
yadm

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It's small and simple ODM for use with MongoDB.

Requirements

YAMD support MongoDB version 3.x only. MongoDB 2.x is not supported.

Minimal version of python is 3.4.

Quick start

```
import pymongo
from yadm import Database, Document, fields

# Create model
class BlogPost(Document):
    __collection__ = 'blog_posts'

    title = fields.StringField()
    body = fields.StringField()

# Create post
post = BlogPost()
post.title = 'Small post'
post.body = 'Bla-bla-bla...'

# Connect to database
client = pymongo.MongoClient("localhost", 27017)
db = Database(client, 'test')

# Insert post to database
db.insert(post)

# Query posts
qs = db.get_queryset(BlogPost).find({'title': {'$regex': '^s.*'}})
assert qs.count() > 0

for post in qs:
    assert post.title.startswith('s')

# Query one post
post = db.get_queryset(BlogPost).find_one({'title': 'Small post'})

# Change post
post.title = 'Bla-bla-bla title'

# Save changed post
db.save(post)
```

2.1 CHANGES

2.1.1 1.2.1 (2017-01-19)

- Add `QuerySet.find_in` for `$in` queries with specified order;

2.1.2 1.2.0 (2016-12-27)

- Drop MongoDB 2.X support;
- Objects for update and remove results;
- Use Faker instead fake-factory;

2.1.3 1.1.4 (2016-08-20)

- Add some features to **`:py:module:'Bulk <yadm.bulk>':`**
 - `Bulk.update_one(document, **kw)`: method for add update one document in bulk;
 - `Bulk.find(query).update(**kw)`: update many documents by query;
 - `Bulk.find(query).upsert().update(**kw)`: upsert document;
 - `Bulk.find(query).remove(**kw)`: remove documents;

2.1.4 1.1.3 (2016-07-23)

- Add `QuerySet.ids` method for get only documents id's from queryset;
- Add `Money.total_cents` method and `Money.total_cents` classmethod;

2.1.5 1.1 (2016-04-26)

- Add cacheing on queryset level and use it for `ReferenceField`;
- Add mongo aggregation framework support;
- Add **`exc`** argument to `QuerySet.find_one` for raise specified exception if not found;
- Add **`multi`** argument to `QuerySet.remove`;
- Deprecate `QuerySet.find_one`
- Refactoring.

2.1.6 1.0 (2015-11-14)

- Change document structure. No more bad `BaseDocument.__data__` attribute:
 - `BaseDocument.__raw__`: raw data from mongo;
 - `BaseDocument.__cache__`: cached objects, casted with fields;
 - `BaseDocument.__changed__`: changed objects.
- Changes api for custom fields:

- Not more need create field descriptors for every field;
 - `prepare_value` called only for setattr;
 - `to_mongo` called only for save objects to mongo;
 - `from_mongo` called only for load values from `BaseDocument.__raw__`;
 - Remove `Field.default` attribute. Use `Field.get_default` method;
 - Add `get_if_not_loaded` and `get_if_attribute_not_set` method;
 - By default raise `NotLoadedError` if field not loaded from projection;
- **Changes in `ReferenceField`:**
 - Raise `BrokenReference` if link is broken;
 - Raise `NotBindingToDatabase` if document not saved to database;
- `smart_null` keyword for `Field`;
- Fields in document must be instances (not classes!);
- Remove `ArrayContainer` and `ArrayContainerField`;
- Remove old `MapIntKeysField` and `MapObjectIdKeysField`. Use new `MapCustomKeysField`;
- Add `Database.update_one` method for run simple update query with specified document;
- Add `QuerySet.distinct`;
- `serialize.from_mongo` now accept `not_loaded` sequence with field names who must mark as not loaded, `parent` and `name`;
- `serialize.to_mongo` do not call `FieldDescriptor.__set__`;
- **Fakers!** Subsystem for generate test objects;
- Tests now use `pytest`;
- And more, and more...

API documentation

3.1 API

API documentation

3.1.1 Database

This module for provide work with MongoDB database.

```
import pymongo
from yadm.database import Database

from mydocs import Doc

client = pymongo.MongoClient("localhost", 27017)
db = Database(self.client, 'test')

doc = Doc()
db.insert(doc)

doc.arg = 13
db.save(doc)

qs = db.get_queryset(Doc).find({'arg': {'$gt': 10}})
for doc in qs:
    print(doc)
```

class `yadm.database.Database` (*client*, *name*)

Main object who provide work with database.

Parameters

- **client** (*pymongo.Client*) – database connection
- **name** (*str*) – database name

aggregate (*document_class*, *, *pipeline=None*)

Return aggregator for use aggregation framework.

Parameters

- **document_class** – *yadm.documents.Document*
- **pipeline** (*list*) – initial pipeline

bulk (*document_class*, *ordered=False*, *raise_on_errors=True*)

Return Bulk.

Parameters

- **document_class** (*MetaDocument*) – class of documents fo bulk
- **ordered** (*bool*) – create ordered bulk (default *False*)
- **raise_on_errors** (*bool*) – raise BulkWriteError exception if write errors (default *True*)

Context manager:

with db.bulk(Doc) as bulk: bulk.insert(doc_1) bulk.insert(doc_2)

get_queryset (*document_class*, *, *cache=None*)

Return queryset for document class.

Parameters

- **document_class** – *yadm.documents.Document*
- **cache** – cache for share with other querysets

This create instance of *yadm.queryset.QuerySet* with presetted document's collection information.

insert (*document*)

Insert document to database.

Parameters **document** (*Document*) – document instance for insert to database

It's bind new document to database set *_id*.

reload (*document*, *new_instance=False*)

Reload document.

Parameters

- **document** (*Document*) – instance for reload
- **new_instance** (*bool*) – if *True* return new instance of document, else change data in given document (default: *False*)

remove (*document*)

Remove document from database.

Parameters **document** (*Document*) – instance for remove from database

save (*document*, *full=False*, *upsert=False*)

Save document to database.

Parameters

- **document** (*Document*) – document instance for save
- **full** (*bool*) – fully resave document (default: *False*)
- **upsert** (*bool*) – see documentation for MongoDB's *update* (default: *False*)

If document has no *_id* *insert* new document.

update_one (*document*, *reload=True*, *, *set=None*, *unset=None*, *inc=None*, *push=None*, *pull=None*)

Update one document.

Parameters

- **document** (*Document*) – document instance for update

- **reload** (*bool*) – if True, reload document

3.1.2 Documents

Basic documents classes for build models.

```
class User(Document):
    __collection__ = 'users'

    first_name = fields.StringField()
    last_name = fields.StringField()
    age = fields.IntegerField()
```

All fields placed in *yadm.fields* package.

class *yadm.documents.MetaDocument* (*cls, name, bases, cls_dict*)
Metaclass for documents.

class *yadm.documents.BaseDocument* (***kwargs*)
Base class for all documents.

__raw__
Dict with raw data from mongo

__cache__
Dict with cached objects, casted with fields

__changed__
Dict with changed objects

__data__
Deprecated! For backward compatibility only!
Old way to storing data in documents. Now equal to **__raw__**.

__debug_print__ ()
Print debug information.

__fake__ (*values, faker, depth*)
Fake data customizer.

class *yadm.documents.Document* (***kwargs*)
Class for build first level documents.

__collection__
Name of MongoDB collection

_id
Mongo object id (*bson.ObjectId*)

id
Alias for **_id** for simply use

__db__
Internal attribute contain instance of *yadm.database.Database* for realize *yadm.fields.references.ReferenceField*. It bind in *yadm.database.Database* or *yadm.queryset.QuerySet*.

__qs__
Documents gets from this queryset

class `yadm.documents.DocumentItemMixin`
Mixin for custom all fields values, such as *EmbeddedDocument*,
yadm.fields.containers.Container.

__parent__
Parent object.

```
assert doc.embedded_doc.__parent__ is doc
assert doc.list[13].__parent__ is doc.list
```

__name__

```
assert doc.list.__name__ == 'list'
assert doc.list[13].__name__ == 13
```

__db__
Database object.

```
assert doc.f.l[0].__db__ is doc.__db__
```

__document__
Root document.

```
assert doc.f.l[0].__document__ is doc
```

__field_name__
Dotted field name for MongoDB operations, like as \$set, \$push and other...

```
assert doc.f.l[0].__field_name__ == 'f.l.0'
```

__get_value__(document)
Get value from document with path to self.

__path__
Path to root generator.

```
assert list(doc.f.l[0].__path__) == [doc.f.l[0], doc.f.l, doc.f]
```

__path_names__
Path to root generator.

```
assert list(doc.f.l[0].__path__) == [0, 'l', 'f']
```

__qs__
Queryset object.

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

class `yadm.documents.EmbeddedDocument` (***kwargs*)
Class for build embedded documents.

3.1.3 Serializers and deserializers

Functions for serialize and deserialize data.

`yadm.serialize.from_mongo` (*document_class*, *data*, *not_loaded=()*, *parent=None*, *name=None*)
Deserialize MongoDB data to document.

Parameters

- **document_class** – document class
- **data** (*dict*) – data from MongoDB
- **not_loaded** (*list*) – fields, who marked as not loaded
- **parent** – parent for new document
- **name** (*str*) – name for new document

`yadm.serialize.to_mongo` (*document*, *exclude=()*, *include=None*)
Serialize document to MongoDB data.

Parameters

- **document** (*BaseDocument*) – document for serializing
- **exclude** (*list*) – exclude fields
- **include** (*list*) – include only fields (all by default)

3.1.4 Queryset

`class yadm.queryset.BaseQuerySet` (*db*, *document_class*, *, *cache=None*, *criteria=None*, *projection=None*, *sort=None*, *slice=None*, *read_preference=None*)

Query builder.

Parameters

- **db** –
- **document_class** –
- **cache** –
- **criteria** (*dict*) –
- **projection** (*dict*) –
- **sort** (*list*) –
- **slice** (*slice*) –
- **read_preference** (*int*) –

cache

Queryset cache object.

`copy` (*, *cache=None*, *criteria=None*, *projection=None*, *sort=None*, *slice=None*, *read_preference=None*)
Copy queryset with new parameters.

Only keywords arguments is allowed. Parameters simply replaced with given arguments.

Parameters

- **cache** –
- **criteria** (*dict*) –
- **projection** (*dict*) –
- **sort** (*list*) –
- **slice** (*slice*) –
- **read_preference** (*int*) –

Returns new `yadm.queryset.QuerySet` object

fields (*fields)

Get only setted fields.

Update projection with fields.

Parameters **fields** (str) –

Returns new `yadm.queryset.QuerySet`

```
qs('field', 'field2')
```

fields_all ()

Clear projection.

find (criteria=None, projection=None)

Return queryset copy with new criteria and projection.

Parameters

- **criteria** (dict) – update queryset’s criteria
- **projection** (dict) – update queryset’s projection

Returns new `yadm.queryset.QuerySet`

```
qs({'field': {'$gt': 3}}, {'field': True})
```

read_preference (read_preference)

Setup readPreference.

Return new `QuerySet` instance.

sort (*sort)

Return queryset with sorting.

Parameters **sort** (tuples) – tuples with two items: (‘field_name’, sort_order_as_int).

```
qs.sort (('field_1', 1), ('field_2', -1))
```

3.1.5 Bulk queries

class `yadm.bulk.Bulk` (db, document_class, ordered=False, raise_on_errors=True)

Bulk object.

Parameters

- **db** (`Database`) – Database instance
- **document_class** (`MetaDocument`) – document class for collection
- **ordered** (bool) – create ordered bulk (default *False*)
- **raise_on_errors** (bool) – raise `BulkWriteError` exception if write errors (default *True*)

Context manager example:

```
with db.bulk(Doc, ordered=True) as bulk: bulk.insert(doc_1) bulk.insert(doc_2)
bulk.update_one(doc_3, inc={'incr_key': 1}) bulk.find({'key': 'value'}).update(set={'key':
'new_value'}) bulk.find({'key': 'new_value'}).remove()
```

error

True for executed errors.

execute()

Execute the bulk query.

Returns *BulkResult* instance

find(query)

Start “find” query in bulk.

Parameters **query** (*dict*) –

Returns BulkQuery instance

insert(document)

Add insert document to bulk.

Parameters **document** (*Document*) – document for insert

Warning: This unlike *Database.insert*! Currently, it is not bind objects to database and set id.

result

A BulkResult instance or rise RuntimeError if not executed.

update_one(document, *, set=None, unset=None, inc=None, push=None, pull=None)

Add update one document to bulk.

class yadm.bulk.**BulkResult** (*bulk, raw*)

Object who provide result of *Bulk.execute()*.

n_inserted

Provide *nInserted* from raw result.

n_modified

Provide *nModified* from raw result.

n_removed

Provide *nRemoved* from raw result.

n_upserted

Provide *nUpserted* from raw result.

write_errors

Provide *writeErrors* from raw result.

3.1.6 Mongo Aggregation Framework

Mongo Aggregation Framework helper.

```
cur = db.aggregate(Doc).match({'i': {'$gt': 13}}).project(a='$i').limit(8)
```

3.1.7 Join

class yadm.join.**Join** (*qs*)

Helper for build client-side joins.

```
# Doc.ref is instance of ReferenceField
qs = db(Doc).find({'k': 1}) # queryset filter
join = qs.join('ref') # create join query in this place
for doc in join:
    print(doc.ref) # do not create query to database
```

get_queryset (*field_name*)

Return queryset for joined objects.

join (**field_names*)

Do manual join.

3.1.8 Fields

This package contain all fields.

Base fields

Base classes for build database fields.

class yadm.fields.base.**NotLoadedError**

Raise if value marked as not loaded.

```
doc = db(Doc).fields('a').find_one()
try:
    doc.b
except NotLoadedError:
    print("raised!")
```

class yadm.fields.base.**FieldDescriptor** (*name, field*)

Base descriptor for fields.

name

Name of field

field

Field instance for this descriptor

__delete__ (*instance*)

Mark document's key as not set.

__get__ (*instance, owner*)

Get python value from document.

1.Lookup in **__changed__**;

2.Lookup in **__cache__**;

3.Lookup in **__raw__**:

- if **AttributeNotSet** – call **Field.get_if_attribute_not_set**;

- if **NotLoaded** – call **Field.get_if_not_loaded**;

- call **Field.from_mongo**;

- set **__name__** and **__parent__**

- save to **__cache__**

4. Call `Field.get_default`;
5. If `AttributeNotSet` – call `Field.get_if_attribute_not_set`;
6. Return value.

__set__ (*instance, value*)

Set value to document.

1. Call `Field.prepare_value` for cast value;
2. Save in `Document.__changed__`;
3. Call `Field.set_parent_changed`.

class `yadm.fields.base.Field` (*smart_null=False*)

Base field for all database fields.

Parameters `smart_null` (*bool*) – If it *True*, access to not exists fields return *None* instead *AttributeError* exception. You will not be able to distinguish null value from not exist. Use with care.

descriptor_class

Class of descriptor for work with field

document_class

Class of document. Set in `contribute_to_class()`.

name

Name of field in document. Set in `contribute_to_class()`.

contribute_to_class (*document_class, name*)

Add field for `document_class`.

Parameters `document_class` (*MetaDocument*) – document class for add

copy ()

Return copy of field.

descriptor_class

alias of *FieldDescriptor*

from_mongo (*document, value*)

Convert mongo value to python value.

Parameters

- **document** (*BaseDocument*) – document
- **value** – mongo value

Returns python value

get_default (*document*)

Return default value.

get_fake (*document, faker, deep*)

Return fake data for testing.

get_if_attribute_not_set (*document*)

Call if key not exist in document.

get_if_not_loaded (*document*)

Call if field data marked as not loaded.

prepare_value (*document*, *value*)

The method is called when value is assigned for the attribute.

Parameters

- **document** (`BaseDocument`) – document
- **value** – raw value

Returns prepared value

It must be accept *value* argument and return processed (e.g. casted) analog. Also it is called once for the default value.

to_mongo (*document*, *value*)

Convert python value to mongo value.

Parameters

- **document** (`BaseDocument`) – document
- **value** – python value

Returns mongo value

Simple fields

Fields for basic data types.

```
class yadm.fields.simple.BooleanField(default=<class 'yadm.markers.AttributeNotSet'>, *,
                                     choices=None, **kwargs)
```

Field for boolean values.

type
alias of bool

```
class yadm.fields.simple.FloatField(default=<class 'yadm.markers.AttributeNotSet'>, *,
                                    choices=None, **kwargs)
```

Field for float.

type
alias of float

```
class yadm.fields.simple.IntegerField(default=<class 'yadm.markers.AttributeNotSet'>, *,
                                      choices=None, **kwargs)
```

Field for integer.

type
alias of int

```
class yadm.fields.simple.ObjectIdField(default_gen=False)
```

Field for ObjectId.

Parameters **default_gen** (*bool*) – generate default value if not set

type
alias of ObjectId

```
class yadm.fields.simple.SimpleField(default=<class 'yadm.markers.AttributeNotSet'>, *,
                                     choices=None, **kwargs)
```

Base field for simple types.

Parameters

- **default** – default value

- **choices** (*set*) – set of possible values

```
class yadm.fields.simple.StringField(default=<class 'yadm.markers.AttributeNotSet'>, *,
                                     choices=None, **kwargs)
```

Field for string.

type
alias of `str`

Datetime field

```
class yadm.fields.datetime.DateTimeField(*, auto_now=False, **kwargs)
```

Field for time stamp.

Parameters `auto_now` (*bool*) – `datetime.now` as default (default: `False`)

Decimal field

Field for decimal numbers

This code save to MongoDB document:

```
class yadm.fields.decimal.DecimalField(*, context=None, **kwargs)
```

Field for work with `decimal.Decimal`.

Parameters

- **context** (*decimal.Context*) – context for decimal operations (default: run `decimal.getcontext()` when need)
- **default** (*decimal.Decimal*) –

TODO: context in copy()

context
Context.

Returns `decimal.Context` for values

prepare_value (*document, value*)
Cast value to `decimal.Decimal`.

Embedded documents fields

Work with embedded documents.

```
class EDoc(EmbeddedDocument):
    i = fields.IntegerField()

class Doc(Document):
    __collection__ = 'docs'
    edoc = EmbeddedDocumentField(EDoc)

doc = Doc()
doc.edoc = EDoc()
doc.edoc.i = 13
db.insert(doc)
```

```
class yadm.fields.embedded.EmbeddedDocumentField(embedded_document_class, *,  
                                                auto_create=True, **kwargs)
```

Field for embedded objects.

Parameters

- **embedded_document_class** (`EmbeddedDocument`) – class for embedded document
- **auto_create** (`bool`) – automatic creation embedded document from access

copy()

Return copy of field.

get_if_attribute_not_set (*document*)

Call if key not exist in document.

If `auto_create` is `True`, create and return new embedded document. Else `AttributeError` is raised.

Reference field

Work with references.

```
class RDoc(Document):  
    i = fields.IntegerField  
  
class Doc(Document):  
    rdoc = fields.ReferenceField(RDoc)  
  
rdoc = RDoc()  
rdoc.i = 13  
db.insert(rdoc)  
  
doc = Doc()  
doc.rdoc = rdoc  
db.insert(doc)  
  
doc = db.get_queryset(Doc).find_one(doc.id) # reload doc  
assert doc.rdoc.id == rdoc.id  
assert doc.rdoc.i == 13
```

exception yadm.fields.reference.BrokenReference

Raise if referenced document is not found.

exception yadm.fields.reference.NotBindingToDatabase

Raise if set `ObjectId` instated referenced document to new document, who not binded to database.

class yadm.fields.reference.ReferenceField (*reference_document_class*, **kwargs)

Field for work with references.

Parameters **reference_document_class** – class for refered documents

get_fake (*document*, *faker*, *depth*)

Try create referenced document.

Containers fields

Base classes for containers.

```

class yadm.fields.containers.Container(field, parent, value)
    Base class for containers.

    reload()
        Reload all object from database.

class yadm.fields.containers.ContainerField(item_field=None, *, auto_create=True,
                                             **kwargs)

    Base class for container fields.

    container
        alias of Container

    from_mongo(document, value)

    get_default(document)

    get_default_value()

    prepare_item(container, item, value)

    prepare_value(document, value)

    to_mongo(document, value)

```

List fields

List of objects.

```

class Doc(Document):
    __collection__ = 'docs'
    integers = fields.ListField(fields.IntegerField)

doc = Doc()
doc.integers.append(1)
doc.integers.append(2)
assert doc.integers == [1, 2]

db.insert(doc)
doc = db.get_queryset(Doc).find_one(doc.id) # reload

doc.integers.append(3) # do not save
assert doc.integers == [1, 2, 3]
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.integers == [1, 2]

doc.integers.remove(2) # do not save too
assert doc.integers == [1]
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.integers == [1, 2]

doc.integers.push(3) # $push query
assert doc.integers == [1, 2, 3]
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.integers == [1, 2, 3]

doc.integers.pull(2) # $pull query
assert doc.integers == [1, 3]
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.integers == [1, 3]

```

class `yadm.fields.list.List` (*field, parent, value*)

Container for list.

append (*item*)

Append item to list.

Parameters *item* – item for append

This method does not save object!

insert (*index, item*)

Append item to list.

Parameters

- **index** (*int*) –
- **item** – item for insert

This method does not save object!

pull (*query, reload=True*)

Pull item from database.

Parameters

- **query** – query for *\$pull* on this field
- **reload** (*bool*) – automatically reload all values from database

See *\$pull* in MongoDB's *update*.

push (*item, reload=True*)

Push item directly to database.

Parameters

- **item** – item for *\$push*
- **reload** (*bool*) – automatically reload all values from database

See *\$push* in MongoDB's *update*.

remove (*item*)

Remove item from list.

Parameters *item* – item for remove

This method does not save object!

replace (*query, item, reload=True*)

Replace list elements.

Parameters

- **query** – query for *update*. Keys of this query is relative.
- **item** – embedded document or dict
- **reload** (*bool*) – automatically reload all values from database

update (*query, values, reload=True*)

Update fields in embedded documents.

Parameters

- **query** – query for *update*. Keys of this query is relative.
- **values** – dict of new values

- **reload** (*bool*) – automatically reload all values from database

class `yadm.fields.list.ListField` (*item_field=None, *, auto_create=True, **kwargs*)
Field for list values.

For example, document with list of integers:

```
class TestDoc(Document):
    __collection__ = 'testdoc'
    li = fields.ListField(fields.IntegerField())
```

container
alias of *List*

Set field

Field with sets.

Similar as *yadm.fields.list*.

class `yadm.fields.set.Set` (*field, parent, value*)
Container for set.

add (*item*)
Append item to set.

Parameters *item* – item for add

This method does not save object!

add_to_set (*item, reload=True*)
Add item directly to database.

Parameters

- *item* – item for *\$addToSet*
- **reload** (*bool*) – automatically reload all values from database

See *\$addToSet* in MongoDB's *update*.

discard (*item*)
Remove item from the set if it is present.

Parameters *item* – item for discard

This method does not save object!

pull (*query, reload=True*)
Pull item from database.

Parameters

- **query** – query for *\$pull* on this field
- **reload** (*bool*) – automatically reload all values from database

See *\$pull* in MongoDB's *update*.

remove (*item*)
Remove item from set.

Parameters *item* – item for remove

This method does not save object!

class `yadm.fields.set.SetField` (*item_field=None*, *, *auto_create=True*, ***kwargs*)
Field for set values.

container
alias of *Set*

Map field

Map.

```
class Doc(Document):
    __collection__ = 'docs'
    map = fields.MapField(fields.IntegerField)

doc = Doc()
doc.map['a'] = 1
doc.map['b'] = 2
assert doc.map == {'a': 1, 'b': 2}

db.insert(doc)
doc = db.get_queryset(Doc).find_one(doc.id) # reload

doc.map['c'] = 3 # do not save
assert doc.map == {'a': 1, 'b': 2, 'c': 3}
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.map == {'a': 1, 'b': 2}

del doc.map['b'] # do not save too
assert doc.map == {'a': 1}
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.map == {'a': 1, 'b': 2}

doc.map.set('d', 3) # $set query
assert doc.map == {'a': 1, 'b': 2, 'c': 3}
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.map == {'a': 1, 'b': 2, 'c': 3}

doc.map.unset('d', 3) # $unset query
assert doc.map == {'a': 1, 'b': 2}
doc = db.get_queryset(Doc).find_one(doc.id) # reload
assert doc.map == {'a': 1, 'b': 2}
```

class `yadm.fields.map.Map` (*field, parent, value*)
Map.

set (*key, value, reload=True*)
Set key directly in database.

Parameters

- **key** – key
- **value** – value for *\$set*

See *\$set* in MongoDB's *set*.

unset (*key, reload=True*)
Unset key directly in database.

Parameters **key** – key

See *\$unset* in MongoDB's *unset*.

```
class yadm.fields.map.MapCustomKeysField(item_field, key_factory, *, key_to_str=<class 'str'>,
                                         auto_create=True, **kwargs)
```

Field for maps with custom key type.

Parameters

- **item_field** (*field*) –
- **key_factory** (*func*) – function, who return thue key from raw string key
- **key_to_str** (*func*) –
- **auto_create** (*bool*) –

```
class yadm.fields.map.MapField(item_field=None, *, auto_create=True, **kwargs)
    Field for maps.
```

container

alias of *Map*

Geo fields

Fields for geo data

See: <http://docs.mongodb.org/manual/applications/geospatial-indexes/>

GeoJSON: <http://geojson.org/geojson-spec.html>

```
class yadm.fields.geo.Geo
    Base class for GeoJSON data.
```

```
class yadm.fields.geo.GeoCoordinates
    Base class for GeoJSON data with coordinates.
```

```
class yadm.fields.geo.GeoField(types=[<class 'yadm.fields.geo.Point'>, <class
                                     'yadm.fields.geo.MultiPoint'>], **kwargs)
    Base field for GeoJSON objects.
```

```
class yadm.fields.geo.GeoOneTypeField(**kwargs)
    Base field for GeoJSON objects with one acceptable type.
```

```
class yadm.fields.geo.MultiPoint(points)
    Class for GeoJSON MultiPoint objects.
```

See: <http://geojson.org/geojson-spec.html#id5>

```
class yadm.fields.geo.MultiPointField(**kwargs)
    Field for MultiPoint.
```

type

alias of *MultiPoint*

```
class yadm.fields.geo.Point(longitude, latitude)
    Class for GeoJSON Point objects.
```

See: <http://geojson.org/geojson-spec.html#id2>

```
class yadm.fields.geo.PointField(**kwargs)
    Field for Point.
```

type

alias of *Point*

y

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