Flask-MongoEngine Documentation

Release 1.0.0

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Contents

A Flask extension that provides integration with MongoEngine. For more information on MongoEngine please check out the MongoEngine Documentation.

It handles connection management for your app. You can also use WTForms as model forms for your models.

CHAPTER 1

Pre-requisite

Make sure you have *wheel* installed:

```
pip install wheel
```

CHAPTER 2

Installing Flask-MongoEngine

Install with **pip**:

```
pip install flask-mongoengine
```

CHAPTER 3

Configuration

Basic setup is easy, just fetch the extension:

```
from flask import Flask
from flask_mongoengine import MongoEngine

app = Flask(__name__)
app.config.from_pyfile('the-config.cfg')
db = MongoEngine(app)
```

Or, if you are setting up your database before your app is initialized, as is the case with application factories:

```
from flask import Flask
from flask_mongoengine import MongoEngine
db = MongoEngine()
...
app = Flask(__name__)
app.config.from_pyfile('the-config.cfg')
db.init_app(app)
```

By default, Flask-MongoEngine assumes that the *mongod* instance is running on **localhost** on port **27017**, and you wish to connect to the database named **test**.

If MongoDB is running elsewhere, you should provide the *host* and *port* settings in the *'MONGODB_SETTINGS'* dictionary wih *app.config*.:

```
app.config['MONGODB_SETTINGS'] = {
    'db': 'project1',
    'host': '192.168.1.35',
    'port': 12345
}
```

If the database requires authentication, the *username* and *password* arguments should be provided *'MONGODB_SETTINGS'* dictionary wih *app.config*.:

```
app.config['MONGODB_SETTINGS'] = {
    'db': 'project1',
    'username':'webapp',
    'password':'pwd123'
}
```

Uri style connections are also supported, just supply the uri as the *host* in the *'MONGODB_SETTINGS'* dictionary with *app.config*. **Note that database name from uri has priority over name.** If uri presents and doesn't contain database name db setting entirely ignore and db name set to 'test'.

```
app.config['MONGODB_SETTINGS'] = {
    'db': 'project1',
    'host': 'mongodb://localhost/database_name'
}
```

Connection settings may also be provided individually by prefixing the setting with *'MONGODB_'* in the *app.config*.:

```
app.config['MONGODB_DB'] = 'project1'
app.config['MONGODB_HOST'] = '192.168.1.35'
app.config['MONGODB_PORT'] = 12345
app.config['MONGODB_USERNAME'] = 'webapp'
app.config['MONGODB_PASSWORD'] = 'pwd123'
```

By default flask-mongoengine open the connection when extension is instanciated but you can configure it to open connection only on first database access by setting the `MONGODB_SETTINGS['connect']` parameter or its `MONGODB_CONNECT` flat equivalent to `False`:

```
app.config['MONGODB_SETTINGS'] = {
    'host': 'mongodb://localhost/database_name',
    'connect': False,
}
# or
app.config['MONGODB_CONNECT'] = False
```

CHAPTER 4

Custom Queryset

flask-mongoengine attaches the following methods to Mongoengine's default QuerySet:

- **get_or_404**: works like .get(), but calls abort(404) if the object DoesNotExist. Optional arguments: *message* - custom message to display.
- **first_or_404**: same as above, except for .first(). Optional arguments: *message* - custom message to display.
- **paginate**: paginates the QuerySet. Takes two arguments, *page* and *per_page*.
- **paginate_field**: paginates a field from one document in the QuerySet. Arguments: *field_name*, *doc_id*, *page*, *per_page*.

Examples:

```
# 404 if object doesn't exist
def view_todo(todo_id):
    todo = Todo.objects.get_or_404(_id=todo_id)
..

# Paginate through todo
def view_todos(page=1):
    paginated_todos = Todo.objects.paginate(page=page, per_page=10)

# Paginate through tags of todo
def view_todo_tags(todo_id, page=1):
    todo = Todo.objects.get_or_404(_id=todo_id)
    paginated_tags = todo.paginate_field('tags', page, per_page=10)
```

Properties of the pagination object include: iter_pages, next, prev, has_next, has_prev, next_num, prev_num.

In the template:

```
{# Display a page of todos #}
<ul>
    {% for todo in paginated_todos.items %}
        <li>{{ todo.title }}</li>
```

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```
    {% endfor %}
</ul>

{# Macro for creating navigation links #}
{% macro render_navigation(pagination, endpoint) %}
  <div class=pagination>
  {% for page in pagination.iter_pages() %}
    {% if page %}
      {% if page != pagination.page %}
        <a href="{{ url_for(endpoint, page=page) }}">{{ page }}</a>
      {% else %}
        <strong>{{ page }}</strong>
      {% endif %}
    {% else %}
      <span class=ellipsis>...</span>
    {% endif %}
  {% endfor %}
  </div>
{% endmacro %}

{{ render_navigation(paginated_todos, 'view_todos') }}
```

CHAPTER 5

MongoEngine and WTForms

flask-mongoengine automatically generates WTForms from MongoEngine models:

```
from flask_mongoengine.wtf import model_form

class User(db.Document):
    email = db.StringField(required=True)
    first_name = db.StringField(max_length=50)
    last_name = db.StringField(max_length=50)

class Content(db.EmbeddedDocument):
    text = db.StringField()
    lang = db.StringField(max_length=3)

class Post(db.Document):
    title = db.StringField(max_length=120, required=True, validators=[validators.
↪InputRequired(message='Missing title.'),])
    author = db.ReferenceField(User)
    tags = db.ListField(db.StringField(max_length=30))
    content = db.EmbeddedDocumentField(Content)

PostForm = model_form(Post)

def add_post(request):
    form = PostForm(request.POST)
    if request.method == 'POST' and form.validate():
        # do something
        redirect('done')
    return render_template('add_post.html', form=form)
```

For each MongoEngine field, the most appropriate WTForm field is used. Parameters allow the user to provide hints if the conversion is not implicit:

```
PostForm = model_form(Post, field_args={'title': {'textarea': True}})
```

Supported parameters:

For fields with *choices*:

- *multiple* to use a SelectMultipleField
- *radio* to use a RadioField

For *StringField*:

- *password* to use a PasswordField
- *textarea* to use a TextAreaField

For *ListField*:

- *min_entries* to set the minimal number of entries

(By default, a StringField is converted into a TextAreaField if and only if it has no max_length.)

5.1 Supported fields

- StringField
- BinaryField
- URLField
- EmailField
- IntField
- FloatField
- DecimalField
- BooleanField
- DateTimeField
- **ListField** (using wtforms.fields.FieldList)
- SortedListField (duplicate ListField)
- **EmbeddedDocumentField** (using wtforms.fields.FormField and generating inline Form)
- **ReferenceField** (using wtforms.fields.SelectFieldBase with options loaded from QuerySet or Document)
- DictField

5.2 Not currently supported field types:

- ObjectIdField
- GeoLocationField
- GenericReferenceField

CHAPTER 6

Session Interface

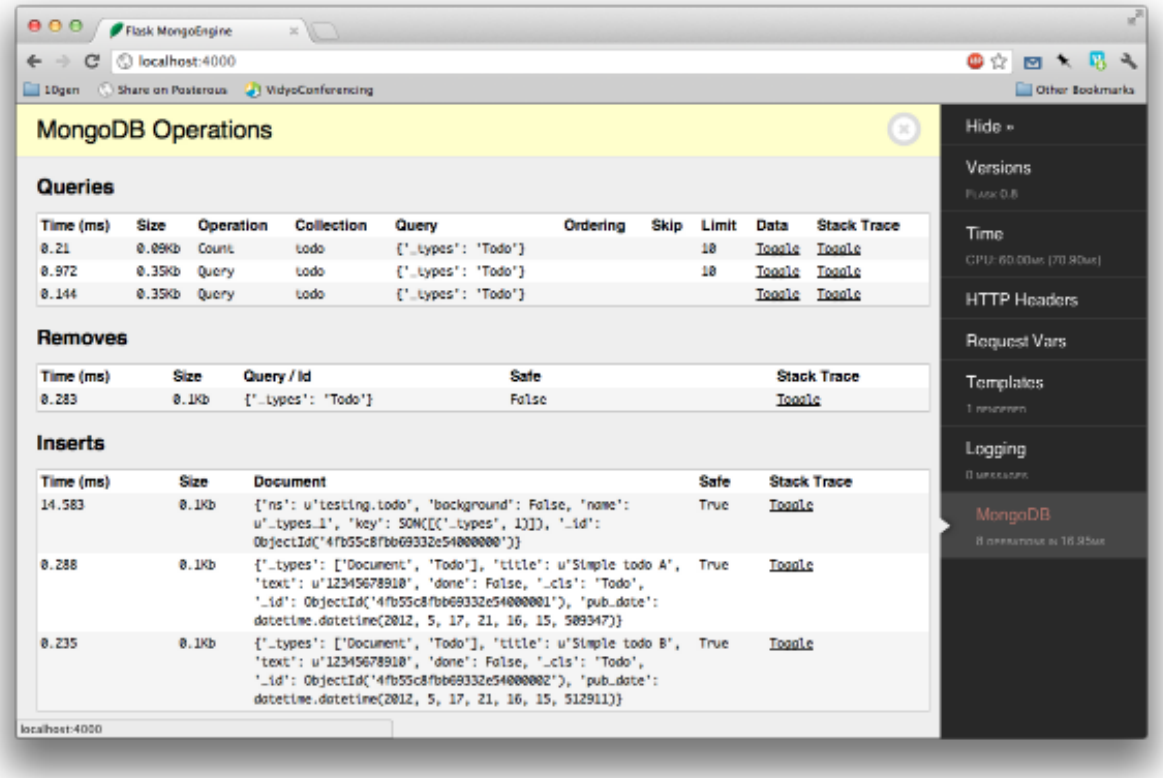
To use MongoEngine as your session store simple configure the session interface:

```
from flask_mongoengine import MongoEngine, MongoEngineSessionInterface

app = Flask(__name__)
db = MongoEngine(app)
app.session_interface = MongoEngineSessionInterface(db)
```

CHAPTER 7

Debug Toolbar Panel



If you use the Flask-DebugToolbar you can add *'flask_mongoengine.panels.MongoDebugPanel'* to the *DEBUG_TB_PANELS* config list and then it will automatically track your queries:

```
from flask import Flask
```

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```
from flask_debugtoolbar import DebugToolbarExtension

app = Flask(__name__)
app.config['DEBUG_TB_PANELS'] = ['flask_mongoengine.panels.MongoDebugPanel']
db = MongoEngine(app)
toolbar = DebugToolbarExtension(app)
```

CHAPTER 8

Upgrading

8.1 0.6 to 0.7

ListFieldPagination order of arguments have been changed to be more logical:

```
# Old order
ListFieldPagination(self, queryset, field_name, doc_id, page, per_page, total)

# New order
ListFieldPagination(self, queryset, doc_id, field_name, page, per_page, total)
```

CHAPTER 9

Credits

Inspired by two repos:

danjac maratfm