
Swingtime Documentation

Release 0.2

David Krauth

Apr 11, 2017

1	Table of Contents	1
1.1	Introduction	1
1.1.1	About Swingtime	1
1.1.2	Demo	3
1.1.3	Todo List	3
1.2	models — Swingtime Object Model Definitions	4
1.2.1	Functions	4
1.2.2	Classes	4
1.3	views — Swingtime Views	6
1.3.1	Functions	6
1.4	forms — Swingtime Forms	8
1.4.1	Functions	8
1.4.2	Data	9
1.4.3	Classes	9
1.5	utils — Swingtime Utilities	11
1.5.1	Functions	11
1.5.2	Classes	12
1.6	swingtime_settings — Configuration Settings	12
1.6.1	Settings	12
1.7	Changes in Swingtime	13
1.7.1	Release 0.2 (Decemeber 18, 2008)	13
2	Index	15
	Python Module Index	17

Introduction

About Swingtime

Welcome

Swingtime is a Django application similar to stripped down version of iCal for Mac OS X or Google Calendar. Swingtime provides an *Event* model that act as metadata container for one or more *Occurrence* objects, which describe specific start and end times.

Swingtime relies heavily upon both the `datetime` standard library package and the `dateutil` package, featuring direct support for the `dateutil.rrule` interface to create occurrences.

A fairly simple example:

```
>>> from datetime import *
>>> from swingtime import models as swingtime
>>> et = swingtime.EventType.objects.create(abbr='work', label='Work Related Events')
>>> evt = swingtime.Event.objects.create(
...     title='New TPS Cover Sheet',
...     description='Kiss off, Lumbergh!',
...     event_type=et
... )
>>> evt.add_occurrences(datetime(2008,12,1,16), datetime(2008,12,1,16,15), count=5)
>>> for o in evt.occurrence_set.all():
...     print o
...
New TPS Cover Sheet: 2008-12-01T16:00:00
New TPS Cover Sheet: 2008-12-02T16:00:00
New TPS Cover Sheet: 2008-12-03T16:00:00
New TPS Cover Sheet: 2008-12-04T16:00:00
New TPS Cover Sheet: 2008-12-05T16:00:00
```

A bit more elaborate example, using the the convenience function `models.create_event()`:

```
>>> # pay day is the last Friday of the month at 5pm
>>> evt = swingtime.create_event(
...     'Pay day',
...     ('pay', 'Payroll'), # alternate means to add EventType on the fly
...     freq=rrule.MONTHLY,
...     byweekday=rrule.FR(-1),
...     until=datetime(2009,4,1),
...     start_time=datetime(2008,12,25,17)
... )
>>> for o in evt.occurrence_set.all():
...     print o
...
Pay day: 2008-12-26T17:00:00
Pay day: 2009-01-30T17:00:00
Pay day: 2009-02-27T17:00:00
Pay day: 2009-03-27T17:00:00
```

Features

- Support for adding complex event occurrences via `dateutil`
- Ready-made `MultipleOccurrenceForm` for handling complex input
- Daily, monthly, and annual view functions
- Grid-based daily view generator, complete with alternating or sequential `EventType` CSS-class handling
- Slightly better than average documentation, a few test cases, and commented code
- Active support (I have to eat my own dogfood)
- Built-in demo project / application

Requirements

- Django 1.0+
- Python 2.5+ (yeah, sorry, Swingtime won't work with 2.3 or 2.4, but I use 2.5+ exclusively; however, should anyone like to contribute the necessary backward compatible patches that don't hamstring any of 2.5+ features, I more than willing to include them).
- The `dateutil` package.

Get Swingtime

Options:

- [Swingtime source code](#)
- [Gzipped tarball](#)

Settings

Swingtime has it's settings module (`conf/swingtime_settings.py`) that simulates how each Django project's `setting.py` file functions. You can overwrite any or all of the configuration parameters described in

`swingtime_settings` by creating a file in your own project and referencing that file in your project settings using the name `SWINGTIME_SETTINGS_MODULE`.

For example, from the demo's configuration:

```
SWINGTIME_SETTINGS_MODULE = 'demo.swingtime_settings'
```

Demo

Swingtime comes with its own demo project and application. The demo is themed as a Karate studio's website and allows you see and interact with the Swingtime application.

A live demo can be found at <http://swingtime.gorgeofeternalperil.com> or run locally using the built-in Django development server.

Templates

Currently, Swingtime does not include any templates of its own. The demo project provides some sample templates to use as a guide or starting point.

Sample data

Within the Swingtime demo is an app named `karate`, which defines the custom management command `loaddemo`. This command will pre-populate your initial database with some events and occurrences based upon the current date and time.

Running the demo

If you've checked out from directly from the trunk directory or exploded the latest version tarball, you run the demo from anywhere by changing to the `demo` directory and running:

```
$ python manage.py loaddemo
$ python manage.py runserver
```

Todo List

- Add i18n support / translation support in demo
- Include a setup installer (I'm not doing `easy_install!`)
- Add weekly view
- Import and export `.ics` files
- Add *Note* support to demo
- Add more tests
- Port over to github

models — Swingtime Object Model Definitions

Functions

`create_event`

`models.create_event` (*title*, *event_type* [, *description*, *start_time*, *end_time*, *note*, ****rrule_params**])

Convenience function to create an *Event*, optionally create an *EventType*, and associated *Occurrence* instances. *Occurrence* creation rules match those for *Event.add_occurrences()*.

Returns the newly created *Event* instance.

Parameters

event_type can be either an *EventType* object or 2-tuple of (abbreviation, label), from which an *EventType* is either created or retrieved.

description sets the event's description if not None

start_time will default to the current hour if None

end_time will default to **start_time** plus *swingtime_settings.DEFAULT_OCCURRENCE_DURATION* hour if None

note if not None, add a Note instance to the new event

rrule_params follows the dateutils API (see <http://labix.org/python-dateutil>)

Example:

```
from datetime import datetime, time
from swingtime import models as swingtime
from dateutil import rrule

event = swingtime.create_event(
    'Beginner Class',
    ('bgn', 'Beginner Classes'),
    description='Open to all beginners',
    start_time=datetime.combine(datetime.now().date(), time(19)),
    count=6,
    byweekday=(rrule.MO, rrule.WE, rrule.FR)
)
```

Classes

Note

class `models.Note` (*django.db.models.Model*)

A generic model for adding simple, arbitrary notes to other models such as *Event* or *Occurrence*.

note
`models.TextField`

created
`models.DateTimeField`

EventType

class `models.EventType` (*django.db.models.Model*)
Simple Event classification.

abbr
`models.CharField`

label
`models.CharField`

Event

class `models.Event` (*django.db.models.Model*)
Container model for general metadata and associated Occurrence entries.

title
`models.CharField`

description
`models.CharField`

event_type
`models.ForeignKey` for EventType

notes
`generic.GenericRelation` for Note

get_absolute_url ()
return ('swingtime-event', [str(self.id)])

add_occurrences (*start_time, end_time* [, ***rrule_params*])
Add one or more occurrences to the event using a comparable API to `dateutil.rrule`.
If `rrule_params` does not contain a `freq`, one will be defaulted to `rrule.DAILY`.

Because `rrule.rrule` returns an iterator that can essentially be unbounded, we need to slightly alter the expected behavior here in order to enforce a finite number of occurrence creation.

If both `count` and `until` entries are missing from `rrule_params`, only a single Occurrence instance will be created using the exact `start_time` and `end_time` values.

upcoming_occurrences ()
Return all occurrences that are set to start on or after the current time.

next_occurrence ()
Return the single occurrence set to start on or after the current time if available, otherwise None.

daily_occurrences (*[dt]*)
Convenience method wrapping `Occurrence.objects.daily_occurrences`.

OccurrenceManager

class `models.OccurrenceManager` (*models.Manager*)

daily_occurrences (*[dt, event]*)
Returns a queryset of for instances that have any overlap with a particular day.
Parameters

dt may be either a `datetime.datetime`, `datetime.date` object, or `None`. If `None`, default to the current day

event can be an `Event` instance for further filtering

Occurrence

```
class models.Occurrence (django.db.models.Model)
    Represents the start end time for a specific occurrence of a master Event object.

    start_time
        models.DateTimeField

    end_time
        models.DateTimeField

    event
        models.ForeignKey - a non-editable Event object

    notes
        generic.GenericRelation Note

    get_absolute_url ()
        'swingtime-occurrence', [str(self.event.id), str(self.id)]

    __cmp__ ()
        Compare two Occurrence start times

    title
        Shortcut for the occurrence's Event.title

    event_type
        Shortcut for the occurrence's EventType
```

views — Swingtime Views

Functions

event_listing

```
views.event_listing (request[, template='swingtime/event_list.html', events=None, **extra_context
])
```

View all events.

If `events` is a queryset, clone it. If `None` default to all `Event` objects.

Context parameters:

events an iterable of `Event` objects

extra_context extra variables passed to the template context

event_view

```
views.event_view (request, pk[, template='swingtime/event_detail.html',
event_form_class=forms.EventForm, recurrence_form_class=forms.MultipleOccurrenceForm
])
```

View an `Event` instance and optionally update either the event or its occurrences.

Context parameters:

event the event keyed by pk

event_form a form object for updating the event

recurrence_form a form object for adding occurrences

`occurrence_view`

`views.occurrence_view(request, event_pk, pk[, template='swingtime/occurrence_detail.html', form_class=forms.SingleOccurrenceForm])`

View a specific occurrence and optionally handle any updates.

Context parameters:

occurrence the occurrence object keyed by pk

form a form object for updating the occurrence

`add_event`

`views.add_event(request[, template='swingtime/add_event.html', event_form_class=forms.EventForm, recurrence_form_class=forms.MultipleOccurrenceForm])`

Add a new Event instance and 1 or more associated Occurrence instances.

Context parameters:

dtstart a datetime.datetime object representing the GET request value if present, otherwise None

event_form a form object for updating the event

recurrence_form a form object for adding occurrences

`_datetime_view`

`views._datetime_view(request, template, dt[, timeslot_factory=None, items=None, params=None])`

Build a time slot grid representation for the given datetime dt. See `utils.create_timeslot_table` documentation for items and params.

Context parameters:

day the specified datetime value (dt)

next_day day + 1 day

prev_day day - 1 day

timeslots time slot grid of (time, cells) rows

`day_view`

`views.day_view(request, year, month, day[, template='swingtime/daily_view.html', **params])`

See documentation for function “`_datetime_view`”.

today_view

`views.today_view(request[, template='swingtime/daily_view.html', **params])`
See documentation for function “`_datetime_view`”.

year_view

`views.year_view(request, year[, template='swingtime/yearly_view.html', queryset=None])`
Context parameters:

year an integer value for the year in question

next_year year + 1

last_year year - 1

by_month a sorted list of (month, occurrences) tuples where month is a `datetime.datetime` object for the first day of a month and occurrences is a (potentially empty) list of values for that month. Only months which have at least 1 occurrence is represented in the list

month_view

`views.month_view(request, year, month[, template='swingtime/monthly_view.html', queryset=None])`
Render a traditional calendar grid view with temporal navigation variables.

Context parameters:

today the current `datetime.datetime` value

calendar a list of rows containing (day, items) cells, where day is the day of the month integer and items is a (potentially empty) list of occurrence for the day

this_month a `datetime.datetime` representing the first day of the month

next_month this_month + 1 month

last_month this_month - 1 month

forms — Swingtime Forms

Convenience forms for adding and updating Event and Occurrence objects.

Functions

timeslot_options

`forms.timeslot_options([interval=swingtime_settings.TIMESLOT_INTERVAL,
start_time=swingtime_settings.TIMESLOT_START_TIME,
end_delta=swingtime_settings.TIMESLOT_END_TIME_DURATION,
fmt=swingtime_settings.TIMESLOT_TIME_FORMAT])`

Create a list of time slot options for use in swingtime forms.

The list is comprised of 2-tuples containing a 24-hour time value and a 12-hour temporal representation of that offset.

timeslot_offset_options

```
forms.timeslot_offset_options ([interval=swingtime_settings.TIMESLOT_INTERVAL,
                               start_time=swingtime_settings.TIMESLOT_START_TIME,
                               end_delta=swingtime_settings.TIMESLOT_END_TIME_DURATION,
                               fmt=swingtime_settings.TIMESLOT_TIME_FORMAT ])
```

Create a list of time slot options for use in swingtime forms.

The list is comprised of 2-tuples containing the number of seconds since the start of the day and a 12-hour temporal representation of that offset.

Data**default_timeslot_options**

```
forms.default_timeslot_options
defaults to timeslot_options ()
```

default_timeslot_offset_options

```
forms.default_timeslot_offset_options
defaults to timeslot_offset_options ()
```

Classes**MultipleIntegerField**

```
class forms.MultipleIntegerField (django.forms.MultipleChoiceField)
```

A form field for handling multiple integers.

```
def __init__(self, choices, size=None, label=None, widget=None):
```

```
    if widget is None: widget = forms.SelectMultiple(attrs={'size' : size or len(choices)})
```

SplitDateTimeWidget

```
class forms.SplitDateTimeWidget (django.forms.MultiWidget)
```

A Widget that splits datetime input into a SelectDateWidget for dates and Select widget for times.

```
__init__ (attrs=None)
```

```
uses widgets SelectDateWidget and forms.Select (choices=default_timeslot_options)
```

MultipleOccurrenceForm

```
class forms.MultipleOccurrenceForm (django.forms.Form)
```

```
day
```

```
forms.DateField
```

```
start_time_delta
```

```
forms.IntegerField
```

```
end_time_delta
    forms.IntegerField

repeats
    forms.ChoiceField

count
    forms.IntegerField

until
    forms.DateField

freq
    forms.IntegerField

interval
    forms.IntegerField

week_days
    MultipleIntegerField

month_ordinal
    forms.IntegerField

month_ordinal_day
    forms.IntegerField

each_month_day = MultipleIntegerField(
year_months
    MultipleIntegerField

is_year_month_ordinal
    forms.BooleanField(required=False)

year_month_ordinal
    forms.IntegerField(widget=forms.Select(choices=ORDINAL))

year_month_ordinal_day
    forms.IntegerField(widget=forms.Select(choices=WEEKDAY_LONG))

__init__ ([*args, **kws ])
    if initial contains dtstart - a datetime.datetime instance - the appropriate unspecified
    initial will be defaulted for the form.

clean ()
    populates cleaned_data with start_time and end_time values

save (event) :
    Returns an Event object
```

EventForm

```
class forms.EventForm (django.forms.ModelForm)
    A simple form for adding and updating Event attributes
```

SingleOccurrenceForm

```
class forms.SingleOccurrenceForm (django.forms.ModelForm)
    A simple form for adding and updating single Occurrence attributes
```

utils — Swingtime Utilities

Common features and functions for swingtime

Functions

`html_mark_safe`

`utils.html_mark_safe` (*func*)

Decorator for functions return strings that should be treated as template safe.

`time_delta_total_seconds`

`utils.time_delta_total_seconds` (*time_delta*)

Calculate the total number of seconds represented by a `datetime.timedelta` object

`month_boundaries`

`utils.month_boundaries` (*[dt=None]*)

Return a 2-tuple containing the `datetime` instances for the first and last dates of the current month or using `dt` as a reference.

`css_class_cycler`

`utils.css_class_cycler` ()

Return a dictionary keyed by *EventType* abbreviations, whose values are an iterable or cycle of CSS class names.

`create_timeslot_table`

`utils.create_timeslot_table` (*[dt=None, items=None, start_time=swingtime_settings.TIMESLOT_START_TIME, end_time_delta=swingtime_settings.TIMESLOT_END_TIME_DURATION, time_delta=swingtime_settings.TIMESLOT_INTERVAL, min_columns=swingtime_settings.TIMESLOT_MIN_COLUMNS, css_class_cycles=css_class_cycler, proxy_class=DefaultOccurrenceProxy]*)

Create a grid-like object representing a sequence of times (rows) and columns where cells are either empty or reference a wrapper object for event occasions that overlap a specific time slot.

Currently, there is an assumption that if an occurrence has a `start_time` that falls with the temporal scope of the grid, then that `start_time` will also match an interval in the sequence of the computed row entries.

dt a `datetime.datetime` instance or `None` to default to `now`

items a queryset or sequence of *Occurrence* instances. If `None`, default to the daily occurrences for `dt`

start_time a `datetime.time` instance, defaulting to `swingtime_settings.TIMESLOT_START_TIME`

end_time_delta a `datetime.timedelta` instance, defaulting to `swingtime_settings.TIMESLOT_END_TIME_DURATION`

time_delta a `datetime.timedelta` instance, defaulting to `swingtime_settings.TIMESLOT_INTERVAL`

min_column the minimum number of columns to show in the table, defaulting to `swingtime_settings.TIMESLOT_MIN_COLUMNS`

css_class_cycles if not `None`, a callable returning a dictionary keyed by desired `EventType` abbreviations with values that iterate over progressive CSS class names for the particular abbreviation; defaults to `css_class_cycler()`

proxy_class a wrapper class for accessing an `Occurrence` object, which should also expose `event_type` and `event_class` attrs, and handle the custom output via its `__unicode__` method; defaults to `DefaultOccurrenceProxy`

Classes

BaseOccurrenceProxy

class `utils.BaseOccurrenceProxy` (*object*)

A simple wrapper class for handling the representational aspects of an `Occurrence` instance.

DefaultOccurrenceProxy

class `utils.DefaultOccurrenceProxy` (*BaseOccurrenceProxy*)

Through the `__unicode__` method, outputs a **safe** string anchor tag for the `Occurrence` instance, followed by simple token placeholders to represent additional slot fillings.

swingtime_settings — Configuration Settings

Settings

`swingtime_settings.TIMESLOT_TIME_FORMAT`

A “strftime” string for formatting start and end time selectors in forms. The default format is:

```
'%I:%M %p'
```

`swingtime_settings.TIMESLOT_INTERVAL`

Used for creating start and end time form selectors as well as time slot grids. Value should be `datetime.timedelta` value representing the incremental differences between temporal options. The default is:

```
``datetime.timedelta(minutes=15)``
```

`swingtime_settings.TIMESLOT_START_TIME`

A `datetime.time` value indicating the starting time for time slot grids and form selectors. The default is:

```
``datetime.time(9)``
```

`swingtime_settings.TIMESLOT_END_TIME_DURATION`

A `datetime.timedelta` value indicating the offset value from `TIMESLOT_START_TIME` for creating time slot grids and form selectors. The purpose for using a time delta is that it possible to span dates. For instance, one could have a starting time of 3pm (15:00) and wish to indicate a ending value 1:30am (01:30), in which case a value of `datetime.timedelta(hours=10.5)` could be specified to indicate that the 1:30 represents the following date’s time and not the current date. Default:


```
``datetime.timedelta(hours=+8)``
```

`swingtime_settings.TIMESLOT_MIN_COLUMNS`

Indicates a minimum value (default: 4) for the number grid columns to be shown in the time slot table.

`swingtime_settings.DEFAULT_OCCURRENCE_DURATION`

Indicate the default length in time for a new occurrence, specified by using a `datetime.timedelta` object, defaulting to:

```
``datetime.timedelta(hours=+1)``
```

`swingtime_settings.CALENDAR_FIRST_WEEKDAY`

If not None, passed to `calendar.setfirstweekday` function. Default: 6

Changes in Swingtime

Release 0.2 (Decemeber 18, 2008)

- First public release.

CHAPTER 2

Index

- genindex
- modindex
- search

f

forms, 8

m

models, 4

s

swingtime_settings, 12

u

utils, 11

v

views, 6

Symbols

`__cmp__()` (models.Occurrence method), 6
`__init__()` (forms.MultipleOccurrenceForm method), 10
`__init__()` (forms.SplitDateTimeWidget method), 9
`_datetime_view()` (in module views), 7

A

`abbr` (models.EventType attribute), 5
`add_event()` (in module views), 7
`add_occurrences()` (models.Event method), 5

B

`BaseOccurrenceProxy` (class in utils), 12

C

`CALENDAR_FIRST_WEEKDAY` (in module `swingtime_settings`), 13
`clean()` (forms.MultipleOccurrenceForm method), 10
`count` (forms.MultipleOccurrenceForm attribute), 10
`create_event()` (in module models), 4
`create_timeslot_table()` (in module utils), 11
`created` (models.Note attribute), 4
`css_class_cycler()` (in module utils), 11

D

`daily_occurrences()` (models.Event method), 5
`daily_occurrences()` (models.OccurrenceManager method), 5
`day` (forms.MultipleOccurrenceForm attribute), 9
`day_view()` (in module views), 7
`DEFAULT_OCCURRENCE_DURATION` (in module `swingtime_settings`), 13
`default_timeslot_offset_options` (in module forms), 9
`default_timeslot_options` (in module forms), 9
`DefaultOccurrenceProxy` (class in utils), 12
`description` (models.Event attribute), 5

E

`end_time` (models.Occurrence attribute), 6

`end_time_delta` (forms.MultipleOccurrenceForm attribute), 9

`Event` (class in models), 5
`event` (models.Occurrence attribute), 6
`event_listing()` (in module views), 6
`event_type` (models.Event attribute), 5
`event_type` (models.Occurrence attribute), 6
`event_view()` (in module views), 6
`EventForm` (class in forms), 10
`EventType` (class in models), 5

F

`forms` (module), 8
`freq` (forms.MultipleOccurrenceForm attribute), 10

G

`get_absolute_url()` (models.Event method), 5
`get_absolute_url()` (models.Occurrence method), 6

H

`html_mark_safe()` (in module utils), 11

I

`interval` (forms.MultipleOccurrenceForm attribute), 10
`is_year_month_ordinal` (forms.MultipleOccurrenceForm attribute), 10

L

`label` (models.EventType attribute), 5

M

`models` (module), 4
`month_boundaries()` (in module utils), 11
`month_ordinal` (forms.MultipleOccurrenceForm attribute), 10
`month_ordinal_day` (forms.MultipleOccurrenceForm attribute), 10
`month_view()` (in module views), 8
`MultipleIntegerField` (class in forms), 9

MultipleOccurrenceForm (class in forms), 9

N

next_occurrence() (models.Event method), 5

Note (class in models), 4

note (models.Note attribute), 4

notes (models.Event attribute), 5

notes (models.Occurrence attribute), 6

O

Occurrence (class in models), 6

occurrence_view() (in module views), 7

OccurrenceManager (class in models), 5

R

repeats (forms.MultipleOccurrenceForm attribute), 10

S

SingleOccurrenceForm (class in forms), 10

SplitDateTimeWidget (class in forms), 9

start_time (models.Occurrence attribute), 6

start_time_delta (forms.MultipleOccurrenceForm attribute), 9

swingtime_settings (module), 12

T

time_delta_total_seconds() (in module utils), 11

TIMESLOT_END_TIME_DURATION (in module swingtime_settings), 12

TIMESLOT_INTERVAL (in module swingtime_settings), 12

TIMESLOT_MIN_COLUMNS (in module swingtime_settings), 13

timeslot_offset_options() (in module forms), 9

timeslot_options() (in module forms), 8

TIMESLOT_START_TIME (in module swingtime_settings), 12

TIMESLOT_TIME_FORMAT (in module swingtime_settings), 12

title (models.Event attribute), 5

title (models.Occurrence attribute), 6

today_view() (in module views), 8

U

until (forms.MultipleOccurrenceForm attribute), 10

upcoming_occurrences() (models.Event method), 5

utils (module), 11

V

views (module), 6

W

week_days (forms.MultipleOccurrenceForm attribute), 10

Y

year_month_ordinal (forms.MultipleOccurrenceForm attribute), 10

year_month_ordinal_day (forms.MultipleOccurrenceForm attribute), 10

year_months (forms.MultipleOccurrenceForm attribute), 10

year_view() (in module views), 8