
Flask-Diced Documentation

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Flask-Diced is a set of helper classes for [Flask](#) that generates CRUD views and registers them to blueprint/application.

Flask-Diced provides:

- **Detail view**
- **Index view**
- **Create view**
- **Edit view**
- **Delete view**

Flask-Diced Might Not Be What You Want

Flask-Diced is opinionated, it assumes:

- the model object has a `save` method for data persistence and `delete` method to remove itself.
- the model can be created with no required arguments.
- the form used for creation and editing are in the style of `Flask-WTF`'s, specifically, Flask-Diced expects the form accepts a named parameter `obj` to pass in the initial value for editing as well as `validate_on_submit` method and `populate_obj` method on the form class. In short, just use *Flask-WTF*.
- the client should be redirected when done for POST requests.
- views should have minimal business logic.

Flask-Diced is Extensible

Flask-Diced is designed in a way that customizations can be easily done. All properties and methods can be overridden for customization.

Flask-Diced can be customized to the point that the assumptions described in last section are refer to the default implementation and will no longer hold true if you customize relevant parts of it.

e.g.,

Want to change how the objects list is fetched?

Override `query_all()`

Want to change the name of endpoint of the edit view?

Redefine `edit_endpoint`

Want to use your own view function or control how views are registered?

Override respective view/register methods.

Installation

Flask-Diced is on PyPI.

```
pip install Flask-Diced
```

License

BSD New, see LICENSE for details.

Links

- [Documentation](#)
- [Issue Tracker](#)
- [Source Package @ PyPI](#)
- [Mercurial Repository @ bitbucket](#)
- [Git Repository @ Github](#)
- [Git Repository @ Gitlab](#)
- [Development Version](#)

Example

The python code of an example application is included entirely here.

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
from flask import Flask
from flask.ext.sqlalchemy import SQLAlchemy
from flask.ext.wtf import Form
from wtforms import TextField, SubmitField
from wtforms.fields.html5 import EmailField
from wtforms.validators import DataRequired, Email, ValidationError

from flask.ext.diced import Diced, persistence_methods

app = Flask(__name__)

# Need this for WTForm CSRF protection
app.config['SECRET_KEY'] = 'no one knows'

# Need this for SQLAlchemy
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///memory:'

db = SQLAlchemy(app)

# persistence_methods is a class decorator that adds save and delete methods
@persistence_methods(db)
class User(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    username = db.Column(db.String(80), unique=True)
    email = db.Column(db.String(120), unique=True)

def unique(model, column, message='already exists'):
    def unique_validator(form, field):
        obj = model.query.filter(column == field.data).first()
        if obj and obj.id != form._obj_id:
            raise ValidationError(message)
    return unique_validator

class UserForm(Form):
    username = TextField('Username',
```

```

        [DataRequired(), unique(User, User.username)])
    email = EmailField('Email',
        [DataRequired(), Email(), unique(User, User.email)])

    def __init__(self, **kwargs):
        super(UserForm, self).__init__(**kwargs)
        self._obj_id = kwargs['obj'].id if 'obj' in kwargs else None

class CreateUserForm(UserForm):
    submit = SubmitField('Create')

class EditUserForm(UserForm):
    submit = SubmitField('Update')

class DeleteForm(Form):
    submit = SubmitField('Delete')

# view decorator that does nothing, for showing how to add decorators to views
def no_op_decorator(view):
    return view

# create a view generator for User model, these two arguments for decorators
# are here for demonstration purpose and are not mandatory
user_view = Diced(
    model=User,
    create_form_class=CreateUserForm,
    edit_form_class=EditUserForm,
    delete_form_class=DeleteForm,
    index_decorators=[no_op_decorator],
    edit_decorators=[no_op_decorator, no_op_decorator],
)

# Register on application directly, works on Blueprint as well
user_view.register(app)

if __name__ == '__main__':
    db.create_all()
    app.run(debug=True)

```

In this example, *Diced* is used directly and required attributes are passed in when creating an instance of the class, another way is to subclass and define required attributes as class attributes, as in:

```

class UserView(Diced):
    model = User
    create_form_class = CreateUserForm
    edit_form_class = EditUserForm
    delete_form_class = DeleteForm

user_view = UserView()
user_view.register(app)

```

Flask-Diced - CRUD views generator for Flask

class flask_diced.**Detail**

Bases: object

detail view mixin

detail_decorators = ()

decorators to be applied to detail view

detail_endpoint = 'detail'

the endpoint for the detail view URL rule

detail_rule = '/<int:pk>/'

the URL rule for the detail view

detail_template

default template name for detail view

generated with *object_name* and *detail_endpoint*

detail_view (*pk*)

detail view function

Parameters *pk* – the primary key of the model to be shown.

register_detail_view (*blueprint*)

register detail view to blueprint

Parameters *blueprint* – the Flask Blueprint or Application object to which the detail view will be registered.

class flask_diced.**Index**

Bases: object

index view mixin

index_decorators = ()

decorators to be applied to index view

index_endpoint = 'index'

the endpoint for the index view URL rule

index_rule = '/'

the URL rule for the index view

index_template

default template name for index view

generated with *object_name* and *index_endpoint*

index_view()

index view function

register_index_view(*blueprint*)

register index view to blueprint

Parameters *blueprint* – the Flask Blueprint or Application object to which the index view will be registered.

class flask_diced.Create

Bases: object

create view mixin

create_decorators = ()

decorators to be applied to create view

create_endpoint = 'create'

the endpoint for the create view URL rule

create_flash_message = None

the message to be flashed for the next request when done

create_form_class = None

the form class for new object, with Flask-WTF compatible API

create_form_name = 'form'

the name for variable representing the form in template

create_redirect_to_view = 'index'

the name of view to redirect the client to when done

create_redirect_url

the url the client will be redirected to when done

the default value is the url of *create_redirect_to_view*

create_rule = '/create/'

the URL rule for the create view

create_template

default template name for create view

generated with *object_name* and *create_endpoint*

create_view()

create view function

register_create_view(*blueprint*)

register create view to blueprint

Parameters *blueprint* – the Flask Blueprint or Application object to which the create view will be registered.

class flask_diced.Edit

Bases: object

edit view mixin

edit_decorators = ()

decorators to be applied to edit view

edit_endpoint = 'edit'
the endpoint for the edit view URL rule

edit_flash_message = None
the message to be flashed for the next request when done

edit_form_class = None
the form class for editing object, with Flask-WTF compatible API

edit_form_name = 'form'
the name for variable representing the form in template

edit_redirect_to_view = '.index'
the name of view to redirect the client to when done

edit_redirect_url
the url the client will be redirected to when done
the default value is the url of *edit_redirect_to_view*

edit_rule = '/<int:pk>/edit/'
the URL rule for the edit view

edit_template
default template name for edit view
generated with *object_name* and *edit_endpoint*

edit_view (*pk*)
edit view function

Parameters **pk** – the primary key of the model to be edited.

register_edit_view (*blueprint*)
register edit view to blueprint

Parameters **blueprint** – the Flask Blueprint or Application object to which the edit view will be registered.

class flask_diced.Delete

Bases: object

delete view mixin

delete_decorators = ()
decorators to be applied to delete view

delete_endpoint = 'delete'
the endpoint for the delete view URL rule

delete_flash_message = None
the message to be flashed for the next request when done

delete_form_class = None
the form class for deletion confirmation, should validate if confirmed

delete_form_name = 'form'
the name for variable representing the form in template

delete_redirect_to_view = '.index'
the name of view to redirect the client to when done

delete_redirect_url
the url the client will be redirected to when done

the default value is the url of `delete_redirect_to_view`

delete_rule = `'/<int:pk>/delete/'`
the URL rule for the delete view

delete_template
default template name for delete view
generated with `object_name` and `delete_endpoint`

delete_view (*pk*)
delete view function

Parameters **pk** – the primary key of the model to be deleted.

register_delete_view (*blueprint*)
register delete view to blueprint

Parameters **blueprint** – the Flask Blueprint or Application object to which the delete view will be registered.

class `flask_diced.Base` (***options*)
Bases: `object`
base class with properties and methods used by mixins

__init__ (***options*)
create an instance of view generator
all keyword arguments passed in will be set as the instance's attribute if the name is not starting with `'_'`

exclude_views = `set([])`
views that will not be registered when `register()` is called, even if they are also listed in `views`

model = `None`
the model class

object_list_name
default name for variable representing list of objects in templates
generated with `object_name` in default implementation.

object_name
default name for variable representing object in templates
generated with the name of model class in default implementation.

query_all ()
returns all objects

query_object (*pk*)
returns the object with matching `pk`

register (*blueprint*)
register all enabled views to the blueprint

Parameters **blueprint** – the Flask Blueprint or Application object to which enabled views will be registered.

views = `set(['edit', 'index', 'create', 'detail', 'delete'])`
views that will be registered when `register()` is called

class `flask_diced.Diced` (***options*)
Bases: `flask_diced.Detail`, `flask_diced.Index`, `flask_diced.Create`,
`flask_diced.Edit`, `flask_diced.Delete`, `flask_diced.Base`

CRUD views generator

`flask_diced.persistence_methods` (*datastore*)

class decorator that adds persistence methods to the model class

Parameters `datastore` – SQLAlchemy style datastore, should support
`datastore.session.add()`, `datastore.session.delete()` and
`datastore.session.commit()` for model persistence.

Two persistence methods will be added to the decorated class

`save(self, commit=True)` the save method

`delete(self, commit=True)` the delete method

Changelog

8.1 Version 0.1

- Initial public release

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