
yadm

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

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)
```

1.1 CHANGES

1.1.1 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.

1.1.2 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 bloken;
 - 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 filed 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

2.1 API

API documentation

2.1.1 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

2.1.2 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.

2.1.3 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)

2.1.4 Queryset

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

Query builder.

Parameters

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

bulk ()

Return map {id: object}.

Returns dict

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

count ()

Count documents in queryset.

Returns **int**

distinct (*field*)

Distinct query.

Parameters **field** (*str*) – field for distinct

Returns list with result data

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})
```

find_and_modify (*update=None, *, upsert=False, full_response=False, new=False, **kwargs*)

Execute *\$findAndModify* query.

Parameters

- **update** (*dict*) – see second argument to *update()*
- **upsert** (*bool*) – insert if object doesn't exist (*default False*)
- **full_response** (*bool*) – return the entire response object from the server (*default False*)
- **new** – return updated rather than original object (*default False*)
- **kwargs** – any other options the *findAndModify* command supports can be passed here

Returns *yadm.documents.Document* or **None**

find_one (*criteria=None, projection=None, *, exc=None*)

Find and return only one document.

Parameters

- **criteria** (*dict*) – update queryset's criteria

- **projection** (*dict*) – update queryset’s projection
- **exc** (*Exception*) – raise given exception if not found

Returns *yadm.documents.Document* or **None**

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

join (**field_names*)

Create *yadm.Join* object, join *field_names* and return it.

Parameters **fiels_names** (*str*) – fields for join

Returns new *yadm.join.Join*

Next algorithm for join:

1. Get all documents from queryset;
2. Aggegate all ids from requested fields;
3. Make *\$in* queries for get joined documents;
4. Bind joined documents to objects from first queryset;

Join object is instance of *abc.Sequence*.

read_preference (*read_preference*)

Setup readPreference.

Return new QuerySet instance.

remove (*, *multi=True*)

Remove documents in queryset.

Parameters **multi** (*bool*) – if False, remove only first finded document (*default True*)

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))
```

update (*update*, *, *multi=True*, *upsert=False*)

Update documents in queryset.

Parameters

- **update** (*dict*) – update query
- **multi** (*bool*) – update all matched documents (*default True*)
- **upsert** (*bool*) – insert if not found (*default False*)

Returns update result

with_id (*_id*)

Find document with id.

This method is deprecated. Use *find_one*.

Parameters **_id** – id of searching document

Returns *yadm.documents.Document* or **None**

2.1.5 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) as bulk: bulk.insert(doc_1) bulk.insert(doc_2)
```

execute ()

Execute the bulk query.

Returns *BulkResult* 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.

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.

2.1.6 Mongo Aggregation Framework

Mongo Aggregation Framework helper.

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

2.1.7 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.

2.1.8 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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