being used, however any iterable that supports `len()` and contains items that expose key-based access to column values is fine.

1.3.1 List of dicts

An an example we will demonstrate using list of dicts. When defining a table it is necessary to declare each column:

```
import django_tables2 as tables

data = [
    {'name': 'Bradley'},
    {'name': 'Stevie'},
]

class NameTable(tables.Table):
    name = tables.Column()

table = NameTable(data)
```

1.3.2 Querysets

If you build use tables to display `QuerySet` data, rather than defining each column manually in the table, the `Table.Meta.model` option allows tables to be dynamically created based on a model:

```
# models.py
class Person(models.Model):
    first_name = models.CharField(max_length=200)
    last_name = models.CharField(max_length=200)
    user = models.ForeignKey('auth.User')
    dob = models.DateField()

# tables.py
import django_tables2 as tables

class PersonTable(tables.Table):
    class Meta:
        model = Person
```

```
# views.py
def person_list(request):
    table = PersonTable(Person.objects.all())

    return render(request, 'person_list.html', {
        'table': table
    })
```

This has a number of benefits:

- Less repetition
- Column headers are defined using the field's `verbose_name`
- Specialized columns are used where possible (e.g. *`DateColumn`* for a `DateField`)

When using this approach, the following options might be useful to customize what fields to show or hide:

- `sequence` – reorder columns
- `fields` – specify model fields to *include*
- `exclude` – specify model fields to *exclude*

1.3.3 Performance

Django-tables tries to be efficient in displaying big datasets. It tries to avoid converting the `QuerySet` instances to lists by using SQL to slice the data and should be able to handle datasets with 100k records without a problem.

However, when using one of the customisation methods described in this documentation, there is lot's of oppurtunity to introduce slowness. If you experience that, try to strip the table of customisations and re-add them one by one, checking for performance after each step.

1.4 Alternative column data

Various options are available for changing the way the table is *rendered*. Each approach has a different balance of ease-of-use and flexibility.

1.4.1 Using `Accessors`

Each column has a 'key' that describes which value to pull from each record to populate the column's cells. By default, this key is just the name given to the column, but it can be changed to allow foreign key traversal or other complex cases.

To reduce ambiguity, rather than calling it a 'key', we use the name 'accessor'.

Accessors are just dotted paths that describe how an object should be traversed to reach a specific value, for example:

```
>>> from django_tables2 import A
>>> data = {'abc': {'one': {'two': 'three'}}}
>>> A('abc.one.two').resolve(data)
'three'
```

Dots represent a relationships, and are attempted in this order:

1. Dictionary lookup `a[b]`

2. Attribute lookup `a.b`
3. List index lookup `a[int(b)]`

If the resulting value is callable, it is called and the return value is used.

1.4.2 `Table.render_foo` methods

To change how a column is rendered, define a `render_foo` method on the table for example: `render_row_number()` for a column named `row_number`. This approach is suitable if you have a one-off change that you do not want to use in multiple tables.

Supported keyword arguments include:

- `record` – the entire record for the row from the *table data*
- `value` – the value for the cell retrieved from the *table data*
- `column` – the *`Column`* object
- `bound_column` – the *`BoundColumn`* object
- `bound_row` – the *`BoundRow`* object
- `table` – alias for `self`

This example shows how to render the row number in the first row:

```
>>> import django_tables2 as tables
>>> import itertools
>>> class SimpleTable(tables.Table):
...     row_number = tables.Column(empty_values=())
...     id = tables.Column()
...     age = tables.Column()
...
...     def __init__(self, *args, **kwargs):
...         super(SimpleTable, self).__init__(*args, **kwargs)
...         self.counter = itertools.count()
...
...     def render_row_number(self):
...         return 'Row %d' % next(self.counter)
...
...     def render_id(self, value):
...         return '<%s>' % value
...
>>> table = SimpleTable([{'age': 31, 'id': 10}, {'age': 34, 'id': 11}])
>>> print ', '.join(map(str, table.rows[0]))
Row 0, <10>, 31
```

Python's `inspect.getargspec` is used to only pass the arguments declared by the function. This means it's not necessary to add a catch all (`**`) keyword argument.

Important: `render` methods are *only* called if the value for a cell is determined to be not an *empty value*. When a value is in `Column.empty_values`, a default value is rendered instead (both *`Column.render`* and `Table.render_FOO` are skipped).

1.4.3 `Table.value_foo` methods

If you want to use `Table.as_values` to export your data, you might want to define a method `value_foo`, which is analogous to `render_foo`, but used to render the values rather than the HTML output.

Please refer to `Table.as_values` for an example.

1.4.4 Subclassing `Column`

Defining a column subclass allows functionality to be reused across tables. Columns have a `render` method that behaves the same as *Table.render_foo methods* methods on tables:

```
>>> import django_tables2 as tables
>>>
>>> class UpperColumn(tables.Column):
...     def render(self, value):
...         return value.upper()
...
>>> class Example(tables.Table):
...     normal = tables.Column()
...     upper = UpperColumn()
...
>>> data = [{'normal': 'Hi there!',
...          'upper':  'Hi there!'}]
...
>>> table = Example(data)
>>> # renders to something like this:
'''<table>
    <thead><tr><th>Normal</th><th>Upper</th></tr></thead>
    <tbody><tr><td>Hi there!</td><td>HI THERE!</td></tr></tbody>
</table>'''
```

See *Table.render_foo methods* for a list of arguments that can be accepted.

For complicated columns, you may want to return HTML from the `render()` method. Make sure to use Django's html formatting functions:

```
>>> from django.utils.html import format_html
>>>
>>> class ImageColumn(tables.Column):
...     def render(self, value):
...         return format_html('<img src="/media/img/{}.jpg" />', value)
...
```

1.5 Alternative column ordering

When using queryset data, one might want to show a computed value which is not in the database. In this case, attempting to order the column will cause an exception:

```
# models.py
class Person(models.Model):
    first_name = models.CharField(max_length=200)
    family_name = models.CharField(max_length=200)

    @property
    def name(self):
        return '{} {}'.format(self.first_name, self.family_name)

# tables.py
class PersonTable(tables.Table):
    name = tables.Column()
```

```
>>> table = PersonTable(Person.objects.all())
>>> table.order_by = 'name'
>>>
>>> # will result in:
FieldError: Cannot resolve keyword 'name' into field. Choices are: first_name, family_
↪name
```

To prevent this, django-tables2 allows two ways to specify custom ordering: accessors and `order_FOO()` methods.

1.5.1 Ordering by accessors

You can supply an `order_by` argument containing a name or a tuple of the names of the columns the database should use to sort it:

```
class PersonTable(tables.Table):
    name = tables.Column(order_by=('first_name', 'family_name'))
```

Accessor syntax can be used as well, as long as they point to a model field.

If ordering does not make sense for a particular column, it can be disabled via the `orderable` argument:

```
class SimpleTable(tables.Table):
    name = tables.Column()
    actions = tables.Column(orderable=False)
```

1.5.2 `table.order_FOO()` methods

Another solution for alternative ordering is being able to chain functions on to the original queryset. This method allows more complex functionality giving the ability to use all of Django's QuerySet API.

Adding a `Table.order_FOO` method (where `FOO` is the name of the column), gives you the ability to chain to, or modify, the original queryset when that column is selected to be ordered.

The method takes two arguments: `queryset`, and `is_descending`. The return must be a tuple of two elements. The first being the queryset and the second being a boolean; note that modified queryset will only be used if the boolean is `True`.

For example, let's say instead of ordering alphabetically, ordering by amount of characters in the first_name is desired. The implementation would look like this:

```
# tables.py
from django.db.models.functions import Length

class PersonTable(tables.Table):
    name = tables.Column()

    def order_name(self, queryset, is_descending):
        queryset = queryset.annotate(
            length=Length('first_name')
        ).order_by(('-' if is_descending else '') + 'length')
        return (queryset, True)
```

As another example, presume the situation calls for being able to order by a mathematical expression. In this scenario, the table needs to be able to be ordered by the sum of both the shirts and the pants. The custom column will have its value rendered using *Table.render_foo methods*.

This can be achieved like this:

```
# models.py
class Person(models.Model):
    first_name = models.CharField(max_length=200)
    family_name = models.CharField(max_length=200)
    shirts = models.IntegerField()
    pants = models.IntegerField()


# tables.py
from django.db.models import F

class PersonTable(tables.Table):
    clothing = tables.Column()

    class Meta:
        model = Person

    def render_clothing(self, record):
        return str(record.shirts + record.pants)

    def order_clothing(self, queryset, is_descending):
        queryset = queryset.annotate(
            amount=F('shirts') + F('pants')
        ).order_by(('-' if is_descending else '') + 'amount')
        return (queryset, True)
```

1.5.3 Using `Column.order()` on custom columns

If you created a custom column, which also requires custom ordering like explained above, you can add the body of your `order_foo` method to the order method on your custom column, to allow easier reuse.

For example, the `PersonTable` from above could also be defined like this:

```
class ClothingColumn(tables.Column):
    def render(self, record):
        return str(record.shirts + record.pants)

    def order(self, queryset, is_descending):
        queryset = queryset.annotate(
            amount=F('shirts') + F('pants')
        ).order_by(('-' if is_descending else '') + 'amount')
        return (queryset, True)


class PersonTable(tables.Table):
    clothing = ClothingColumn()
    class Meta:
        model = Person
```

1.6 Column and row attributes

1.6.1 Column attributes

Column attributes can be specified using the `dict` with specific keys. The dict defines HTML attributes for one of more elements within the column. Depending on the column, different elements are supported, however `th`, `td`, and `cell` are supported universally:

```
>>> import django_tables2 as tables
>>>
>>> class SimpleTable(tables.Table):
...     name = tables.Column(attrs={'th': {'id': 'foo'}})
...
>>> # will render something like this:
'{snip}<thead><tr><th id="foo" class="name">{snip}<tbody><tr><td class="name">{snip}'
```

For `th` and `td`, the column name will be added as a class name. This makes selecting the row for styling easier. Have a look at each column's API reference to find which elements are supported.

1.6.2 Row attributes

Row attributes can be specified using a dict defining the HTML attributes for the `<tr>` element on each row. The values of the dict may be

By default, class names *odd* and *even* are supplied to the rows, wich can be customized using the `row_attrs` *`Table.Meta`* attribute or as argument to the constructor of *`Table`*, for example:

```
class Table(tables.Table):
    class Meta:
        model = User
        row_attrs = {
            'data-id': lambda record: record.pk
        }
```

will render tables with the following `<tr>` tag

```
<tr class="odd" data-id="1"> [...] </tr>
<tr class="even" data-id="2"> [...] </tr>
```

1.7 Customizing headers and footers

By default an header and no footer will be rendered.

1.7.1 Adding column headers

The header cell for each column comes from `header`. By default this method returns `verbose_name`, falling back to the titlised attribute name of the column in the table class.

When using queryset data and a verbose name hasn't been explicitly defined for a column, the corresponding model field's `verbose_name` will be used.

Consider the following:

```
>>> class Region(models.Model):
...     name = models.CharField(max_length=200)
...
>>> class Person(models.Model):
...     first_name = models.CharField(verbose_name='model verbose name', max_
↪length=200)
...     last_name = models.CharField(max_length=200)
...     region = models.ForeignKey('Region')
...
>>> class PersonTable(tables.Table):
...     first_name = tables.Column()
...     ln = tables.Column(accessor='last_name')
...     region_name = tables.Column(accessor='region.name')
...
>>> table = PersonTable(Person.objects.all())
>>> table.columns['first_name'].header
'Model Verbose Name'
>>> table.columns['ln'].header
'Last Name'
>>> table.columns['region_name'].header
'Name'
```

As you can see in the last example (region name), the results are not always desirable when an accessor is used to cross relationships. To get around this be careful to define `Column.verbose_name`.

Changing class names for ordered column headers

When a column is ordered in an ascending state there needs to be a way to show it in the interface. django-tables2 does this by adding an `asc` class for ascending or a `desc` class for descending. It should also be known that any orderable column is added with an `orderable` class to the column header.

Sometimes there may be a need to change these default classes.

On the `attrs` attribute of the table, you can add a `th` key with the value of a dictionary. Within that `th` dictionary, you may add an `_ordering` key also with the value of a dictionary.

The `_ordering` element is optional and all elements within it are optional. Inside you can have an `orderable` element, which will change the default `orderable` class name. You can also have `ascending` which will will change the default `asc` class name. And lastly, you can have `descending` which will change the default `desc` class name.

Example:

```
class Table(tables.Table):
    Meta:
        attrs = {
            'th' : {
                '_ordering': {
                    'orderable': 'sortable', # Instead of `orderable`
                    'ascending': 'ascend',   # Instead of `asc`
                    'descending': 'descend'  # Instead of `desc`
                }
            }
        }
```

It can also be specified at initialization using the `attrs` for both: table and column:

```
ATTRIBUTES = {
    'th' : {
        '_ordering': {
            'orderable': 'sortable', # Instead of `orderable`
            'ascending': 'ascend',   # Instead of `asc`
            'descending': 'descend'  # Instead of `desc`
        }
    }
}

table = tables.Table(queryset, attrs=ATTRIBUTES)

# OR

class Table(tables.Table):
    my_column = tables.Column(attrs=ATTRIBUTES)
```

1.7.2 Adding column footers

By default, no footer will be rendered. If you want to add a footer, define a footer on at least one column.

That will make the table render a footer on every view of the table. It's up to you to decide if that makes sense if your table is paginated.

Pass `footer`-argument to the `Column` constructor.

The simplest case is just passing a `str` as the footer argument to a column:

```
country = tables.Column(footer='Total:')
```

This will just render the string in the footer. If you need to do more complex things, like showing a sum or an average, you can pass a callable:

```
population = tables.Column(
    footer=lambda table: sum(x['population'] for x in table.data)
)
```

You can expect `table`, `column` and `bound_column` as argument.

Define `render_footer` on a custom column.

If you need the same footer in multiple columns, you can create your own custom column. For example this column that renders the sum of the values in the column:

```
class SummingColumn(tables.Column):
    def render_footer(self, bound_column, table):
        return sum(bound_column.accessor.resolve(row) for row in table.data)
```

Then use this column like so:

```
class Table(tables.Table):
    name = tables.Column()
    country = tables.Column(footer='Total:')
    population = SummingColumn()
```

Note: If you are summing over tables with big datasets, chances are it's going to be slow. You should use some database aggregation function instead.

1.8 Swapping the position of columns

By default columns are positioned in the same order as they are declared, however when mixing auto-generated columns (via `Table.Meta.model`) with manually declared columns, the column sequence becomes ambiguous.

To resolve the ambiguity, columns sequence can be declared via the `Table.Meta.sequence` option:

```
class PersonTable(tables.Table):
    selection = tables.CheckBoxColumn(accessor='pk', orderable=False)

    class Meta:
        model = Person
        sequence = ('selection', 'first_name', 'last_name')
```

The special value `'...'` can be used to indicate that any omitted columns should inserted at that location. As such it can be used at most once.

1.9 Pagination

Pagination is easy, just call *`Table.paginate()`* and pass in the current page number:

```
def people_listing(request):
    table = PeopleTable(Person.objects.all())
    table.paginate(page=request.GET.get('page', 1), per_page=25)
    return render(request, 'people_listing.html', {'table': table})
```

If you're using *`RequestConfig`*, pass pagination options to the constructor:

```
def people_listing(request):
    table = PeopleTable(Person.objects.all())
    RequestConfig(request, paginate={'per_page': 25}).configure(table)
    return render(request, 'people_listing.html', {'table': table})
```

1.10 Table Mixins

It's possible to create a mixin for a table that overrides something, however unless it itself is a subclass of *`Table`* class variable instances of *`Column`* will **not** be added to the class which is using the mixin.

Example:

```
>>> class UselessMixin(object):
...     extra = tables.Column()
...
>>> class TestTable(UselessMixin, tables.Table):
...     name = tables.Column()
...
>>> TestTable.base_columns.keys()
['name']
```

To have a mixin contribute a column, it needs to be a subclass of `Table`. With this in mind the previous example *should* have been written as follows:

```
>>> class UsefulMixin(tables.Table):
...     extra = tables.Column()
...
>>> class TestTable(UsefulMixin, tables.Table):
...     name = tables.Column()
...
>>> TestTable.base_columns.keys()
['extra', 'name']
```

1.11 Customizing table style

1.11.1 CSS

In order to use CSS to style a table, you'll probably want to add a `class` or `id` attribute to the `<table>` element. django-tables2 has a hook that allows arbitrary attributes to be added to the `<table>` tag.

```
>>> import django_tables2 as tables
>>>
>>> class SimpleTable(tables.Table):
...     id = tables.Column()
...     age = tables.Column()
...
...     class Meta:
...         attrs = {'class': 'mytable'}
...
>>> table = SimpleTable()
>>> # renders to something like this:
'<table class="mytable">...'
```

1.11.2 Custom Template

And of course if you want full control over the way the table is rendered, ignore the built-in generation tools, and instead pass an instance of your `Table` subclass into your own template, and render it yourself.

Have a look at the `django_tables2/table.html` template for an example.

You can set `DJANGO_TABLES2_TEMPLATE` in your django settings to change the default template django-tables2 looks for.

1.12 Querystring fields

Tables pass data via the querystring to indicate ordering and pagination preferences.

The names of the querystring variables are configurable via the options:

- `order_by_field` – default: `'sort'`
- `page_field` – default: `'page'`
- `per_page_field` – default: `'per_page'`, **note:** this field currently isn't used by `{% render_table %}`

Each of these can be specified in three places:

- `Table.Meta.foo`
- `Table(..., foo=...)`
- `Table(...).foo = ...`

If you're using multiple tables on a single page, you'll want to prefix these fields with a table-specific name, in order to prevent links on one table interfere with those on another table:

```
def people_listing(request):
    config = RequestConfig(request)
    table1 = PeopleTable(Person.objects.all(), prefix='1-')  # prefix specified
    table2 = PeopleTable(Person.objects.all(), prefix='2-')  # prefix specified
    config.configure(table1)
    config.configure(table2)

    return render(request, 'people_listing.html', {
        'table1': table1,
        'table2': table2
    })
```

1.13 Controlling localization

Django-tables2 allows you to define which column of a table should or should not be localized. For example you may want to use this feature in following use cases:

- You want to format some columns representing for example numeric values in the given locales even if you don't enable `USE_L10N` in your settings file.
- You don't want to format primary key values in your table even if you enabled `USE_L10N` in your settings file.

This control is done by using two filter functions in Django's `l10n` library named `localize` and `unlocalize`. Check out Django docs about `localization` for more information about them.

There are two ways of controlling localization in your columns.

First one is setting the `localize` attribute in your column definition to `True` or `False`. Like so:

```
class PersonTable(tables.Table):
   id = tables.Column(name='id', accessor='pk', localize=False)
   class Meta:
       model = Person
```

Note: The default value of the `localize` attribute is `None` which means the formatting of columns is dependant from the `USE_L10N` setting.

The second way is to define a `localize` and/or `unlocalize` tuples in your tables Meta class (jutst like with `fields` or `exclude`). You can do this like so:

```
class PersonTable(tables.Table):
   id = tables.Column(accessor='pk')
   value = tables.Column(accessor='some_numerical_field')
   class Meta:
       model = Person
       unlocalize = ('id', )
       localize = ('value', )
```

If you define the same column in both `localize` and `unlocalize` then the value of this column will be 'unlocalized' which means that `unlocalize` has higher precedence.

1.14 Class Based Generic Mixins

Django-tables2 comes with two class based view mixins: *`SingleTableMixin`* and *`MultiTableMixin`*.

1.14.1 A single table using `SingleTableMixin`

`SingleTableMixin` makes it trivial to incorporate a table into a view or template.

The following view parameters are supported:

- `table_class` –- the table class to use, e.g. `SimpleTable`
- `table_data` (or `get_table_data()`) – the data used to populate the table
- `context_table_name` – the name of template variable containing the table object
- `table_pagination` (or `get_table_pagination`) – pagination options to pass to *`RequestConfig`*. Set `table_pagination=False` to disable pagination.
- **`get_table_kwargs()` allows the keyword arguments passed to the `Table`** constructor.

For example:

```
from django_tables2 import SingleTableView


class Person(models.Model):
    first_name = models.CharField(max_length=200)
    last_name = models.CharField(max_length=200)


class PersonTable(tables.Table):
    class Meta:
        model = Person


class PersonList(SingleTableView):
    model = Person
    table_class = PersonTable
```

The template could then be as simple as:

```
{% load render_table from django_tables2 %}
{% render_table table %}
```

Such little code is possible due to the example above taking advantage of default values and *SingleTableMixin*'s eagerness at finding data sources when one isn't explicitly defined.

Note: You don't have to base your view on `ListView`, you're able to mix `SingleTableMixin` directly.

1.14.2 Multiple tables using `MultiTableMixin`

If you need more than one table in a single view you can use `MultiTableMixin`. It manages multiple tables for you and takes care of adding the appropriate prefixes for them. Just define a list of tables in the tables attribute:

```
from django_tables2 import MultiTableMixin
from django.views.generic.base import TemplateView

class PersonTablesView(MultiTableMixin, TemplateView):
    template_name = 'multiTable.html'
    tables = [
        PersonTable(qs),
        PersonTable(qs, exclude=('country', ))
    ]

    table_pagination = {
        'per_page': 10
    }
```

In the template, you get a variable `tables`, which you can loop over like this:

```
{% for table in tables %}
    {% render_table table %}
{% endfor %}
```

1.15 Pinned rows

By using Pinned Rows, you can pin particular rows to the top or bottom of your table. To add pinned rows to your table, you must override `get_top_pinned_data` and/or `get_bottom_pinned_data` methods in your *Table* class.

- `get_top_pinned_data(self)` - Display the pinned rows on top.
- `get_bottom_pinned_data(self)` - Display the pinned rows on bottom.

By default both methods return `None` value and pinned rows aren't visible. Return data for pinned rows should be iterable type like: queryset, list of dicts, list of objects.

Example:

```python
class Table(tables.Table):

    def get_top_pinned_data(self):
        return [
            # First top pinned row
            {
                'column_a' : 'value for A column',
                'column_b' : 'value for B column'
            },
            # Second top pinned row
            {
                'column_a' : 'extra value for A column'
                'column_b' : None
            }
        ]

    def get_top_pinned_data(self):
        return [{
            'column_c' : 'value for C column',
            'column_d' : 'value for D column'
        }]
```

Note: Sorting and pagination for pinned rows not working.

Value for cell in pinned row will be shown only when **key** in object has the same name as column. You can decide which columns for pinned rows will visible or not. If you want show value for only one column, use only one column name as key. Non existing keys won't be shown in pinned rows.

Warning: Pinned rows not exist in `table.rows`. If table has some pinned rows and one normal row then length of `table.rows` is 1.

1.15.1 Attributes for pinned rows

If you want to override HTML attributes for pinned rows you should use: `pinned_row_attrs`. Pinned row attributes can be specified using a `dict` defining the HTML attributes for the `<tr>` element on each row. See more: *Row attributes*.

Note: By default pinned rows have `pinned-row` css class.

```
<tr class="odd pinned-row" ...> [...] </tr>
<tr class="even pinned-row" ...> [...] </tr>
```

1.16 Filtering data in your table

When presenting a large amount of data, filtering is often a necessity. Fortunately, filtering the data in your django-tables2 table is simple with django-filter.

The basis of a filtered table is a `SingleTableView` combined with a `FilterView` from django-filter:

```
from django_filters.views import FilterView


class FilteredPersonListView(FilterView, SingleTableView):
    table_class = PersonTable
    model = Person
    template_name = 'template.html'

    filterset_class = PersonFilter
```

1.17 Exporting table data

New in version 1.8.0.

If you want to allow exporting the data present in your django-tables2 tables to various formats, you must install the tablib package:

```
pip install tablib
```

Adding ability to export the table data to a class based views looks like this:

```
import django_tables2 as tables
from django_tables2.export.views import ExportMixin

from .models import Person
from .tables import MyTable

class TableView(ExportMixin, tables.SingleTableView):
    table_class = MyTable
    model = Person
    template_name = 'django_tables2/bootstrap.html'
```

Now, if you append `_export=csv` to the querystring, the browser will download a csv file containing your data. Supported export formats are:

> csv, json, latex, ods, tsv, xls, xlsx, yml

To customize the name of the query parameter add an `export_trigger_param` attribute to your class.

By default, the file will be named `table.ext`, where `ext` is the requested export format extension. To customize this name, add a `export_name` attribute to your class. The correct extension will be appended automatically to this value.

If you must use a function view, you might use something like this:

```
from django_tables2.config import RequestConfig
from django_tables2.export.export import TableExport

from .models import Person
from .tables import MyTable

def table_view(request):
    table = MyTable(Person.objects.all())

    RequestConfig(request).configure(table)

    export_format = request.GET.get('_export', None)
    if TableExport.is_valid_format(export_format):
        exporter = TableExport(export_format, table)
        return exporter.response('table.{}'.format(export_format))

    return render(request, 'table.html', {
        'table': table
    })
```

1.17.1 What exacly is exported?

The export views use the `Table.as_values()` method to get the data from the table. Because we often use HTML in our table cells, we need to specify something else for the export to make sense.

If you use *Table.render_foo methods*-methods to customize the output for a column, you should define a *Table.value_foo methods*-method, returning the value you want to be exported.

If you are creating your own custom columns, you should know that each column defines a `value()` method, which is used in `Table.as_values()`. By default, it just calls the `render()` method on that column. If your custom column produces HTML, you should override this method and return the actual value.

1.17.2 Excluding columns

Certain columns do not make sense while exporting data: you might show images or have a column with buttons you want to exclude from the export. You can define the columns you want to exclude in several ways:

```
# exclude a column while defining Columns on a table:
class Table(tables.Table):
    name = columns.Column()
    buttons = columns.TemplateColumn(template_name='...', exclude_from_export=True)


# exclude columns while creating the TableExport instance:
exporter = TableExport('csv', table, exclude_columns=('image', 'buttons'))
```

If you use the `~.ExportMixin`, add an `exclude_columns` attribute to your class:

```
class TableView(ExportMixin, tables.SingleTableView):
    table_class = MyTable
    model = Person
    template_name = 'django_tables2/bootstrap.html'
    exclude_column = ('buttons', )
```

1.17.3 Generating export urls

You can use the `querystring` template tag included with django_tables2 to render a link to export the data as `csv`:

```
{% querystring '_export'='csv' %}
```

This will make sure any other query string parameters will be preserved, for example in combination when filtering table items.

If you want to render more than one button, you could use something like this:

```
{% for format in table.export_formats %}
    <a href="{% querystring '_export'=format %}">
        download  <code>.{{ format }}</code>
    </a>
{% endfor %}
```

Note: This example assumes you define a list of possible export formats on your table instance in attribute `export_formats`

1.18 API

1.18.1 Built-in columns

For common use-cases the following columns are included:

- *`BooleanColumn`* – renders boolean values
- *`Column`* – generic column
- *`CheckBoxColumn`* – renders checkbox form inputs
- *`DateColumn`* – date formatting
- *`DateTimeColumn`* – datetime formatting in the local timezone
- *`EmailColumn`* – renders `<a href="mailto:...">` tags
- *`FileColumn`* – renders files as links
- *`JSONColumn`* – renders JSON as an indented string in `<pre></pre>`
- *`LinkColumn`* – renders `<a href="...">` tags (compose a django url)
- *`ManyToManyColumn`* – renders a list objects from a `ManyToManyField`
- *`RelatedLinkColumn`* – renders `<a href="...">` tags linking related objects
- *`TemplateColumn`* – renders template code
- *`URLColumn`* – renders `<a href="...">` tags (absolute url)

1.18.2 Template tags

render_table

Renders a *`Table`* object to HTML and enables as many features in the output as possible.

```
{% load django_tables2 %}
{% render_table table %}

{# Alternatively a specific template can be used #}
{% render_table table "path/to/custom_table_template.html" %}
```

If the second argument (template path) is given, the template will be rendered with a `RequestContext` and the table will be in the variable `table`.

Note: This tag temporarily modifies the *Table* object during rendering. A `context` attribute is added to the table, providing columns with access to the current context for their own rendering (e.g. *TemplateColumn*).

This tag requires that the template in which it's rendered contains the `HttpRequest` inside a `request` variable. This can be achieved by ensuring the `TEMPLATES[]['OPTIONS']['context_processors']` setting contains `django.template.context_processors.request`. Please refer to the Django documentation for the TEMPLATES-setting.

querystring

A utility that allows you to update a portion of the query-string without overwriting the entire thing.

Let's assume we have the querystring `?search=pirates&sort=name&page=5` and we want to update the `sort` parameter:

```
{% querystring "sort"="dob" %}           # ?search=pirates&sort=dob&page=5
{% querystring "sort"="" %}              # ?search=pirates&page=5
{% querystring "sort"="" "search"="" %}  # ?page=5

{% with "search" as key %}               # supports variables as keys
{% querystring key="robots" %}           # ?search=robots&page=5
{% endwith %}
```

This tag requires the `django.template.context_processors.request` context processor, see *render_table*.

1.18.3 API Reference

`Accessor` (`A`)

class `django_tables2.utils.`**`Accessor`**

A string describing a path from one object to another via attribute/index accesses. For convenience, the class has an alias `A` to allow for more concise code.

Relations are separated by a `.` character.

`RequestConfig`

class `django_tables2.config.`**`RequestConfig`**(*request*, *paginate=True*)

A configurator that uses request data to setup a table.

A single RequestConfig can be used for multiple tables in one view.

Parameters **`paginate`** (*`dict or bool`*) – Indicates whether to paginate, and if so, what default values to use. If the value evaluates to `False`, pagination will be disabled. A `dict` can be used to specify default values for the call to *`paginate`* (e.g. to define a default `per_page` value).

A special *silent* item can be used to enable automatic handling of pagination exceptions using the following logic:

- If `PageNotAnInteger` is raised, show the first page.
- If `EmptyPage` is raised, show the last page.

Table

class `django_tables2.tables.`**`Table`**(*data*, *order_by=None*, *orderable=None*, *empty_text=None*, *exclude=None*, *attrs=None*, *row_attrs=None*, *pinned_row_attrs=None*, *sequence=None*, *prefix=None*, *order_by_field=None*, *page_field=None*, *per_page_field=None*, *template=None*, *default=None*, *request=None*, *show_header=None*, *show_footer=True*, *extra_columns=None*)

A representation of a table.

Parameters

- **`data`** (*`queryset, list of dicts`*) – The data to display.
- **`order_by`** – (tuple or str): The default ordering tuple or comma separated str. A hyphen `-` can be used to prefix a column name to indicate *descending* order, for example: `('name', '-age')` or `name,-age`.
- **`orderable`** (*`bool`*) – Enable/disable column ordering on this table
- **`empty_text`** (*`str`*) – Empty text to render when the table has no data. (default `Table.Meta.empty_text`)
- **`exclude`** (*`iterable or str`*) – The names of columns that shouldn't be included in the table.
- **`attrs`** (*`dict`*) – HTML attributes to add to the `<table>` tag. When accessing the attribute, the value is always returned as an `AttributeDict` to allow easily conversion to HTML.
- **`row_attrs`** – Add custom html attributes to the table rows. Allows custom HTML attributes to be specified which will be added to the `<tr>` tag of the rendered table.
- **`pinned_row_attrs`** – Same as row_attrs but for pinned rows.
- **`sequence`** (*`iterable`*) – The sequence/order of columns the columns (from left to right).

  Items in the sequence must be *column names*, or `'...'` (string containing three periods). `'...'` can be used as a catch-all for columns that aren't specified.
- **`prefix`** (*`str`*) – A prefix for querystring fields. To avoid name-clashes when using multiple tables on single page.
- **`order_by_field`** (*`str`*) – If not `None`, defines the name of the *order by* querystring field in the url.
- **`page_field`** (*`str`*) – If not `None`, defines the name of the *current page* querystring field.
- **`per_page_field`** (*`str`*) – If not `None`, defines the name of the *per page* querystring field.
- **`template`** (*`str`*) – The template to render when using `{% render_table %}` (default `'django_tables2/table.html'`)
- **`default`** (*`str`*) – Text to render in empty cells (determined by `Column.empty_values`, default `Table.Meta.default`)
- **`request`** – Django's request to avoid using `RequestConfig`
- **`show_header`** (*`bool`*) – If `False`, the table will not have a header (`<thead>`), defaults to `True`

- **show_footer** (*bool*) – If False, the table footer will not be rendered, even if some columns have a footer, defaults to True.
- **extra_columns** (str, *Column*) – list of (name, column)-tuples containing extra columns to add to the instance.

as_html (*request*)
Render the table to an HTML table, adding request to the context.

as_values (*exclude_columns=None*)
Return a row iterator of the data which would be shown in the table where the first row is the table headers.

Parameters exclude_columns (*iterable*) – columns to exclude in the data iterator.

This can be used to output the table data as CSV, excel, for example using the *ExportMixin*.

If a column is defined using a *Table.render_foo methods*, the returned value from that method is used. If you want to differentiate between the rendered cell and a value, use a value_Foo-method:

```
class Table(tables.Table):
    name = tables.Column()

    def render_name(self, value):
        return format_html('<span class="name">{}</span>', value)

    def value_name(self, value):
        return value
```

will have a value wrapped in <span> in the rendered HTML, and just returns the value when as_values() is called.

before_render (*request*)
A way to hook into the moment just before rendering the template.

Can be used to hide a column.

Parameters request – contains the WGSIRequest instance, containing a user attribute if django.contrib.auth.middleware.AuthenticationMiddleware is added to your MIDDLEWARE_CLASSES.

Example:

```
class Table(tables.Table):
    name = tables.Column(orderable=False)
    country = tables.Column(orderable=False)

    def before_render(self, request):
        if request.user.has_perm('foo.delete_bar'):
            self.columns.hide('country')
        else:
            self.columns.show('country')
```

get_bottom_pinned_data ()
Return data for bottom pinned rows containing data for each row. Iterable type like: queryset, list of dicts, list of objects. Having a non-zero number of pinned rows will not result in an empty resultset message being rendered, even if there are no regular data rows

Returns None (default) no pinned rows at the bottom, iterable, data for pinned rows at the bottom.

Note: To show pinned row this method should be overridden.

Example

```
>>> class TableWithBottomPinnedRows(Table):
...     def get_bottom_pinned_data(self):
...         return [{
...             'column_a' : 'some value',
...             'column_c' : 'other value',
...         }]
```

get_column_class_names(*classes_set*, *bound_column*)

Returns a set of HTML class names for cells (both td and th) of a **bound column** in this table. By default this returns the column class names defined in the table's attributes, and additionally the bound column's name. This method can be overridden to change the default behavior, for example to simply `return classes_set`.

Parameters

- **classes_set** (*set of string*) – a set of class names to be added to the cell, retrieved from the column's attributes. In the case of a header cell (th), this also includes ordering classes. To set the classes for a column, see `Column`. To configure ordering classes, see *Changing class names for ordered column headers*
- **bound_column** (*BoundColumn*) – the bound column the class names are determined for. Useful for accessing `bound_column.name`.

Returns A set of class names to be added to cells of this column

get_column_class_names(*classes_set*, *bound_column*)

Returns a set of HTML class names for cells (both td and th) of a **bound column** in this table. By default this returns the column class names defined in the table's attributes, and additionally the bound column's name. This method can be overridden to change the default behavior, for example to simply `return classes_set`.

Parameters

- **classes_set** (*set of string*) – a set of class names to be added to the cell, retrieved from the column's attributes. In the case of a header cell (th), this also includes ordering classes. To set the classes for a column, see `Column`. To configure ordering classes, see *Changing class names for ordered column headers*
- **bound_column** (*BoundColumn*) – the bound column the class names are determined for. Useful for accessing `bound_column.name`.

Returns A set of class names to be added to cells of this column

get_top_pinned_data()

Return data for top pinned rows containing data for each row. Iterable type like: queryset, list of dicts, list of objects. Having a non-zero number of pinned rows will not result in an empty resultset message being rendered, even if there are no regular data rows

Returns `None` (default) no pinned rows at the top, iterable, data for pinned rows at the top.

Note: To show pinned row this method should be overridden.

Example

```
>>> class TableWithTopPinnedRows(Table):
...     def get_top_pinned_data(self):
...         return [{
...             'column_a' : 'some value',
...             'column_c' : 'other value',
...         }]
```

paginate(*klass=<class 'django.core.paginator.Paginator'>*, *per_page=None*, *page=1*, **args*, ***kwargs*)

Paginates the table using a paginator and creates a `page` property containing information for the current page.

Parameters

- **klass** (`Paginator`) – A paginator class to paginate the results.
- **per_page** (*int*) – Number of records to display on each page.
- **page** (*int*) – Page to display.

Extra arguments are passed to the paginator.

Pagination exceptions (`EmptyPage` and `PageNotAnInteger`) may be raised from this method and should be handled by the caller.

Table.Meta

class `Table`.**Meta**

Provides a way to define *global* settings for table, as opposed to defining them for each instance.

For example, if you want to create a table of users with their primary key added as a `data-id` attribute on each `<tr>`, You can use the following:

```
class UsersTable(tables.Table):
    class Meta:
        row_attrs = {'data-id': lambda record: record.pk}
```

Which adds the desired `row_attrs` to every instance of `UsersTable`, in contrast of defining it at construction time:

```
table = tables.Table(User.objects.all(),
                     row_attrs={'data-id': lambda record: record.pk})
```

Some settings are only available in *Table.Meta* and not as an argument to the *Table* constructor.

Note: If you define a `class Meta` on a child of a table already having a `class Meta` defined, you need to specify the parent's `Meta` class as the parent for the `class Meta in the child`:

```
class PersonTable(table.Table):
    class Meta:
        model = Person
        exclude = ('email', )

class PersonWithEmailTable(PersonTable):
    class Meta(PersonTable.Meta):
        exclude = ()
```

All attributes are overwritten if defined in the child's `class Meta`, no merging is attempted.

Arguments:

attrs (`dict`): Add custom HTML attributes to the table. Allows custom HTML attributes to be specified which will be added to the `<table>` tag of any table rendered via *`Table.as_html()`* or the *render_table* template tag.

This is typically used to enable a theme for a table (which is done by adding a CSS class to the `<table>` element):

```
class SimpleTable(tables.Table):
    name = tables.Column()

    class Meta:
        attrs = {'class': 'paleblue'}
```

If you supply a a callable as a value in the dict, it will be called at table instatiation an de returned value will be used:

Consider this example where each table gets an unieque `"id"` attribute:

```
import itertools
counter = itertools.count()

class UniqueIdTable(tables.Table):
    name = tables.Column()

    class Meta:
        attrs = {'id': lambda: 'table_%d' % next(counter)}
```

Note: This functionality is also available via the `attrs` keyword argument to a table's constructor.

row_attrs (`dict`): Add custom html attributes to the table rows. Allows custom HTML attributes to be specified which will be added to the `<tr>` tag of the rendered table.

This can be used to add each record's primary key to each row:

```
class PersonTable(tables.Table):
    class Meta:
        model = Person
        row_attrs = {'data-id': lambda record: record.pk}

# will result in
'<tr data-id="1">...</tr>'
```

New in version 1.2.0.

Note: This functionality is also available via the `row_attrs` keyword argument to a table's constructor.

empty_text (str): Defines the text to display when the table has no rows. If the table is empty and `bool(empty_text)` is `True`, a row is displayed containing `empty_text`. This is allows a message such as *There are currently no FOO.* to be displayed.

Note: This functionality is also available via the `empty_text` keyword argument to a table's constructor.

show_header (bool): Wether or not to show the table header. Defines whether the table header should be displayed or not, by default, the header shows the column names.

Note: This functionality is also available via the `show_header` keyword argument to a table's constructor.

exclude (typle or str): Exclude columns from the table. This is useful in subclasses to exclude columns in a parent:

```
>>> class Person(tables.Table):
...     first_name = tables.Column()
...     last_name = tables.Column()
...
>>> Person.base_columns
{'first_name': <django_tables2.columns.Column object at 0x10046df10>,
'last_name': <django_tables2.columns.Column object at 0x10046d8d0>}
>>> class ForgetfulPerson(Person):
...     class Meta:
...         exclude = ('last_name', )
...
>>> ForgetfulPerson.base_columns
{'first_name': <django_tables2.columns.Column object at 0x10046df10>}
```

Note: This functionality is also available via the `exclude` keyword argument to a table's constructor.

However, unlike some of the other *`Table.Meta`* options, providing the `exclude` keyword to a table's constructor **won't override** the `Meta.exclude`. Instead, it will be effectively be *added* to it. i.e. you can't use the constructor's `exclude` argument to *undo* an exclusion.

fields (`tuple` or `str`): Fields to show in the table. Used in conjunction with `model`, specifies which fields should have columns in the table. If `None`, all fields are used, otherwise only those named:

```
# models.py
class Person(models.Model):
    first_name = models.CharField(max_length=200)
    last_name = models.CharField(max_length=200)

# tables.py
class PersonTable(tables.Table):
    class Meta:
        model = Person
        fields = ('first_name', )
```

model (`django.core.db.models.Model`): Create columns from model. A model to inspect and automatically create corresponding columns.

This option allows a Django model to be specified to cause the table to automatically generate columns that correspond to the fields in a model.

order_by (tuple or str): The default ordering tuple or comma separated str. A hyphen - can be used to prefix a column name to indicate *descending* order, for example: `('name', '-age')` or `name,-age`.

Note: This functionality is also available via the `order_by` keyword argument to a table's constructor.

sequence (iterable): The sequence of the table columns. This allows the default order of columns (the order they were defined in the Table) to be overridden.

The special item `'...'` can be used as a placeholder that will be replaced with all the columns that weren't explicitly listed. This allows you to add columns to the front or back when using inheritance.

Example:

```
>>> class Person(tables.Table):
...     first_name = tables.Column()
...     last_name = tables.Column()
...
...     class Meta:
...         sequence = ('last_name', '...')
...
>>> Person.base_columns.keys()
['last_name', 'first_name']
```

The `'...'` item can be used at most once in the sequence value. If it's not used, every column *must* be explicitly included. e.g. in the above example, `sequence = ('last_name', )` would be **invalid** because neither `'...'` or `'first_name'` were included.

Note: This functionality is also available via the `sequence` keyword argument to a table's constructor.

orderable (bool): Default value for column's *orderable* attribute. If the table and column don't specify a value, a column's `orderable` value will fallback to this. This provides an easy mechanism to disable ordering on an entire table, without adding `orderable=False` to each column in a table.

Note: This functionality is also available via the `orderable` keyword argument to a table's constructor.

template (str): The default template to use when rendering the table.

Note: This functionality is also available via the *template* keyword argument to a table's constructor.

localize (str or tuple): Specifies which fields should be localized in the table. Read *Controlling localization* for more information.

unlocalize (str or tuple): Specifies which fields should be unlocalized in the table. Read *Controlling localization* for more information.

Columns

`Column`

class `django_tables2.columns.`**`Column`**(*verbose_name=None*, *accessor=None*, *default=None*, *visible=True*, *orderable=None*, *attrs=None*, *order_by=None*, *empty_values=None*, *localize=None*, *footer=None*, *exclude_from_export=False*)

Represents a single column of a table.

`Column` objects control the way a column (including the cells that fall within it) are rendered.

Parameters

- **`attrs`** (*`dict`*) – HTML attributes for elements that make up the column. This API is extended by subclasses to allow arbitrary HTML attributes to be added to the output.

  By default `Column` supports:

  – *th* – `table/thead/tr/th` elements

  – *td* – `table/tbody/tr/td` elements

  – *cell* – fallback if *th* or *td* isn't defined
- **`accessor`** (str or *`Accessor`*) – An accessor that describes how to extract values for this column from the *table data*.
- **`default`** (*`str or callable`*) – The default value for the column. This can be a value or a callable object[1]. If an object in the data provides `None` for a column, the default will be used instead.

  The default value may affect ordering, depending on the type of data the table is using. The only case where ordering is not affected is when a `QuerySet` is used as the table data (since sorting is performed by the database).
- **`empty_values`** (*`iterable`*) – list of values considered as a missing value, for which the column will render the default value. Defaults to `(None, '')`
- **`exclude_from_export`** (*`bool`*) – If `True`, this column will not be added to the data iterator returned from as_values().
- **`footer`** (*`str, callable`*) – Defines the footer of this column. If a callable is passed, it can take optional keyword argumetns `column`, `bound_colun` and `table`.
- **`order_by`** (str, tuple or *`Accessor`*) – Allows one or more accessors to be used for ordering rather than *accessor*.
- **`orderable`** (*`bool`*) – If `False`, this column will not be allowed to influence row ordering/sorting.
- **`verbose_name`** (*`str`*) – A human readable version of the column name.
- **`visible`** (*`bool`*) – If `True`, this column will be rendered.
- **`localize`** – If the cells in this column will be localized by the `localize` filter:

  – If `True`, force localization

  – If `False`, values are not localized

  – If `None` (default), localization depends on the `USE_L10N` setting.

[1] The provided callable object must not expect to receive any arguments.

order (*queryset*, *is_descending*)
Returns the queryset of the table.

This method can be overridden by *table.order_FOO() methods* methods on the table or by subclassing `Column`; but only overrides if second element in return tuple is True.

Returns Tuple (queryset, boolean)

render (*value*)
Returns the content for a specific cell.

This method can be overridden by *Table.render_foo methods* methods on the table or by subclassing `Column`.

If the value for this cell is in `empty_values`, this method is skipped and an appropriate default value is rendered instead. Subclasses should set `empty_values` to `()` if they want to handle all values in `render`.

value (***kwargs*)
Returns the content for a specific cell similarly to `render` however without any html content. This can be used to get the data in the formatted as it is presented but in a form that could be added to a csv file.

The default implementation just calls the `render` function but any subclasses where `render` returns html content should override this method.

See `LinkColumn` for an example.

BooleanColumn

class `django_tables2.columns.`**BooleanColumn** (*null=False*, *yesno=u'u2714*, *u2718'*, ***kwargs*)
A column suitable for rendering boolean data.

Parameters

- **null** (`bool`) – is `None` different from `False`?
- **yesno** (`str`) – text to display for True/False values, comma separated

Rendered values are wrapped in a `<span>` to allow customisation by themes. By default the span is given the class `true`, `false`.

In addition to *attrs* keys supported by `Column`, the following are available:

- *span* – adds attributes to the `<span>` tag

CheckBoxColumn

class `django_tables2.columns.`**CheckBoxColumn** (*attrs=None*, *checked=None*, ***extra*)
A subclass of `Column` that renders as a checkbox form input.

This column allows a user to *select* a set of rows. The selection information can then be used to apply some operation (e.g. "delete") onto the set of objects that correspond to the selected rows.

The value that is extracted from the *table data* for this column is used as the value for the checkbox, i.e. `<input type="checkbox" value="..." />`

This class implements some sensible defaults:

- HTML input's `name` attribute is the *column name* (can override via *attrs* argument).
- *orderable* defaults to `False`.

Parameters

- **attrs** (*dict*) – In addition to *attrs* keys supported by *Column*, the following are available:
  - *input* – <input> elements in both <td> and <th>.
  - *th__input* – Replaces *input* attrs in header cells.
  - *td__input* – Replaces *input* attrs in body cells.
- **checked** (*Accessor*, bool, callable) – Allow rendering the checkbox as checked. If it resolves to a truthy value, the checkbox will be rendered as checked.

Note: You might expect that you could select multiple checkboxes in the rendered table and then *do something* with that. This functionality is not implemented. If you want something to actually happen, you will need to implement that yourself.

is_checked(*value*, *record*)
Determine if the checkbox should be checked

DateColumn

class django_tables2.columns.**DateColumn**(*format=None*, *short=True*, **args*, ***kwargs*)
A column that renders dates in the local timezone.

Parameters

- **format** (*str*) – format string in same format as Django's `date` template filter (optional)
- **short** (*bool*) – if `format` is not specified, use Django's `SHORT_DATE_FORMAT` setting, otherwise use `DATE_FORMAT`

DateTimeColumn

class django_tables2.columns.**DateTimeColumn**(*format=None*, *short=True*, **args*, ***kwargs*)
A column that renders datetimes in the local timezone.

Parameters

- **format** (*str*) – format string for datetime (optional). Note that *format* uses Django's `date` template tag syntax.
- **short** (*bool*) – if `format` is not specified, use Django's `SHORT_DATETIME_FORMAT`, else `DATETIME_FORMAT`

EmailColumn

class django_tables2.columns.**EmailColumn**(*attrs=None*, *text=None*, **args*, ***kwargs*)
Render email addresses to mailto-links.

Parameters

- **attrs** (*dict*) – HTML attributes that are added to the rendered `<a href="...">...</a>` tag

- **text** – Either static text, or a callable. If set, this will be used to render the text inside link instead of the value

Example:

```
# models.py
class Person(models.Model):
    name = models.CharField(max_length=200)
    email =  models.EmailField()

# tables.py
class PeopleTable(tables.Table):
    name = tables.Column()
    email = tables.EmailColumn()

# result
# [...]<a href="mailto:email@example.com">email@example.com</a>
```

FileColumn

class django_tables2.columns.**FileColumn**(*verify_exists=True*, ***kwargs*)

Attempts to render `FieldFile` (or other storage backend `File`) as a hyperlink.

When the file is accessible via a URL, the file is rendered as a hyperlink. The `basename` is used as the text:

```
<a href="/media/path/to/receipt.pdf" title="path/to/receipt.pdf">receipt.pdf</a>
```

When unable to determine the URL, a `span` is used instead:

```
<span title="path/to/receipt.pdf">receipt.pdf</span>
```

`Column.attrs` keys `a` and `span` can be used to add additional attributes.

Parameters

- **verify_exists** (*bool*) – attempt to determine if the file exists If *verify_exists*, the HTML class `exists` or `missing` is added to the element to indicate the integrity of the storage.
- **text** (*str or callable*) – Either static text, or a callable. If set, this will be used to render the text inside the link instead of the file's basename (default)

JSONColumn

class django_tables2.columns.**JSONColumn**(*json_dumps_kwargs=None*, ***kwargs*)

Render the contents of `JSONField` or `HStoreField` as an indented string.

New in version 1.5.0.

Note: Automatic rendering of data to this column requires PostgreSQL support (psycopg2 installed) to import the fields, but this column can also be used manually without it.

Parameters

- **json_dumps_kwargs** – kwargs passed to `json.dumps`, defaults to `{'indent': 2}`
- **attrs** (*dict*) – In addition to *attrs* keys supported by `Column`, the following are available:
  - *pre* – `<pre>` around the rendered JSON string in `<td>` elements.

LinkColumn

class `django_tables2.columns.`**`LinkColumn`**(*viewname=None*, *urlconf=None*, *args=None*, *kwargs=None*, *current_app=None*, *attrs=None*, ***extra*)

Renders a normal value as an internal hyperlink to another page.

It's common to have the primary value in a row hyperlinked to the page dedicated to that record.

The first arguments are identical to that of `reverse` and allows an internal URL to be described. If this argument is `None`, then `get_absolute_url`. (see Django references) will be used. The last argument *attrs* allows custom HTML attributes to be added to the rendered `<a href="...">` tag.

Parameters

- **viewname** (*str*) – See `reverse`, or use `None` to use the model's `get_absolute_url`
- **urlconf** (*str*) – See `reverse`.
- **args** (*list*) – See `reverse`.[2]
- **kwargs** (*dict*) – See `reverse`.[2]
- **current_app** (*str*) – See `reverse`.
- **attrs** (*dict*) – HTML attributes that are added to the rendered `<a ...>...</a>` tag.
- **text** (*str or callable*) – Either static text, or a callable. If set, this will be used to render the text inside link instead of value (default). The callable gets the record being rendered as argument.

Example:

```
# models.py
class Person(models.Model):
    name = models.CharField(max_length=200)

# urls.py
urlpatterns = patterns('',
    url('people/(\d+)/', views.people_detail, name='people_detail')
)

# tables.py
from django_tables2.utils import A  # alias for Accessor

class PeopleTable(tables.Table):
    name = tables.LinkColumn('people_detail', args=[A('pk')])
```

In order to override the text value (i.e. `<a ... >text</a>`) consider the following example:

[2] In order to create a link to a URL that relies on information in the current row, `Accessor` objects can be used in the *args* or *kwargs* arguments. The accessor will be resolved using the row's record before `reverse` is called.

```
# tables.py
from django_tables2.utils import A  # alias for Accessor

class PeopleTable(tables.Table):
    name = tables.LinkColumn('people_detail', text='static text', args=[A('pk')])
    age  = tables.LinkColumn('people_detail', text=lambda record: record.name,␣
↪args=[A('pk')])
```

In the first example, a static text would be rendered ('static text') In the second example, you can specify a callable which accepts a record object (and thus can return anything from it)

In addition to *attrs* keys supported by `Column`, the following are available:

- *a* – `<a>` elements in `<td>`.

Adding attributes to the `<a>`-tag looks like this:

```
class PeopleTable(tables.Table):
    first_name = tables.LinkColumn(attrs={
        'a': {'style': 'color: red;'}
    })
```

compose_url(*record*, **args*, ***kwargs*)
Compose the url if the column is constructed with a viewname.

ManyToManyColumn

class django_tables2.columns.**ManyToManyColumn**(*transform=None*, *filter=None*, **args*, ***kwargs*)
Display the list of objects from a `ManyRelatedManager`

Parameters

- **transform** – callable to transform each item to text, it gets an item as argument and must return a string-like representation of the item. By default, it calls `force_text` on each item.
- **filter** – callable to filter, limit or order the QuerySet, it gets the `ManyRelatedManager` as first argument and must return. By default, it returns `all()``

For example, when displaying a list of friends with their full name:

```
# models.py
class Person(models.Model):
    first_name = models.CharField(max_length=200)
    last_name = models.CharField(max_length=200)
    friends = models.ManyToManyField(Person)

    @property
    def name(self):
        return '{} {}'.format(self.first_name, self.last_name)

# tables.py
class PersonTable(tables.Table):
    name = tables.Column(order_by=('last_name', 'first_name'))
    friends = tables.ManyToManyColumn(transform=lamda user: u.name)
```

filter(*qs*)
Filter is called on the ManyRelatedManager to allow ordering, filtering or limiting on the set of related objects.

transform(*obj*)
Transform is applied to each item of the list of objects from the ManyToMany relation.

RelatedLinkColumn

class django_tables2.columns.**RelatedLinkColumn**(*viewname=None*, *urlconf=None*, *args=None*, *kwargs=None*, *current_app=None*, *attrs=None*, ***extra*)
Render a link to a related object using related object's `get_absolute_url`, same parameters as `~.LinkColumn`

TemplateColumn

class django_tables2.columns.**TemplateColumn**(*template_code=None*, *template_name=None*, ***extra*)
A subclass of *Column* that renders some template code to use as the cell value.

Parameters

- **template_code** (*str*) – template code to render
- **template_name** (*str*) – name of the template to render

A `Template` object is created from the *template_code* or *template_name* and rendered with a context containing:

- *record* – data record for the current row
- *value* – value from `record` that corresponds to the current column
- *default* – appropriate default value to use as fallback

Example:

```
class ExampleTable(tables.Table):
    foo = tables.TemplateColumn('{{ record.bar }}')
    # contents of `myapp/bar_column.html` is `{{ value }}`
    bar = tables.TemplateColumn(template_name='myapp/name2_column.html')
```

Both columns will have the same output.

value(***kwargs*)
The value returned from a call to `value()` on a `TemplateColumn` is the rendered tamplate with `django.utils.html.strip_tags` applied.

URLColumn

class django_tables2.columns.**URLColumn**(*attrs=None*, *text=None*, **args*, ***kwargs*)
Renders URL values as hyperlinks.

Parameters

- **text** (*str or callable*) – Either static text, or a callable. If set, this will be used to render the text inside link instead of value (default)

- **attrs** (*dict*) – Additional attributes for the <a> tag

Example:

```
>>> class CompaniesTable(tables.Table):
...     www = tables.URLColumn()
...
>>> table = CompaniesTable([{'www': 'http://google.com'}])
>>> table.rows[0].get_cell('www')
'<a href="http://google.com">http://google.com</a>'
```

Views and view mixins

`SingleTableMixin`

class `django_tables2.views.`**`SingleTableMixin`**

Adds a Table object to the context. Typically used with `TemplateResponseMixin`.

`table_class`
subclass of *`Table`*

`table_data`
data used to populate the table, any compatible data source.

`context_table_name`
str – name of the table's template variable (default: 'table')

`table_pagination`
dict – controls table pagination. If a `dict`, passed as the *paginate* keyword argument to *`RequestConfig`*. As such, any Truthy value enables pagination. (default: enable pagination)

This mixin plays nice with the Django's'.MultipleObjectMixin' by using `get_queryset`` as a fallback for the table data source.

`get_context_data`(***kwargs*)
Overriden version of `TemplateResponseMixin` to inject the table into the template's context.

`get_table`(***kwargs*)
Return a table object to use. The table has automatic support for sorting and pagination.

`get_table_data`()
Return the table data that should be used to populate the rows.

`get_table_kwargs`()
Return the keyword arguments for instantiating the table.

Allows passing customized arguments to the table constructor, for example, to remove the buttons column, you could define this method in your View:

```
def get_table_kwargs(self):
    return {
        'exclude': ('buttons', )
    }
```

`MultiTableMixin`

class `django_tables2.views.`**`MultiTableMixin`**

Adds a Table object to the context. Typically used with `TemplateResponseMixin`.

the `tables` attribute must be either a list of `Table` instances or classes extended from `Table` which are not already instantiated. In that case, tables_data must be defined, having an entry containing the data for each table in `tables`.

`tables`
list of `Table` instances or list of `Table` child objects.

`tables_data`
if defined, `tables` is assumed to be a list of table classes which will be instatiated with the corresponding item from this list of `TableData` instances.

`table_prefix`
str – Prefix to be used for each table. The string must contain one instance of `{}`, which will be replaced by an integer different for each table in the view. Default is 'table_{}-'.

`context_table_name`
str – name of the table's template variable (default: 'tables')

New in version 1.2.3.

`SingleTableView`

class `django_tables2.views.`**`SingleTableView`**(***kwargs*)
Generic view that renders a template and passes in a `Table` instances.

`get_table`(***kwargs*)
Return a table object to use. The table has automatic support for sorting and pagination.

`get_table_kwargs`()
Return the keyword arguments for instantiating the table.

Allows passing customized arguments to the table constructor, for example, to remove the buttons column, you could define this method in your View:

```
def get_table_kwargs(self):
    return {
        'exclude': ('buttons', )
    }
```

`export.TableExport`

class `django_tables2.export.`**`TableExport`**(*export_format*, *table*, *exclude_columns=None*)
Export data from a table to the filetype specified.

Argumenents: export_format (str): one of `csv, json, latex, ods, tsv, xls, xlsx, yml` table (`Table`): instance of the table to export the data from exclude_columns (iterable): list of column names to exclude from the export

`content_type`()
Returns the content type for the current export format

`export`()
Returns the string/bytes for the current export format

classmethod **`is_valid_format`**(*export_format*)
Returns true if `export_format` is one of the supported export formats

`response`(*filename=None*)
Builds and returns a `HttpResponse` containing the exported data

Parameters **filename** (*str*) – if not None,

export.ExportMixin

class django_tables2.export.**ExportMixin**

Support various export formats for the table data.

ExportMixin looks for some attributes on the class to change it's behaviour:

export_name

str – is the name of file that will be exported, without extension.

export_trigger_param

str – is the name of the GET attribute used to trigger the export. It's value decides the export format, refer to TableExport for a list of available formats.

exclude_columns

iterable – column names excluded from the export. For example, one might want to exclude columns containing buttons from the export. Excluding columns from the export is also possible using the exclude_from_export argument to the *Column* constructor:

```
class Table(tables.Table):
    name = tables.Column()
    buttons = tables.TemplateColumn(exclude_from_export=True, template_name=..
↪.)
```

See *Internal APIs* for internal classes.

1.18.4 Internal APIs

The items documented here are internal and subject to change.

BoundColumns

class django_tables2.columns.**BoundColumns**(*table*, *base_columns*)

Container for spawning *BoundColumn* objects.

This is bound to a table and provides its Table.columns property. It provides access to those columns in different ways (iterator, item-based, filtered and unfiltered etc), stuff that would not be possible with a simple iterator in the table class.

A BoundColumns object is a container for holding BoundColumn objects. It provides methods that make accessing columns easier than if they were stored in a list or dict. Columns has a similar API to a dict (it actually uses a OrderedDict interally).

At the moment you'll only come across this class when you access a Table.columns property.

Parameters **table** (*Table*) – the table containing the columns

__contains__(*item*)

Check if a column is contained within a Columns object.

item can either be a *BoundColumn* object, or the name of a column.

__getitem__(*index*)

Retrieve a specific *BoundColumn* object.

index can either be 0-indexed or the name of a column

```
columns['speed']  # returns a bound column with name 'speed'
columns[0]        # returns the first column
```

`__iter__`()
Convenience API, alias of *`itervisible`*.

`__len__`()
Return how many *`BoundColumn`* objects are contained (and visible).

`__weakref__`
list of weak references to the object (if defined)

`hide`(*name*)
Hide a column.

Parameters **`name`** (*`str`*) – name of the column

`iterall`()
Return an iterator that exposes all *`BoundColumn`* objects, regardless of visiblity or sortability.

`iteritems`()
Return an iterator of `(name, column)` pairs (where `column` is a `BoundColumn`).

This method is the mechanism for retrieving columns that takes into consideration all of the ordering and filtering modifiers that a table supports (e.g. `exclude` and `sequence`).

`iterorderable`()
Same as `BoundColumns.all` but only returns orderable columns.

This is useful in templates, where iterating over the full set and checking `{% if column.ordarable %}` can be problematic in conjunction with e.g. `{{ forloop.last }}` (the last column might not be the actual last that is rendered).

`itervisible`()
Same as *`iterorderable`* but only returns visible *`BoundColumn`* objects.

This is geared towards table rendering.

`show`(*name*)
Show a column otherwise hidden.

Parameters **`name`** (*`str`*) – name of the column

BoundColumn

class `django_tables2.columns.`**`BoundColumn`**(*table*, *column*, *name*)
A *run-time* version of *`Column`*. The difference between *`BoundColumn`* and *`Column`*, is that *`BoundColumn`* objects include the relationship between a *`Column`* and a *`Table`*. In practice, this means that a *`BoundColumn`* knows the *"variable name"* given to the *`Column`* when it was declared on the *`Table`*.

For convenience, all *`Column`* properties are available from this class.

Parameters

- **`table`** (*`Table`*) – The table in which this column exists
- **`column`** (*`Column`*) – The type of column
- **`name`** (*`str`*) – The variable name of the column used when defining the *`Table`*. In this example the name is `age`:

```
class SimpleTable(tables.Table):
    age = tables.Column()
```

`__weakref__`
list of weak references to the object (if defined)

`accessor`
Returns the string used to access data for this column out of the data source.

`attrs`
Proxy to `Column.attrs` but injects some values of our own.

A `th` and `td` are guaranteed to be defined (irrespective of what's actually defined in the column attrs. This makes writing templates easier.

`default`
Returns the default value for this column.

`get_td_class`(*td_attrs*)
Returns the HTML class attribute for a data cell in this column

`get_th_class`(*th_attrs*)
Returns the HTML class attribute for a header cell in this column

`header`
The value that should be used in the header cell for this column.

`localize`
Returns `True`, `False` or `None` as described in `Column.localize`

`order_by`
Returns an *`OrderByTuple`* of appropriately prefixed data source keys used to sort this column.

See *`order_by_alias`* for details.

`order_by_alias`
Returns an `OrderBy` describing the current state of ordering for this column.

The following attempts to explain the difference between `order_by` and *`order_by_alias`*.

`order_by_alias` returns and *`OrderBy`* instance that's based on the *name* of the column, rather than the keys used to order the table data. Understanding the difference is essential.

Having an alias *and* a keys version is necessary because an N-tuple (of data source keys) can be used by the column to order the data, and it's ambiguous when mapping from N-tuple to column (since multiple columns could use the same N-tuple).

The solution is to use order by *aliases* (which are really just prefixed column names) that describe the ordering *state* of the column, rather than the specific keys in the data source should be ordered.

e.g.:

```
>>> class SimpleTable(tables.Table):
...     name = tables.Column(order_by=('firstname', 'last_name'))
...
>>> table = SimpleTable([], order_by=('-name', ))
>>> table.columns['name'].order_by_alias
'-name'
>>> table.columns['name'].order_by
('-first_name', '-last_name')
```

The `OrderBy` returned has been patched to include an extra attribute `next`, which returns a version of the alias that would be transitioned to if the user toggles sorting on this column, e.g.:

```
not sorted -> ascending
ascending  -> descending
descending -> ascending
```

This is useful otherwise in templates you'd need something like:

```
{% if column.is_ordered %}
{% querystring table.prefixed_order_by_field=column.order_by_alias.opposite %}
{% else %}
{% querystring table.prefixed_order_by_field=column.order_by_alias %}
{% endif %}
```

orderable
Return a `bool` depending on whether this column supports ordering.

verbose_name
Return the verbose name for this column.

In order of preference, this will return:

1. The column's explicitly defined `verbose_name`
2. The titlised model's `verbose_name` (if applicable)
3. Fallback to the titlised column name.

Any `verbose_name` that was not passed explicitly in the column definition is returned titlised in keeping with the Django convention of `verbose_name` being defined in lowercase and uppercased/titlised as needed by the application.

If the table is using queryset data, then use the corresponding model field's `verbose_name`. If it's traversing a relationship, then get the last field in the accessor (i.e. stop when the relationship turns from ORM relationships to object attributes [e.g. person.upper should stop at person]).

visible
Returns a `bool` depending on whether this column is visible.

BoundRows

class `django_tables2.rows.`**`BoundRows`**(*data*, *table*, *pinned_data=None*)
Container for spawning *`BoundRow`* objects.

Parameters

- **`data`** – iterable of records
- **`table`** – the *`Table`* in which the rows exist
- **`pinned_data`** – dictionary with iterable of records for top and/or bottom pinned rows.

Example

```
>>> pinned_data = {
...     'top': iterable,      # or None value
...     'bottom': iterable,   # or None value
... }
```

This is used for `rows`.

`__getitem__`(*key*)
Slicing returns a new `BoundRows` instance, indexing returns a single `BoundRow` instance.

`__weakref__`
list of weak references to the object (if defined)

`generator_pinned_row`(*data*)
Top and bottom pinned rows generator.

Parameters **`data`** – Iterable datas for all records for top or bottom pinned rows.

Yields *BoundPinnedRow* – Top or bottom BoundPinnedRow object for single pinned record.

BoundRow

class `django_tables2.rows.`**`BoundRow`**(*record*, *table*)
Represents a *specific* row in a table.

`BoundRow` objects are a container that make it easy to access the final 'rendered' values for cells in a row. You can simply iterate over a `BoundRow` object and it will take care to return values rendered using the correct method (e.g. *Table.render_foo methods*)

To access the rendered value of each cell in a row, just iterate over it:

```
>>> import django_tables2 as tables
>>> class SimpleTable(tables.Table):
...     a = tables.Column()
...     b = tables.CheckBoxColumn(attrs={'name': 'my_chkbox'})
...
>>> table = SimpleTable([{'a': 1, 'b': 2}])
>>> row = table.rows[0]  # we only have one row, so let's use it
>>> for cell in row:
...     print(cell)
...
1
<input type="checkbox" name="my_chkbox" value="2" />
```

Alternatively you can use row.get_cell() to retrieve a specific cell:

```
>>> row.get_cell(0)
1
>>> row.get_cell(1)
u'<input type="checkbox" name="my_chkbox" value="2" />'
>>> row.get_cell(2)
...
IndexError: list index out of range
```

Finally you can also use the column names to retrieve a specific cell:

```
>>> row.get_cell('a')
1
>>> row.get_cell('b')
u'<input type="checkbox" name="my_chkbox" value="2" />'
>>> row.get_cell('c')
...
KeyError: 'c'
```

Parameters

- **table** – The *Table* in which this row exists.
- **record** – a single record from the *table data* that is used to populate the row. A record could be a `Model` object, a `dict`, or something else.

`__contains__`(*item*)
Check by both row object and column name.

`__iter__`()
Iterate over the rendered values for cells in the row.

Under the hood this method just makes a call to `BoundRow.__getitem__` for each cell.

`__weakref__`
list of weak references to the object (if defined)

`_call_render`(*bound_column*, *value=None*)
Call the column's render method with appropriate kwargs

`_call_value`(*bound_column*, *value=None*)
Call the column's value method with appropriate kwargs

`_optional_cell_arguments`(*bound_column*, *value*)
Defines the arguments that will optionally be passed while calling the cell's rendering or value getter if that function has one of these as a keyword argument.

`attrs`
Return the attributes for a certain row.

`get_cell`(*name*)
Returns the final rendered html for a cell in the row, given the name of a column.

`get_cell_value`(*name*)
Returns the final rendered value (excluding any html) for a cell in the row, given the name of a column.

`get_even_odd_css_class`()
Return css class, alternating for odd and even records.

Returns `even` for even records, `odd` otherwise.

Return type string

`items`()
Returns iterator yielding `(bound_column, cell)` pairs.

cell is `row[name]` – the rendered unicode value that should be `rendered within ``<td>`.

`record`
The data record from the data source which is used to populate this row with data.

`table`
The associated *Table* object.

BoundPinnedRow

class `django_tables2.rows.`**`BoundPinnedRow`**(*record*, *table*)
Represents a *pinned* row in a table. Inherited from BoundRow.

`attrs`
Return the attributes for a certain pinned row. Add css clases `pinned-row` to `class` attribute.

Returns Attributes for pinned rows.

Return type AttributeDict

TableData

class `django_tables2.tables.`**`TableData`**(*data*, *table*)

Base class for table data containers.

`__getitem__`(*key*)

Slicing returns a new *`TableData`* instance, indexing returns a single record.

`__iter__`()

for ... in ... default to using this. There's a bug in Django 1.3 with indexing into querysets, so this side-steps that problem (as well as just being a better way to iterate).

`__weakref__`

list of weak references to the object (if defined)

utils

class `django_tables2.utils.`**`Sequence`**

Represents a column sequence, e.g. `('first_name', '...', 'last_name')`

This is used to represent `Table.Meta.sequence` or the *`Table`* constructors's *sequence* keyword argument.

The sequence must be a list of column names and is used to specify the order of the columns on a table. Optionally a '...' item can be inserted, which is treated as a *catch-all* for column names that aren't explicitly specified.

`__weakref__`

list of weak references to the object (if defined)

`expand`(*columns*)

Expands the `'...'` item in the sequence into the appropriate column names that should be placed there.

Parameters **`columns`** (*`list`*) – list of column names.

Returns The current instance.

Raises `ValueError` if the sequence is invalid for the columns.

class `django_tables2.utils.`**`OrderBy`**

A single item in an *`OrderByTuple`* object. This class is essentially just a `str` with some extra properties.

`bare`

Returns – *`OrderBy`* – the bare form.

The *bare form* is the non-prefixed form. Typically the bare form is just the ascending form.

Example: `age` is the bare form of `-age`

`for_queryset`()

Returns the current instance usable in Django QuerySet's order_by arguments.

`is_ascending`

Returns `True` if this object induces *ascending* ordering.

`is_descending`

Returns `True` if this object induces *descending* ordering.

opposite
Provides the opposite of the current sorting directon.

Returns object with an opposite sort influence.

Return type *OrderBy*

Example:

```
>>> order_by = OrderBy('name')
>>> order_by.opposite
'-name'
```

class django_tables2.utils.**OrderByTuple**
Stores ordering as (as *OrderBy* objects). The `order_by` property is always converted to an *OrderByTuple* object.

This class is essentially just a `tuple` with some useful extras.

Example:

```
>>> x = OrderByTuple(('name', '-age'))
>>> x['age']
'-age'
>>> x['age'].is_descending
True
>>> x['age'].opposite
'age'
```

__contains__(*name*)
Determine if a column has an influence on ordering.

Example:

```
>>> x = OrderByTuple(('name', ))
>>> 'name' in  x
True
>>> '-name' in x
True
```

Parameters **name** (*str*) – The name of a column. (optionally prefixed)

Returns `True` if the column with `name` influences the ordering.

Return type bool

__getitem__(*index*)
Allows an *OrderBy* object to be extracted via named or integer based indexing.

When using named based indexing, it’s fine to used a prefixed named:

```
>>> x = OrderByTuple(('name', '-age'))
>>> x[0]
'name'
>>> x['age']
'-age'
>>> x['-age']
'-age'
```

Parameters **index** (*int*) – Index to query the ordering for.

Returns for the ordering at the index.

Return type *OrderBy*

get (*key*, *fallback*)
Identical to __getitem__, but supports fallback value.

opposite
Return version with each *OrderBy* prefix toggled:

```
>>> order_by = OrderByTuple(('name', '-age'))
>>> order_by.opposite
('-name', 'age')
```

class django_tables2.utils.**Accessor**
A string describing a path from one object to another via attribute/index accesses. For convenience, the class has an alias `A` to allow for more concise code.

Relations are separated by a `.` character.

get_field (*model*)
Return the django model field for model in context, following relations.

penultimate (*context*, *quiet=True*)

Split the accessor on the right-most dot '.', return a tuple with:

- the resolved left part.
- the remainder

Example:

```
>>> Accessor('a.b.c').penultimate({'a': {'a': 1, 'b': {'c': 2, 'd': 4}}})
({'c': 2, 'd': 4}, 'c')
```

resolve (*context*, *safe=True*, *quiet=False*)
Return an object described by the accessor by traversing the attributes of *context*.

Lookups are attempted in the following order:

- dictionary (e.g. `obj[related]`)
- attribute (e.g. `obj.related`)
- list-index lookup (e.g. `obj[int(related)]`)

Callable objects are called, and their result is used, before proceeding with the resolving.

Example:

```
>>> x = Accessor('__len__')
>>> x.resolve('brad')
4
>>> x = Accessor('0.upper')
>>> x.resolve('brad')
'B'
```

Parameters

- **context** (*object*) – The root/first object to traverse.
- **safe** (*bool*) – Don't call anything with `alters_data = True`

- **quiet** (*bool*) – Smother all exceptions and instead return `None`

Returns target object

Raises

- TypeError', `AttributeError`, `KeyError`, `ValueError`
- (unless `quiet` == `True`)

class `django_tables2.utils.`**`AttributeDict`**

A wrapper around `dict` that knows how to render itself as HTML style tag attributes.

The returned string is marked safe, so it can be used safely in a template. See *`as_html`* for a usage example.

`__weakref__`

list of weak references to the object (if defined)

`as_html``()`

Render to HTML tag attributes.

Example:

```
>>> from django_tables2.utils import AttributeDict
>>> attrs = AttributeDict({'class': 'mytable', 'id': 'someid'})
>>> attrs.as_html()
'class="mytable" id="someid"'
```

Return type `SafeUnicode` object

`django_tables2.utils.`**`signature`**`(`*fn*`)`

Returns

Returns a (arguments, kwarg_name)-tuple:

- the arguments (positional or keyword)
- the name of the ** kwarg catch all.

Return type tuple

The self-argument for methods is always removed.

`django_tables2.utils.`**`call_with_appropriate`**`(`*fn*, *kwargs*`)`

Calls the function `fn` with the keyword arguments from `kwargs` it expects

If the kwargs argument is defined, pass all arguments, else provide exactly the arguments wanted.

`django_tables2.utils.`**`computed_values`**`(`*d*, *kwargs=None*`)`

Returns a new `dict` that has callable values replaced with the return values.

Example:

```
>>> compute_values({'foo': lambda: 'bar'})
{'foo': 'bar'}
```

Arbitrarily deep structures are supported. The logic is as follows:

1. If the value is callable, call it and make that the new value.
2. If the value is an instance of dict, use ComputableDict to compute its keys.

Example:

```
>>> def parents():
...     return {
...         'father': lambda: 'Foo',
...         'mother': 'Bar'
...      }
...
>>> a = {
...     'name': 'Brad',
...     'parents': parents
... }
...
>>> computed_values(a)
{'name': 'Brad', 'parents': {'father': 'Foo', 'mother': 'Bar'}}
```

Parameters

- **d** (*dict*) – The original dictionary.
- **kwargs** – any extra keyword arguments will be passed to the callables, if the callable takes an argument with such a name.

Returns with callable values replaced.

Return type dict

1.19 FAQ

Some frequently requested questions/examples. All examples assume you import django-tables2 like this:

```
import django_tables2 as tables
```

1.19.1 How should I fix error messages about the request context processor?

The error message looks something like this:

```
Tag {% querystring %} requires django.template.context_processors.request to be
in the template configuration in settings.TEMPLATES[]OPTIONS.context_processors)
in order for the included template tags to function correctly.
```

which should be pretty clear, but here is an example template configuration anyway:

```
TEMPLATES = [
    {
        'BACKEND': 'django.template.backends.django.DjangoTemplates',
        'DIRS': ['templates'],
        'APP_DIRS': True,
        'OPTIONS': {
            'context_processors': [
                'django.contrib.auth.context_processors.auth',
                'django.template.context_processors.request',
                'django.template.context_processors.static',
            ],
        }
    }
]
```

1.19.2 How to create a row counter?

You can use `itertools.counter` to add row count to a table. Note that in a paginated table, every page's counter will start at zero.

Use a `render_counter()`-method:

```
import itertools

class CountryTable(tables.Table):
    counter = tables.Column(empty_values=(), orderable=False)

    def render_counter(self):
        self.row_counter = getattr(self, 'row_counter', itertools.count())
        return next(self.row_counter)
```

Or create a specialized column:

```
import itertools

class CounterColumn(tables.Column):
    def __init__(self, *args, **kwargs):
        self.counter = itertools.count()
        kwargs.update({
            'empty_values': (),
            'orderable': False
        })
        super(CounterColumn, self).__init__(*args, **kwargs)

    def render(self):
        return next(self.counter)
```

1.19.3 How to add a footer containing a column total?

Using the `footer`-argument to *`Column`*:

```
class CountryTable(tables.Table):
    population = tables.Column(
        footer=lambda table: sum(x['population'] for x in table.data)
    )
```

Or by creating a custom column:

```
class SummingColumn(tables.Column):
    def render_footer(self, bound_column, table):
        return sum(bound_column.accessor.resolve(row) for row in table.data)

class Table(tables.Table):
    name = tables.Column(footer='Total:')
    population = SummingColumn()
```

Documentation: *Adding column footers*

Note: Your table template must include a block rendering the table footer!

1.19.4 Can I use inheritance to build Tables that share features?

Yes, like this:

```
class CountryTable(tables.Table):
    name = tables.Column()
    language = tables.Column()
```

A `CountryTable` will show columns `name` and `language`:

```
class TouristCountryTable(CountryTable):
    tourist_info = tables.Column()
```

A `TouristCountryTable` will show columns `name`, `language` and `tourist_info`.

Overwriting a `Column` attribute from the base class with anything that is not a `Column` will result in removing that Column from the `Table`. For example:

```
class SimpleCountryTable(CountryTable):
    language = None
```

A `SimpleCountryTable` will only show column `name`.

1.20 Upgrading and change log

Recent versions of django-tables2 have a corresponding git tag for each version released to pypi.

1.20.1 Change log

master

- Allow export filename customization #484 by @federicobond
- Fixed a bug where template columns were not rendered for pinned rows (#483 by @khirstinova, fixes #482)

1.11.0

- Added Hungarian translation #471 by @hmikihth.
- Added TemplateColumn.value() and enhanced export docs (fixes #470)
- Fixed display of pinned rows if table has no data. #477 by @khirstinova

1.10.0 (2017-06-30)

- Added `ManyToManyColumn` automatically added for `ManyToManyFields`.

1.9.1 (2017-06-29)

- Allow customizing the value used in `Table.as_values()` (when using a `render_<name>` method) using a `value_<name>` method. (fixes #458)
- Allow excluding columns from the `Table.as_values()` output. (fixes #459)
- Fixed unicode handling for columhn headers in `Table.as_values()`

1.9.0 (2017-06-22)

- Allow computable attrs for `<td>`-tags from `Table.attrs` (#457, fixes #451)

1.8.0 (2017-06-17)

- Feature: Added an `ExportMixin` to export table data in various export formats (CSV, XLS, etc.) using tablib.
- Defer expanding `Meta.sequence` to `Table.__init__`, to make sequence work in combination with `extra_columns` (fixes #450)
- Fixed a crash when `MultiTableMixin.get_tables()` returned an empty array (#454 by @pypetey

1.7.1 (2017-06-02)

- Call before_render when rendering with the render_table template tag (fixes #447)

1.7.0 (2017-06-01)

- Make `title()` lazy (#443 by @ygwain, fixes #438)
- Fix `__all__` by populating them with the names of the items to export instead of the items themself.
- Allow adding extra columns to an instance using the `extra_columns` argument. Fixes #403, #70
- Added a hook `before_render` to allow last-minute changes to the table before rendering.
- Added `BoundColumns.show()` and `BoundColumns.hide()` to show/hide columns on an instance of a `Table`.
- Use `<listlike>.verbose_name`/`.verbose_name_plural` if it exists to name the items in the list. (fixes #166)

1.6.1 (2017-05-08)

- Add missing pagination to the responsive bootstrap template (#440 by @tobiasmcnulty)

1.6.0 (2017-05-01)

- Add new template `bootstrap-responsive.html` to generate a responsive bootstrap table. (Fixes #436)

1.5.0 (2017-04-18)

Full disclosure: as of april 1st, 2017, I am an employee of Zostera, as such I will continue to maintain and improve django-tables2.

- Made `TableBase.as_values()` an interator (#432 by @pziarsolo)
- Added `JSONField` for data in JSON format.
- Added `__all__` in `django_tables2/__init__.py` and `django_tables2/columns/__init__.py`
- Added a setting `DJANGO_TABLES2_TEMPLATE` to allow project-wide overriding of the template used to render tables (fixes #434).

1.4.2 (2017-03-06)

- Feature: Pinned rows (#411 by @djk2, fixes #406)
- Fix an issue where `ValueError` was raised while using a view with a `get_queryset()` method defined. (fix with #423 by @desecho)

1.4.1 (2017-02-27)

- Fix urls to screenshots in on pypi description (fixes #398)
- Prevent superfluous spaces when a callable `row_attrs['class']` returns an empty string ([#417](https://github.com/bradleyayers/django-tables2/pull/417 by @Superman8218), fixes #416)

1.4.0 (2017-02-27)

- Return `None` from `Table.as_values()` for missing values. #419
- Fix ordering by custom fields, and refactor `TableData` #424, fixes #413
- Revert removing `TableData.__iter__()` (removed in this commit), fixes #427, #361 and #421.

1.3.0 (2017-01-20)

- Implement method `Table.as_values()` to get it's raw values. #394 by @intiocean
- Fix some compatibility issues with django 2.0 #408 by djk2

1.2.9 (2016-12-21)

- Documentation for `None`-column attributes #401 by @dyve

1.2.8 (2016-12-21)

- `None`-column attributes on child class overwrite column attributes of parent class #400 by @dyve

1.2.7 (2016-12-12)

- Apply `title` to a column's `verbose_name` when it is derived from a model, fixes #249. (#382 by @shawn-napora)
- Update documentation after deprecation of `STATIC_URL` in django (#384, by @velaia)
- Cleanup of the templates, making the output more equal (#381 by @ralgozino)
- Use new location for `urlresolvers` in Django and add backwards compatible import (#388 by @felixxm)
- Fix a bug where using `sequence` and then `exclude` in a child table would result in a `KeyError`
- Some documentation fixes and cleanups.

1.2.6 (2016-09-06)

- Added `get_table_kwargs()` method to `SingleTableMixin` to allow passing custom keyword arguments to the `Table` constructor. (#366 by @fritz-k)
- Allow the children of `TableBase` render in the `{% render_table %}` template tag. (#377 by @shawn-napora)
- Refactor `BoundColumn` attributes to allow override of CSS class names, fixes #349 (#370 by @graup). Current behaviour should be intact, we will change the default in the future so it will **not** add the column name to the list of CSS classes.

1.2.5 (2016-07-30)

- Fixed an issue preventing the rest of the row being rendered if a `BooleanColumn` was in the table for a model without custom choices defined on the model field. (#360)

1.2.4 (2016-07-28)

- Added Norwegian Locale (#356 by @fanzypantz)
- Restore default pagination for `SingleTableMixin`, fixes #354 (#395 by @graup)

1.2.3 (2016-07-05)

- Accept `text` parameter in `FileColumn`, analogous to `LinkColumn` (#343 by @graup)
- Fix TemplateColumn RemovedInDjango110Warning fixes #346.
- Use field name in RelatedColumnLink (#350, fixes #347)

v1.2.2 (2016-06-04)

- Allow use of custom class names for ordered columns through `attrs`. (#329 by @theTarkus)
- Column ordering queryset passthrough (#330 by @theTarkus)
- Cleanup/restructuring of documentation, (#325)
- Fixed an issue where explicitly defined column options where not preserved over inheritance (#339, issue #337)
- Fixed an issue where `exclude` in combination with `sequence` raised a KeyError (#341, issue #205)

v1.2.1 (2016-05-09)

- table footers (#323)
- Non-field based `LinkColumn` only renders default value if lookup fails. (#322)
- Accept `text` parameter in `BaseLinkColumn`-based columns. (#322)
- Pass the table instance into SingleTableMixin's `get_table_pagination` (#320 by @georgema1982, fixes #319)
- Check if the view has `paginate_by` before before trying to access it. (fixes #326)

v1.2.0 (2016-05-02)

- Allow custom attributes for rows (fixes #47)

v1.1.8 (2016-05-02)

- Ability to change the body of the `<a>`-tag, by passing `text` kwarg to the columns inheriting from BaseLinkColumn (#318 by @desecho, #322)
- Non-field based LinkColumn only renders default value if lookup fails and text is not set. (#322, fixes #257)

v1.1.7 (2016-04-26)

- Added Italian translation (#315 by @paolodina
- Added Dutch translation.
- Fixed {% blocktrans %} template whitespace issues
- Fixed errors when using a column named `items` (#316)
- Obey `paginate_by` (from `MultipleObjectMixin`) if no later pagination is defined (#242)

v1.1.6 (2016-04-02)

- Correct error message about request context processors for current Django (#314)
- Skipped 1.1.5 due to an error while creating the tag.

v1.1.4 (2016-03-22)

- Fix broken `setup.py` if Django is not installed before django-tables2 (fixes #312)

v1.1.3 (2016-03-21)

- Drop support for Django 1.7
- Add argument to CheckBoxColumn to render it as checked (original PR: #208)

v1.1.2 (2016-02-16)

- Fix `BooleanColumn` with choices set will always render as if `True` (#301)
- Fix a bug with `TemplateColumn` while using cached template loader (#75)

v1.1.1 (2016-01-26)

- Allow Meta.fields to be a list as well as a tuple (#250)
- Call template.render with a dict in Django >= 1.8. (#298)
- Added `RelatedLinkColumn()` to render links to related objects (#297)
- Remove default value from request param to table.as_html()

v1.1.0 (2016-01-19)

- Add tests for `TimeColumn`
- Remove `sortable` argument for `Table` and Column constructors and its associated methods. Deprecated since 2012.
- Remove deprecated aliases for `attrs` in `CheckboxColumn`.
- Remove deprecated `OrderByTuple` `cmp` method (deprecated since 2013).
- Add bootstrap template and (#293, fixes #141, #285)
- Fix different html for tables with and without pagination (#293, fixes #149, #285)
- Remove `{% nospaceless %}` template tag and remove wrapping template in `{% spaceless %}` **Possible breaking change**, if you use custom templates.

v1.0.7 (2016-01-03)

- Explicitly check if `column.verbose_name` is not None to support empty column headers (fixes #280)
- Cleanup the example project to make it work with modern Django versions.
- Do not sort queryset when orderable=False (#204 by @bmihelac)
- `show_header` attribute on `Table` allows disabling the header (#175 by @kviktor)
- `LinkColumn` now tries to call `get_absolute_url` on a record if no `viewname` is provided (#283, fixes #231).
- Add `request` argument to `Table.as_html()` to allow passing correct request objects instead of poorly generated ones #282
- Add coverage reporting to build #282
- Drop support for python 3.2 (because of coverage), support ends feb 2016 #282
- move `build_request` from `django_table2.utils` to `tests.utils` and amend tests #282

v1.0.6 (2015-12-29)

- Support for custom text value in LinkColumn (#277 by @toudi)
- Refactor LinkColumn.render_link() to not escape twice #279
- Removed `Attrs` (wrapper for dict), deprecated on 2012-09-18
- Convert README.md to rst in setup.py to make PyPI look nice (fixes #97)

v1.0.5 (2015-12-17)

- First version released by new maintainer @jieter
- Dropped support for django 1.5 and 1.6, add python 3.5 with django 1.8 and 1.9 to the build matrix (#273)
- Prevent `SingleTableView` from calling `get_queryset` twice. (fixes #155)
- Don't call managers when resolving accessors. (#214 by @mbertheau, fixes #211)

v1.0.4 (2015-05-09)

- Fix bug in retrieving `field.verbose_name` under Django 1.8.

v1.0.3

- Remove setup.cfg as PyPI doesn't actually support it, instead it's a distutils2 thing that's been discontinued.

v1.0.2

- Add setup.cfg to declare README.md for PyPI.

v1.0.1

- Convert README to markdown so it's formatted nicely on PyPI.

v1.0.0

- Travis CI builds pass.
- Added Python 3.4 support.
- Added Django 1.7 and Django 1.8 support.
- Convert tests to using py.test.

v0.16.0

- Django 1.8 fixes
- `BoundColumn.verbose_name` now titlises only if no verbose_name was given. `verbose_name` is used verbatim.
- Add max_length attribute to person CharField

- Add Swedish translation
- Update docs presentation on readthedocs

v0.15.0

- Add UK, Russian, Spanish, Portuguese, and Polish translations
- Add support for computed table `attrs`.

v0.14.0

- `querystring` and `seturlparam` template tags now require the request to be in the context (backwards incompatible) – #127
- Add Travis CI support
- Add support for Django 1.5
- Add L10N control for columns #120 (ignored in < Django 1.3)
- Drop Python 2.6.4 support in favour of Python 3.2 support
- Non-queryset data ordering is different between Python 3 and 2. When comparing different types, their truth values are now compared before falling back to string representations of their type.

v0.13.0

- Add FileColumn.

v0.12.1

- When resolving an accessor, *all* exceptions are smothered into `None`.

v0.12.0

- Improve performance by removing unnecessary queries
- Simplified pagination:
  - `Table.page` is an instance attribute (no longer `@property`)
  - Exceptions raised by paginators (e.g. `EmptyPage`) are no longer smothered by `Table.page`
  - Pagination exceptions are raised by `Table.paginate`
  - `RequestConfig` can handles pagination errors silently, can be disabled by including `silent=False` in the `paginate` argument value
- Add `DateTimeColumn` and `DateColumn` to handle formatting `datetime` and timezones.
- Add `BooleanColumn` to handle bool values
- `render_table` can now build and render a table for a queryset, rather than needing to be passed a table instance
- Table columns created automatically from a model now use specialised columns

- `Column.render` is now skipped if the value is considered *empty*, the default value is used instead. Empty values are specified via `Column.empty_values`, by default is `(None, '')` (backward incompatible)
- Default values can now be specified on table instances or `Table.Meta`
- Accessor's now honor `alters_data` during resolving. Fixes issue that would delete all your data when a column had an accessor of `delete`
- Add `default` and `value` to context of `TemplateColumn`
- Add cardinality indication to the pagination area of a table
- `Attrs` is deprecated, use `dict` instead

v0.11.0

- Add `URLColumn` to render URLs in a data source into hyperlinks
- Add `EmailColumn` to render email addresses into hyperlinks
- `TemplateColumn` can now Django's template loaders to render from a file

v0.10.4

- Fix more bugs on Python 2.6.4, all tests now pass.

v0.10.3

- Fix issues for Python 2.6.4 – thanks Steve Sapovits & brianmay
- Reduce Django 1.3 dependency to Table.as_html – thanks brianmay

v0.10.2

- Fix MANIFEST.in to include example templates, thanks TWAC.
- Upgrade django-attest to fix problem with tests on Django 1.3.1

v0.10.1

- Fixed support for Django 1.4's paginator (thanks koledennix)
- Some juggling of internal implementation. `TableData` now supports slicing and returns new `TableData` instances. `BoundRows` now takes a single argument `data` (a `TableData` instance).
- Add support for `get_pagination` on `SingleTableMixin`.
- `SingleTableMixin` and `SingleTableView` are now importable directly from `django_tables2`.

v0.10.0

- Renamed `BoundColumn.order_by` to `order_by_alias` and never returns `None` (**Backwards incompatible**). Templates are affected if they use something like:

  ```
  {% querystring table.prefixed_order_by_field=column.order_by.
  ↪opposite|default:column.name %}
  ```

Which should be rewritten as:

```
{% querystring table.prefixed_order_by_field=column.order_by_alias.next %}
```

- Added `next` shortcut to `OrderBy` returned from `BoundColumn.order_by_alias`
- Added `OrderByTuple.get()`
- Deprecated `BoundColumn.sortable`, `Column.sortable`, `Table.sortable`, `sortable` CSS class, `BoundColumns.itersortable`, `BoundColumns.sortable`; use `orderable` instead of `sortable`.
- Added `BoundColumn.is_ordered`
- Introduced concept of an `order by alias`, see glossary in the docs for details.

v0.9.6

- Fix bug that caused an ordered column's th to have no HTML attributes.

v0.9.5

- Updated example project to add colspan on footer cell so table border renders correctly in Webkit.
- Fix regression that caused 'sortable' class on .
- Table.**init** no longer *always* calls .order_by() on querysets, fixes #55. This does introduce a slight backwards incompatibility. `Table.order_by` now has the possibility of returning `None`, previously it would *always* return an `OrderByTuple`.
- DeclarativeColumnsMetaclass.**new** now uses super()
- Testing now requires pylint and Attest >=0.5.3

v0.9.4

- Fix regression that caused column verbose_name values that were marked as safe to be escaped. Now any verbose_name values that are instances of SafeData are used unmodified.

v0.9.3

- Fix regression in `SingleTableMixin`.
- Remove stray `print` statement.

v0.9.2

- `SingleTableView` now uses `RequestConfig`. This fixes issues with `order_by_field`, `page_field`, and `per_page_field` not being honored.
- Add `Table.Meta.per_page` and change `Table.paginate` to use it as default.
- Add `title` template filter. It differs from Django's built-in `title` filter because it operates on an individual word basis and leaves words containing capitals untouched. **Warning**: use `{% load ... from ... %}` to avoid inadvertantly replacing Django's builtin `title` template filter.

- `BoundColumn.verbose_name` no longer does `capfirst`, titlising is now the responsbility of `Column.header`.
- `BoundColumn.__unicode__` now uses `BoundColumn.header` rather than `BoundColumn.verbose_name`.

v0.9.1

- Fix version in setup.py (doh)

v0.9.0

- Add support for column attributes (see Attrs)
- Add BoundRows.items() to yield (bound_column, cell) pairs
- Tried to make docs more concise. Much stronger promotion of using RequestConfig and {% querystring %}

v0.8.4

- Removed random 'print' statements.
- Tweaked 'paleblue' theme css to be more flexible:
  - removed `whitespace: no-wrap`
  - header background image to support more than 2 rows of text

v0.8.3

- Fixed stupid import mistake. Tests didn't pick it up due to them ignoring `ImportError`.

v0.8.2

- `SingleTableView` now inherits from `ListView` which enables automatic `foo_list.html` template name resolution (thanks dramon for reporting)
- `render_table` template tag no suppresses exceptions when `DEBUG=True`

v0.8.1

- Fixed bug in render_table when giving it a template (issue #41)

v0.8.0

- Added translation support in the default template via `{% trans %}`
- Removed `basic_table.html`, `Table.as_html()` now renders `table.html` but will clobber the querystring of the current request. Use the `render_table` template tag instead
- `render_table` now supports an optional second argument – the template to use when rendering the table
- `Table` now supports declaring which template to use when rendering to HTML
- Django >=1.3 is now required

- Added support for using django-haystack's `SearchQuerySet` as a data source
- The default template `table.html` now includes block tags to make it easy to extend to change small pieces
- Fixed table template parsing problems being hidden due to a subsequent exception being raised
- Http404 exceptions are no longer raised during a call to `Table.paginate()`, instead it now occurs when `Table.page` is accessed
- Fixed bug where a table couldn't be rendered more than once if it was paginated
- Accessing `Table.page` now returns a new page every time, rather than reusing a single object

v0.7.8

- Tables now support using both `sequence` and `exclude` (issue #32).
- `Sequence` class moved to `django_tables2/utils.py`.
- Table instances now support modification to the `exclude` property.
- Removed `BoundColumns._spawn_columns`.
- `Table.data`, `Table.rows`, and `Table.columns` are now attributes rather than properties.

1.20.2 Upgrading from django-tables Version 1

- Change your `INSTALLLED_APPS` entry from `'django_tables.app'` to `'django_tables2'`.
- Change all your import references from `django_tables` to `django_tables2`.
- Replace all references to the old `MemoryTable` and `ModelTable` classes with simply `Table`.
- In your templates, load the `django_tables2` template library; `{% load django_tables2 %}` instead of `{% load tables %}`.
- A table object is no longer iterable; rather than `for row in table`, instead you now do explicitly: `for row in table.rows`.
- If you were using `row.data` to access a row's underlying data, replace it with `row.record` instead.
- When declaring columns, replace the use of:

  ```
  name_in_dataset = tables.Column(name='wanted_column_name')
  ```

  with:

  ```
  wanted_column_name = tables.Column(accessor='name_in_dataset')
  ```

- When declaring columns, replace the use of:

  ```
  column_to_override = tables.Column(name='wanted_column_name', data='name_in_
  ↪dataset')
  ```

  with:

  ```
  wanted_column_name = tables.Column(accessor='name_in_dataset')
  ```

  and exclude `column_to_override` via the table meta data.

- When generating the link to order the column, instead of:

```
{% set_url_param sort=column.name_toggled %}
```

use:

```
{% querystring table.order_by_field=column.order_by_alias.next %}
```

- Replace:

```
{{ column.is_ordered_reverse }} and {{ column.is_ordered_straight }}
```

with:

```
{{ column.order_by.is_descending }} and {{ column.order_by.is_ascending }}
```

1.21 Glossary

accessor Refers to an `Accessor` object

column name The name given to a column. In the follow example, the *column name* is `age`.

```
class SimpleTable(tables.Table):
    age = tables.Column()
```

empty value An empty value is synonymous with "no value". Columns have an `empty_values` attribute that contains values that are considered empty. It's a way to declare which values from the database correspond to *null/blank/missing* etc.

order by alias A prefixed column name that describes how a column should impact the order of data within the table. This allows the implementation of how a column affects ordering to be abstracted, which is useful (e.g. in querystrings).

```
class ExampleTable(tables.Table):
    name = tables.Column(order_by=('first_name', 'last_name'))
```

In this example `-name` and `name` are valid order by aliases. In a querystring you might then have `?order=-name`.

table The traditional concept of a table. i.e. a grid of rows and columns containing data.

view A Django view.

record A single Python object used as the data for a single row.

render The act of serializing a `Table` into HTML.

template A Django template.

table data An interable of *records* that `Table` uses to populate its rows.

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