
MangoEngine

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This is the main documentation for MangoEngine, a lightweight library for creating generic data models in Python. See our [GitHub page](#) for a quick intro to the project.

MangoEngine API Reference

1.1 The Model Class

class `mangoengine.Model` (***kwargs*)

Derive from this class to make your own models.

Variables

- **`_fields`** – A dictionary mapping any field names to their `mangoengine.Field` instances.
- **`_allow_unknown_data`** – Sets the default value for the `allow_unknown_data` parameter in `validate()`.

```
>>> class Person(Model):
...     name = StringField()
...     unrelated = 3
...
>>> Person.name
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
AttributeError: type object 'Person' has no attribute 'name'
>>> Person.unrelated
3
>>> Person._fields
{'name': <mangoengine.fields.StringField object at 0x2200d50>}
>>> person = Person(name = "John")
>>> person
Person(name = 'John')
```

Note: The magic handling of the class attributes is made possible through the `mangoengine.models.ModelMetaclass` metaclass.

classmethod `from_dict` (*dictionary, allow_unknown_data=None*)

Creates a new instance of the model from the given dictionary.

Note: Validation is not performed. Make sure to call `validate()` afterwards if validation is desired.

Parameters

- **`dictionary`** – The dictionary to pull the values from.

- **allow_unknown_data** – If True, when an unknown attribute is found the validation will fail. Uses the value of `self._allow_unknown_data` if None is specified, or True if no such attribute exists.

1.2 Fields

class mangoengine.**Field**(*nullable=False*)

The base Field class. Should be inherited from and not used directly.

Variables

- **name** – The name of the field in the model. For example, if the model defines a field `hair_color` as a `StringField`, that `StringField`'s name should be set to `"hair_color"`.
- **nullable** – If False, the value of this field may not be None.

class mangoengine.**StringField**(***default_kwargs*)

A string field. Only values of type `str` are accepted.

class mangoengine.**UnicodeField**(***default_kwargs*)

A unicode string field. Only values of type `unicode` are accepted.

class mangoengine.**NumericField**(*bounds=(None, None), **default_kwargs*)

A numeric field. Only types of `int`, `long`, and `double` are accepted.

Variables **bounds** – A two-tuple containing a lower and upper **inclusive** bound.

class mangoengine.**IntegralField**(*bounds=(None, None), **default_kwargs*)

An integral field. Only types of `int` and `long` are accepted.

Variables **bounds** – A two-tuple containing a lower and upper **inclusive** bound.

class mangoengine.**DictField**(*of_key=None, of_value=None, **default_kwargs*)

A dictionary field. Only values of type `dict` are accepted.

Variables

- **of_key** – The type of field that every key must be. Example, if this is a `StringField`, all keys in the dictionary must be strings.
- **of_value** – Similar to `of_key` but affecting the values.

class mangoengine.**ListField**(*of=None, **default_kwargs*)

A list field. Only values of type `list` are accepted.

Variables **of** – The type of field that each list item must be. For example, if a `StringField` is given, all list items must be strings.

class mangoengine.**ModelField**(*model, **default_kwargs*)

A field that can wrap any Model class.

Variables **model** – The type of Model it accepts.

1.3 Errors

class mangoengine.**ValidationFailure**(*field_name, description*)

Raised by `Model.validate()` when the value given for a particular field is not valid.

Variables

- **field_name** – The value of the field's name attribute.
- **description** – A description of the failure.

class mangoengine.**UnknownAttribute** (*attribute_name*)

Raised by `Model.validate()` when `allow_unknown_data` is `False` and an unknown attribute is encountered.

Inherits from `ValidationFailure`.

1.4 The ModelMetaclass Metaclass

This metaclass is not a part of the MangoEngine public interface and should not be accessed directly. It is useful to look at to understand how the models work however.

class mangoengine.models.**ModelMetaclass**

A simple metaclass responsible for setting up Model classes appropriately.

The created class will have a `_fields` class variable that contains a dictionary mapping field names to instances of `Field`. For example...

```
>>> class Foo(Model):
...     a = StringField()
...     b = ListField()
...     unrelated = "string"
...
>>> Foo._fields
{'a': <mangoengine.fields.StringField object at 0x7fc8db7bb210>,
'b': <mangoengine.fields.ListField object at 0x7fc8db7bb990>}
```

Further, the original class variables that define fields are not preserved, but any other class variables are. Continuing from above...

```
>>> Foo.a
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
AttributeError: type object 'Foo' has no attribute 'a'
>>> Foo.unrelated
'string'
```

Note: For a fantastic overview of metaclasses, see <http://stackoverflow.com/a/6581949/1989056>.

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