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# **dokomoforms Documentation**

*Release*

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Contents:



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## dokomoforms package

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### 1.1 Subpackages

#### 1.1.1 dokomoforms.handlers package

##### Subpackages

dokomoforms.handlers.api package

##### Subpackages

dokomoforms.handlers.api.v0 package

##### Submodules

dokomoforms.handlers.api.v0.base module

dokomoforms.handlers.api.v0.nodes module

dokomoforms.handlers.api.v0.photos module

dokomoforms.handlers.api.v0.serializer module

dokomoforms.handlers.api.v0.submissions module

dokomoforms.handlers.api.v0.surveys module

##### Module contents

dokomoforms.handlers.user package

##### Submodules

**dokomoforms.handlers.user.admin module**

**dokomoforms.handlers.user.enumerate module**

Module contents

Submodules

**dokomoforms.handlers.auth module**

**dokomoforms.handlers.debug module**

**dokomoforms.handlers.root module**

**dokomoforms.handlers.util module**

Module contents

## 1.1.2 dokomoforms.models package

Submodules

**dokomoforms.models.answer module**

Answer models.

**class** `dokomoforms.models.answer.Answer` (\*\*kwargs)

Bases: `dokomoforms.models.util.Base`

An Answer is a response to a SurveyNode.

An Answer can be one of an answer, an “other” response or a “don’t know” response. Answer.response abstracts over these 3 possibilities.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance’s class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know**

**allow\_multiple**

**allow\_other**

**answer**

The answer. Could be the same as main\_answer in simple cases.

This property is the most useful representation available of the answer. In the simplest case it is just a synonym for main\_answer. It could otherwise be a dictionary or another model.

**answer\_metadata**

**answer\_number**

**answer\_type****deleted****dont\_know**

A text field containing “don’t know” responses.

**id****last\_update\_time****main\_answer**

The representative part of a provided answer.

The `main_answer` is the only answer for simple types (integer, text, etc.) and for other types is the part of the answer that is most important. In practice, the `main_answer` is special only in that all Answer models have it, which is necessary for certain constraints and for the response property.

**other**

A text field containing “other” responses.

**question\_id****question\_title****repeatable****response = OrderedDict([('type\_constraint', <sqlalchemy.orm.attributes.InstrumentedAttribute object at 0x7f8671664a****save\_time****submission\_id****survey\_containing\_id****survey\_id****survey\_node****survey\_node\_containing\_survey\_id****survey\_node\_id****type\_constraint**

**class** dokomoforms.models.answer.**DateAnswer** (\*\*kwargs)

Bases: dokomoforms.models.answer.\_AnswerMixin, *dokomoforms.models.answer.Answer*

A DATE answer.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance’s class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know****allow\_multiple****allow\_other****answer****answer\_metadata****answer\_number**

`answer_type`  
`deleted`  
`dont_know`  
`id`  
`last_update_time`  
`main_answer`  
`other`  
`question_id`  
`question_title`  
`repeatable`  
`save_time`  
`submission_id`  
`survey_containing_id`  
`survey_id`  
`survey_node`  
`survey_node_containing_survey_id`  
`survey_node_id`  
`the_allow_dont_know`  
`the_allow_other`  
`type_constraint`

**class** `dokomoforms.models.answer.DecimalAnswer` (\*\*kwargs)

Bases: `dokomoforms.models.answer._AnswerMixin`, `dokomoforms.models.answer.Answer`

A NUMERIC answer.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_dont_know`  
`allow_multiple`  
`allow_other`  
`answer`  
`answer_metadata`  
`answer_number`  
`answer_type`  
`deleted`  
`dont_know`

```

id
last_update_time
main_answer
other
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
type_constraint

```

```
class dokomoforms.models.answer.FacilityAnswer (**kwargs)
```

Bases: dokomoforms.models.answer.\_AnswerMixin, *dokomoforms.models.answer.Answer*

A facility answer (a la Revisit).

FacilityAnswer.answer is a dictionary with 4 keys: facility\_location, facility\_id, facility\_name, facility\_sector

facility\_location accepts input in the form {

```
    'lng': <longitude>, 'lat': <latitude>
```

} and outputs a GeoJSON.

```
__init__ (**kwargs)
```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```
allow_dont_know
```

```
allow_multiple
```

```
allow_other
```

```
answer = OrderedDict([('facility_location', <sqlalchemy.orm.attributes.InstrumentedAttribute object at 0x7f8671570200>)
```

```
answer_metadata
```

```
answer_number
```

```
answer_type
```

```
deleted
```

**dont\_know**  
**facility\_id**  
**facility\_name**  
**facility\_sector**  
**geo\_json**  
**id**  
**last\_update\_time**  
**main\_answer**  
**other**  
**question\_id**  
**question\_title**  
**repeatable**  
**save\_time**  
**submission\_id**  
**survey\_containing\_id**  
**survey\_id**  
**survey\_node**  
**survey\_node\_containing\_survey\_id**  
**survey\_node\_id**  
**the\_allow\_dont\_know**  
**the\_allow\_other**  
**type\_constraint**

**class** dokomoforms.models.answer.**IntegerAnswer** (\*\*kwargs)  
 Bases: dokomoforms.models.answer.\_AnswerMixin, *dokomoforms.models.answer.Answer*  
 An INTEGER answer (signed 4 byte).

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know**

**allow\_multiple**

**allow\_other**

**answer**

**answer\_metadata**

**answer\_number**

**answer\_type**

```

deleted
dont_know
id
last_update_time
main_answer
other
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
type_constraint

```

```
class dokomoforms.models.answer.LocationAnswer(**kwargs)
```

Bases: dokomoforms.models.answer.\_AnswerMixin, *dokomoforms.models.answer.Answer*

A GEOMETRY('POINT', 4326) answer.

Accepts input in the form {

```

    'lng': <longitude>, 'lat': <latitude>
}

```

The output is a GeoJSON.

```
__init__ (**kwargs)
```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```
allow_dont_know
```

```
allow_multiple
```

```
allow_other
```

```
answer
```

```
answer_metadata
```

```
answer_number
```

**answer\_type**  
**deleted**  
**dont\_know**  
**geo\_json**  
**id**  
**last\_update\_time**  
**main\_answer**  
**other**  
**question\_id**  
**question\_title**  
**repeatable**  
**save\_time**  
**submission\_id**  
**survey\_containing\_id**  
**survey\_id**  
**survey\_node**  
**survey\_node\_containing\_survey\_id**  
**survey\_node\_id**  
**the\_allow\_dont\_know**  
**the\_allow\_other**  
**type\_constraint**

**class** dokomoforms.models.answer.**MultipleChoiceAnswer** (\*\*kwargs)

Bases: dokomoforms.models.answer.\_AnswerMixin, *dokomoforms.models.answer.Answer*

A Choice answer.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know**

**allow\_multiple**

**allow\_other**

**answer**

**answer\_metadata**

**answer\_number**

**answer\_type**

**choice**

```

deleted
dont_know
id
last_update_time
main_answer
other
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
the_question_id
the_submission_id
the_survey_node_id
type_constraint

```

```
class dokomoforms.models.answer.Photo(**kwargs)
```

Bases: *dokomoforms.models.util.Base*

A BYTEA holding an image.

```
__init__(**kwargs)
```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```
created_on
```

```
deleted
```

```
id
```

```
image
```

```
mime_type
```

```
class dokomoforms.models.answer.PhotoAnswer (**kwargs)
    Bases: dokomoforms.models.answer._AnswerMixin, dokomoforms.models.answer.Answer

    A photo answer (the id of a Photo).

    __init__ (**kwargs)
        A simple constructor that allows initialization from kwargs.

        Sets attributes on the constructed instance using the names and values in kwargs.

        Only keys that are present as attributes of the instance's class are allowed. These could be, for example,
        any mapped columns or relationships.

actual_photo_id
allow_dont_know
allow_multiple
allow_other
answer
answer_metadata
answer_number
answer_type
deleted
dont_know
id
last_update_time
main_answer
other
photo
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
type_constraint
```

---

```

class dokomoforms.models.answer.TextAnswer (**kwargs)
    Bases: dokomoforms.models.answer._AnswerMixin, dokomoforms.models.answer.Answer

    A TEXT answer.

    __init__ (**kwargs)
        A simple constructor that allows initialization from kwargs.

        Sets attributes on the constructed instance using the names and values in kwargs.

        Only keys that are present as attributes of the instance's class are allowed. These could be, for example,
        any mapped columns or relationships.

allow_dont_know
allow_multiple
allow_other
answer
answer_metadata
answer_number
answer_type
deleted
dont_know
id
last_update_time
main_answer
other
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
type_constraint

class dokomoforms.models.answer.TimeAnswer (**kwargs)
    Bases: dokomoforms.models.answer._AnswerMixin, dokomoforms.models.answer.Answer

    A TIME WITH TIME ZONE answer.

```

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_dont_know`

`allow_multiple`

`allow_other`

`answer`

`answer_metadata`

`answer_number`

`answer_type`

`deleted`

`dont_know`

`id`

`last_update_time`

`main_answer`

`other`

`question_id`

`question_title`

`repeatable`

`save_time`

`submission_id`

`survey_containing_id`

`survey_id`

`survey_node`

`survey_node_containing_survey_id`

`survey_node_id`

`the_allow_dont_know`

`the_allow_other`

`type_constraint`

**class** `dokomoforms.models.answer.TimestampAnswer` (\*\*kwargs)

Bases: `dokomoforms.models.answer._AnswerMixin`, `dokomoforms.models.answer.Answer`

A TIMESTAMP WITH TIME ZONE answer.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

allow_dont_know
allow_multiple
allow_other
answer
answer_metadata
answer_number
answer_type
deleted
dont_know
id
last_update_time
main_answer
other
question_id
question_title
repeatable
save_time
submission_id
survey_containing_id
survey_id
survey_node
survey_node_containing_survey_id
survey_node_id
the_allow_dont_know
the_allow_other
type_constraint

```

`dokomoforms.models.answer.add_new_photo_to_session(session, *, id, **kwargs)`  
 Create a new Photo and update the referenced PhotoAnswer.

`dokomoforms.models.answer.construct_answer(*, type_constraint: str, **kwargs) → dokomoforms.models.answer.Answer`  
 Return a subclass of `dokomoforms.models.answer.Answer`.

The subclass is determined by the `type_constraint` parameter. This utility function makes it easy to create an instance of an Answer subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

#### Parameters

- **type\_constraint** – the type of the answer. Must be one of the keys of `dokomoforms.models.answer.ANSWER_TYPES`
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Answer subtypes

**Raises** `dokomoforms.exc.NotAnAnswerTypeError`

## dokomoforms.models.column\_properties module

Extra properties for models.

These could not be defined inline with the models do to import issues. See [http://docs.sqlalchemy.org/en/rel\\_1\\_0/orm/mapped\\_sql\\_expr.html#using-column-property](http://docs.sqlalchemy.org/en/rel_1_0/orm/mapped_sql_expr.html#using-column-property)

`dokomoforms.models.column_properties.answer_avg` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the average of the answers.

`dokomoforms.models.column_properties.answer_max` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the maximum answer.

`dokomoforms.models.column_properties.answer_min` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the minimum answer.

`dokomoforms.models.column_properties.answer_mode` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the mode of the answers.

`dokomoforms.models.column_properties.answer_stddev_pop` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the population standard deviation of the answers.

`dokomoforms.models.column_properties.answer_stddev_samp` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the sample standard deviation of the answers.

`dokomoforms.models.column_properties.answer_sum` (*survey\_node*: *dokomoforms.models.survey.AnswerableSurveyNode*)

Get the sum of the answers.

`dokomoforms.models.column_properties.generate_question_stats` (*survey*)  
Get answer statistics for the nodes in a survey.

## dokomoforms.models.node module

A Node is either a note or a question and is independent of a Survey.

**class** `dokomoforms.models.node.Choice` (\*\*kwargs)  
Bases: `dokomoforms.models.util.Base`

A choice for a `MultipleChoiceQuestion`.

Models a choice for a `dokomoforms.models.survey.MultipleChoiceQuestion`.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**choice\_number**

**choice\_text**

**deleted**

**id**

**last\_update\_time**

**question\_id**

**question\_languages**

**class** dokomoforms.models.node.**DateQuestion** (\*\*kwargs)

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A date question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**

**allow\_other**

**deleted**

**hint**

**id**

**languages**

**last\_update\_time**

**logic**

**the\_languages**

**the\_type\_constraint**

**title**

**type\_constraint**

**class** dokomoforms.models.node.**DecimalQuestion** (\*\*kwargs)

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A decimal question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**

`allow_other`  
`deleted`  
`hint`  
`id`  
`languages`  
`last_update_time`  
`logic`  
`the_languages`  
`the_type_constraint`  
`title`  
`type_constraint`

**class** `dokomoforms.models.node.FacilityQuestion` (\*\*kwargs)  
Bases: `dokomoforms.models.node._QuestionMixin`, `dokomoforms.models.node.Question`

A facility question.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`  
`allow_other`  
`deleted`  
`hint`  
`id`  
`languages`  
`last_update_time`  
`logic`  
`the_languages`  
`the_type_constraint`  
`title`  
`type_constraint`

**class** `dokomoforms.models.node.IntegerQuestion` (\*\*kwargs)  
Bases: `dokomoforms.models.node._QuestionMixin`, `dokomoforms.models.node.Question`

A integer question.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

allow_multiple
allow_other
deleted
hint
id
languages
last_update_time
logic
the_languages
the_type_constraint
title
type_constraint

```

```
class dokomofoms.models.node.LocationQuestion (**kwargs)
```

Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A location question.

```
__init__ (**kwargs)
```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

allow_multiple
allow_other
deleted
hint
id
languages
last_update_time
logic
the_languages
the_type_constraint
title
type_constraint

```

```
class dokomofoms.models.node.MultipleChoiceQuestion (**kwargs)
```

Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A multiple\_choice question.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`

`allow_other`

`choices`

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`node_languages`

`the_languages`

`the_type_constraint`

`title`

`type_constraint`

**class** `dokomoforms.models.node.Node` (\*\*kwargs)

Bases: `dokomoforms.models.util.Base`

A node is a Note or Question independent of any Survey.

A node is its own entity. A node can be a `dokomoforms.models.survey.Note` or a `dokomoforms.models.survey.Question`.

**You can use this class for querying, e.g.** `session.query(Node).filter_by(title='Some Title')`

To create the specific kind of Node you want, use `dokomoforms.models.survey.node.construct_node`.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`title`

**type\_constraint**

**class** `dokomofoms.models.node.Note(**kwargs)`

Bases: `dokomofoms.models.node.Node`

Notes provide information interspersed with survey questions.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**deleted**

**hint**

**id**

**languages**

**last\_update\_time**

**logic**

**the\_type\_constraint**

**title**

**type\_constraint**

**class** `dokomofoms.models.node.PhotoQuestion(**kwargs)`

Bases: `dokomofoms.models.node._QuestionMixin`, `dokomofoms.models.node.Question`

A photo question.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**

**allow\_other**

**deleted**

**hint**

**id**

**languages**

**last\_update\_time**

**logic**

**the\_languages**

**the\_type\_constraint**

**title**

**type\_constraint**

**class** dokomoforms.models.node.**Question** (\*\*kwargs)

Bases: *dokomoforms.models.node.Node*

A Question has a response type associated with it.

A Question has a type constraint associated with it (integer, date, text...). Only a dokomoforms.models.survey.MultipleChoiceQuestion has a list of dokomoforms.models.survey.Choice instances.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**

**allow\_other**

**deleted**

**hint**

**id**

**languages**

**last\_update\_time**

**logic**

**the\_languages**

**the\_type\_constraint**

**title**

**type\_constraint**

**class** dokomoforms.models.node.**TextQuestion** (\*\*kwargs)

Bases: *dokomoforms.models.node.\_QuestionMixin*, *dokomoforms.models.node.Question*

A text question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**

**allow\_other**

**deleted**

**hint**

**id**

**languages**

**last\_update\_time**

**logic**

**the\_languages****the\_type\_constraint****title****type\_constraint****class** dokomofoms.models.node.**TimeQuestion** (\*\*kwargs)Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A time (with time zone) question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple****allow\_other****deleted****hint****id****languages****last\_update\_time****logic****the\_languages****the\_type\_constraint****title****type\_constraint****class** dokomofoms.models.node.**TimestampQuestion** (\*\*kwargs)Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A timestamp (with time zone) question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple****allow\_other****deleted****hint****id****languages**

`last_update_time`  
`logic`  
`the_languages`  
`the_type_constraint`  
`title`  
`type_constraint`

`dokomoforms.models.node.construct_node(*, type_constraint: str, **kwargs) → dokomoforms.models.node.Node`

Return a subclass of `dokomoforms.models.node.Node`.

The subclass is determined by the `type_constraint` parameter. This utility function makes it easy to create an instance of a `Node` or `Question` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

#### Parameters

- **type\_constraint** – the type constraint of the node. Must be one of the keys of `dokomoforms.models.survey.NODE_TYPES`
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the `Node` subtypes

**Raises** `dokomoforms.exc.NoSuchNodeTypeError`

## dokomoforms.models.submission module

Submission models.

**class** `dokomoforms.models.submission.EnumeratorOnlySubmission(**kwargs)`  
Bases: `dokomoforms.models.submission.Submission`

An `EnumeratorOnlySubmission` must have an enumerator.

Use an `EnumeratorOnlySubmission` for an `EnumeratorOnlySurvey`.

**\_\_init\_\_** (*\*\*kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`answers`  
`deleted`  
`enumerator`  
`enumerator_user_id`  
`id`  
`last_update_time`  
`save_time`  
`start_time`  
`submission_time`

**submission\_type**  
**submitter\_email**  
**submitter\_name**  
**survey\_containing\_id**  
**survey\_default\_language**  
**survey\_id**  
**survey\_title**  
**survey\_type**  
**the\_survey\_id**

**class** dokomoforms.models.submission.**PublicSubmission** (\*\*kwargs)

Bases: *dokomoforms.models.submission.Submission*

A PublicSubmission might have an enumerator.

Use a PublicSubmission for a Survey.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**answers**  
**deleted**  
**enumerator**  
**enumerator\_user\_id**  
**id**  
**last\_update\_time**  
**save\_time**  
**start\_time**  
**submission\_time**  
**submission\_type**  
**submitter\_email**  
**submitter\_name**  
**survey\_containing\_id**  
**survey\_default\_language**  
**survey\_id**  
**survey\_title**  
**survey\_type**

`class dokomoforms.models.submission.Submission (**kwargs)`

Bases: `dokomoforms.models.util.Base`

A Submission references a Survey and has a list of Answers.

`__init__ (**kwargs)`

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`answers`

`deleted`

`id`

`last_update_time`

`save_time`

`start_time`

`submission_time`

`submission_type`

`submitter_email`

`submitter_name`

`survey_containing_id`

`survey_default_language`

`survey_id`

`survey_title`

`survey_type`

`dokomoforms.models.submission.construct_submission (*, submission_type: str, **kwargs) → dokomoforms.models.submission.Submission`

Return a subclass of `dokomoforms.models.submission.Submission`.

The subclass is determined by the `submission_type` parameter. This utility function makes it easy to create an instance of a Submission subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

**Parameters**

- **submission\_type** – the type of submission. Must be either 'public\_submission' or 'enumerator\_only\_submission'
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Node subtypes

**Raises** `dokomoforms.exc.NoSuchSubmissionTypeError`

`dokomoforms.models.submission.most_recent_submissions (session, user_id, limit=None)`

Get an administrator's surveys' most recent submissions.

**dokomofoms.models.survey module**

Survey models.

**class** dokomofoms.models.survey.**AnswerableSurveyNode** (\*\*kwargs)

Bases: *dokomofoms.models.survey.SurveyNode*

Contains a Node which is answerable (e.g, a Question).

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know**

**allow\_multiple**

**allow\_other**

**answer\_count**

**answers**

**containing\_survey\_id**

**deleted**

**id**

**last\_update\_time**

**logic**

**node**

**node\_id**

**node\_languages**

**node\_number**

**non\_null\_repeatable**

**required**

**root\_survey\_id**

**root\_survey\_languages**

**sub\_survey\_id**

**sub\_survey\_repeatable**

**sub\_surveys**

**survey\_node\_answerable**

**the\_containing\_survey\_id**

**the\_node**

**the\_node\_id**

**the\_node\_languages**

**the\_root\_survey\_languages**

**the\_sub\_survey\_repeatable**

**the\_type\_constraint**

**type\_constraint**

**class** dokomoforms.models.survey.**Bucket** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A Bucket determines how to arrive at a SubSurvey.

A Bucket can be a range or a Choice.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**bucket**

The bucket is a range or Choice.

Buckets for a given SubSurvey cannot overlap.

**bucket\_type**

**deleted**

**id**

**last\_update\_time**

**sub\_survey\_id**

**sub\_survey\_parent\_node\_id**

**sub\_survey\_parent\_survey\_node\_id**

**sub\_survey\_parent\_type\_constraint**

**class** dokomoforms.models.survey.**DateBucket** (\*\*kwargs)

Bases: *dokomoforms.models.survey.\_RangeBucketMixin*, *dokomoforms.models.survey.Bucket*

DATERANGE bucket.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**bucket**

**bucket\_type**

**deleted**

**id**

**last\_update\_time**

**sub\_survey\_id**

**sub\_survey\_parent\_node\_id**

**sub\_survey\_parent\_survey\_node\_id**  
**sub\_survey\_parent\_type\_constraint**  
**the\_survey\_node\_id**

**class** dokomofoms.models.survey.**DecimalBucket** (\*\*kwargs)  
 Bases: dokomofoms.models.survey.\_RangeBucketMixin, *dokomofoms.models.survey.Bucket*  
 NUMRANGE bucket.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**bucket**

**bucket\_type**

**deleted**

**id**

**last\_update\_time**

**sub\_survey\_id**

**sub\_survey\_parent\_node\_id**

**sub\_survey\_parent\_survey\_node\_id**

**sub\_survey\_parent\_type\_constraint**

**the\_survey\_node\_id**

**class** dokomofoms.models.survey.**EnumeratorOnlySurvey** (\*\*kwargs)  
 Bases: *dokomofoms.models.survey.Survey*

Only enumerators (designated Users) can submit to this.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**administrators**

**containing\_id**

**created\_on**

**creator\_id**

**default\_language**

**deleted**

**earliest\_submission\_time**

**enumerators**

**id**

languages  
last\_update\_time  
latest\_submission\_time  
nodes  
num\_submissions  
submissions  
survey\_metadata  
survey\_type  
title  
url\_slug  
version

**class** dokomoforms.models.survey.**IntegerBucket** (\*\*kwargs)  
Bases: dokomoforms.models.survey.\_RangeBucketMixin, *dokomoforms.models.survey.Bucket*

INT4RANGE bucket.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

bucket  
bucket\_type  
deleted  
id  
last\_update\_time  
sub\_survey\_id  
sub\_survey\_parent\_node\_id  
sub\_survey\_parent\_survey\_node\_id  
sub\_survey\_parent\_type\_constraint  
the\_survey\_node\_id

**class** dokomoforms.models.survey.**MultipleChoiceBucket** (\*\*kwargs)  
Bases: *dokomoforms.models.survey.Bucket*

Choice id bucket.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

bucket

**bucket\_type**  
**choice\_id**  
**deleted**  
**id**  
**last\_update\_time**  
**parent\_node\_id**  
**parent\_survey\_node\_id**  
**sub\_survey\_id**  
**sub\_survey\_parent\_node\_id**  
**sub\_survey\_parent\_survey\_node\_id**  
**sub\_survey\_parent\_type\_constraint**  
**the\_sub\_survey\_id**

**class** dokomofoms.models.survey.**NonAnswerableSurveyNode** (\*\*kwargs)  
 Bases: *dokomofoms.models.survey.SurveyNode*

Contains a Node which is not answerable (e.g., a Note).

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**containing\_survey\_id**  
**deleted**  
**id**  
**last\_update\_time**  
**logic**  
**node**  
**node\_id**  
**node\_languages**  
**node\_number**  
**non\_null\_repeatable**  
**root\_survey\_id**  
**root\_survey\_languages**  
**sub\_survey\_id**  
**sub\_survey\_repeatable**  
**survey\_node\_answerable**  
**the\_node**  
**the\_node\_id**

**the\_type\_constraint**

**type\_constraint**

**class** dokomoforms.models.survey.**SubSurvey** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A SubSurvey behaves like a Survey but belongs to a SurveyNode.

The way to arrive at a certain SubSurvey is encoded in its buckets.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**buckets**

**containing\_survey\_id**

**deleted**

**id**

**nodes**

**parent\_allow\_multiple**

**parent\_node\_id**

**parent\_survey\_node\_id**

**parent\_type\_constraint**

**repeatable**

**root\_survey\_languages**

**sub\_survey\_number**

**class** dokomoforms.models.survey.**Survey** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A Survey has a list of SurveyNodes.

Use an EnumeratorOnlySurvey to restrict submissions to enumerators.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**administrators**

**containing\_id**

**created\_on**

**creator\_id**

**default\_language**

**deleted**

```

earliest_submission_time
id
languages
last_update_time
latest_submission_time
nodes
num_submissions
submissions
survey_metadata
survey_type
title
url_slug
version

```

```

class dokomofoms.models.survey.SurveyNode (**kwargs)
    Bases: dokomofoms.models.util.Base

```

A SurveyNode contains a Node and adds survey-specific metadata.

```

__init__ (**kwargs)

```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

containing_survey_id
deleted
id
last_update_time
logic
node
    The Node instance.
node_id
node_languages
node_number
non_null_repeatable
root_survey_id
root_survey_languages
sub_survey_id
sub_survey_repeatable
survey_node_answerable

```

`the_node`

`type_constraint`

**class** `dokomoforms.models.survey.TimestampBucket` (\*\*kwargs)

Bases: `dokomoforms.models.survey._RangeBucketMixin`, `dokomoforms.models.survey.Bucket`

TSTZRANGE bucket.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`bucket`

`bucket_type`

`deleted`

`id`

`last_update_time`

`sub_survey_id`

`sub_survey_parent_node_id`

`sub_survey_parent_survey_node_id`

`sub_survey_parent_type_constraint`

`the_survey_node_id`

`dokomoforms.models.survey.administrator_filter` (`user_id`)

Filter a query by administrator id.

`dokomoforms.models.survey.construct_bucket` (\*, `bucket_type: str`, \*\*kwargs) → `dokomoforms.models.survey.Bucket`

Return a subclass of `dokomoforms.models.survey.Bucket`.

The subclass is determined by the `bucket_type` parameter. This utility function makes it easy to create an instance of a `Bucket` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

**Parameters**

- **bucket\_type** – the type of the bucket. Must be one of the keys of `dokomoforms.models.survey.BUCKET_TYPES`
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the `Bucket` subtypes

**Raises** `dokomoforms.exc.NoSuchBucketTypeError`

`dokomoforms.models.survey.construct_survey` (\*, `survey_type: str`, \*\*kwargs)

Construct either a public or `enumerator_only` `Survey`.

`dokomoforms.models.survey.construct_survey_node` (\*\*kwargs) → `dokomoforms.models.survey.SurveyNode`

Return a subclass of `dokomoforms.models.survey.SurveyNode`.

The subclass is determined by the `type_constraint` parameter. This utility function makes it easy to create an instance of a `SurveyNode` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

**Parameters** `kwargs` – the keyword arguments to pass to the constructor

**Returns** an instance of one of the `Node` subtypes

`dokomoforms.models.survey.most_recent_surveys` (*session, user\_id, limit=None*)

Get an administrator's most recent surveys.

`dokomoforms.models.survey.skipped_required` (*survey, answers*) → str

Return the id of a skipped `AnswerableSurveyNode`, or `None`.

## dokomoforms.models.user module

User models.

**class** `dokomoforms.models.user.Administrator` (*\*\*kwargs*)

Bases: `dokomoforms.models.user.User`

A User who can create Surveys and add Users.

Regular users can answer surveys, but only `Administrator` instances can create surveys.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**deleted**

**emails**

**id**

**last\_update\_time**

**name**

**preferences**

**role**

**surveys**

**token**

**token\_expiration**

**class** `dokomoforms.models.user.Email` (*\*\*kwargs*)

Bases: `dokomoforms.models.util.Base`

Models an e-mail address.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**address**  
**deleted**  
**id**  
**last\_update\_time**  
**user\_id**

**class** dokomoforms.models.user.**User** (\*\*kwargs)  
Bases: *dokomoforms.models.util.Base*

Models a user. A user has at least one e-mail address.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**deleted**  
**emails**  
**id**  
**last\_update\_time**  
**name**  
**preferences**  
**role**

dokomoforms.models.user.**construct\_user** (\*, role: str, \*\*kwargs)  
Construct either an enumerator or an administrator.

## dokomoforms.models.util module

Useful reusable functions for models.

Models should inherit from dokomoforms.models.util.Base, and should almost certainly make use of the dokomoforms.models.util.pk and dokomoforms.models.util.last\_update\_time

The SQLAlchemy documentation suggests setting those columns in the base class or using class mixins, but it makes it less explicit which columns exist when looking at the models' definitions.

**class** dokomoforms.models.util.**Base** (\*\*kwargs)  
Bases: abc.Base

The base class for all Dokomo Forms models.

**deleted** = Column(None, Boolean(), table=None, nullable=False, server\_default=DefaultClause('false', for\_update=False))

**class** dokomoforms.models.util.**ModelJSONEncoder** (skipkeys=False, ensure\_ascii=True, check\_circular=True, allow\_nan=True, sort\_keys=False, indent=None, separators=None, default=None)

Bases: json.encoder.JSONEncoder

This JSONEncoder handles the models in dokomoforms.models.

To use it manually, call:

```

json.dumps( model, cls=dokomoforms.models.util.ModelJSONEncoder, **kwargs
)

```

**default** (*obj*)

Handle special types for json.dumps.

If obj is a model from dokomoforms.models, return a dictionary representation.

If obj is a datetime.date or datetime.time, return an ISO 8601 representation string.

If obj is a psycopg2 Range, return its string representation.

Otherwise, throw a TypeError.

See <https://docs.python.org/3/library/json.html#json.JSONEncoder.default>

```

dokomoforms.models.util.column_search (query, *, model_cls, column_name, search_term, lan-
                                     guage=None, regex=False) → 'query'

```

Modify a query to search a column's values (JSONB or TEXT).

TODO: document this

#### Parameters

- **query** – a
- **model\_cls** – aa
- **column** – b
- **search\_term** – c
- **language** – d
- **regex** – r

**Returns** The modified query.

```

dokomoforms.models.util.create_engine (pool_size: int=None, max_overflow: int=None, echo:
                                     bool=None) → sqlalchemy.engine.base.Engine

```

Get a connection to the database.

Return a sqlalchemy.engine.Engine configured with the options set in dokomoforms.options.options

**Returns** a SQLAlchemy engine

```

dokomoforms.models.util.fk (column_name: str) → sqlalchemy.sql.schema.Column

```

A foreign key with ONUPDATE CASCADE and ONDELETE CASCADE.

Return a foreign key of type UUID for use in models.

The relationship CASCADEs on UPDATE and DELETE.

**Parameters** **column\_name** – the name of the referenced column

**Returns** a SQLAlchemy Column for a UUID primary key.

```

dokomoforms.models.util.get_fields_subset (model: dokomoforms.models.util.Base, fields:
                                     list) → collections.OrderedDict

```

Return the given fields for the model's dictionary representation.

```

dokomoforms.models.util.get_model (session, model_cls, model_id, exception=None)

```

Throw an error if session.query.get(model\_id) returns None.

```

dokomoforms.models.util.json_column (column_name: str, *, default=None) →
                                     sqlalchemy.sql.schema.Column

```

A JSONB column.

Return a column of type JSONB for use in models. Use this for entries like

```
<language>: <text>
```

**Parameters**

- **column\_name** – the name of the column
- **default** – the column default (default value None, meaning no column default)

**Returns** a SQLAlchemy Column for a non-null JSONB type.

`dokomoforms.models.util.jsonify(obj, *, raise_exception=False)` → object  
Convert the given object to something JSON can handle.

`dokomoforms.models.util.languages_column(column_name)` → `sqlalchemy.sql.schema.Column`  
A TEXT[] column of length > 0.

Return an ARRAY(TEXT, as\_tuple=True) column.

**Parameters** **column\_name** – the name of the column

**Returns** a SQLAlchemy Column for a non-null ARRAY(TEXT, as\_tuple=True) type.

`dokomoforms.models.util.languages_constraint(column_name, languages_column_name)` → `sqlalchemy.sql.schema.Constraint`

CHECK CONSTRAINT for a translatable column.

Checks that all of the languages in the languages column exist as keys in the translatable column.

**Parameters**

- **column\_name** – the name of the translatable column
- **languages\_column\_name** – the name of the TEXT[] column containing the languages.

**Returns** a SQLAlchemy Constraint to ensure that all the required translations are available.

`dokomoforms.models.util.last_update_time()` → `sqlalchemy.sql.schema.Column`  
A timestamp column set to CURRENT\_TIMESTAMP on update.

Return a column containing the time that a record was last updated.

**Returns** a SQLAlchemy Column for a datetime with time zone auto-updating column

`dokomoforms.models.util.pk(*foreign_key_column_names: str)` → `sqlalchemy.sql.schema.Column`  
A UUID primary key.

Return a standard primary key of type UUID for use in models. If the any foreign\_key\_column\_names are supplied, the primary key will reference the given columns.

**Parameters** **foreign\_key\_column\_names** – column names of the referenced foreign keys (should be 'table\_name.column\_name')

**Returns** a SQLAlchemy Column for a UUID primary key.

## Module contents

All the models used in Dokomo Forms.

`class dokomoforms.models.Base(**kwargs)`  
Bases: abc.Base

The base class for all Dokomo Forms models.

**deleted** = Column(None, Boolean(), table=None, nullable=False, server\_default=DefaultClause('false', for\_update=False))

`dokomoforms.models.create_engine` (*pool\_size: int=None, max\_overflow: int=None, echo: bool=None*) → sqlalchemy.engine.base.Engine

Get a connection to the database.

Return a sqlalchemy.engine.Engine configured with the options set in dokomoforms.options.options

**Returns** a SQLAlchemy engine

`dokomoforms.models.jsonify` (*obj, \*, raise\_exception=False*) → object

Convert the given object to something JSON can handle.

`dokomoforms.models.get_model` (*session, model\_cls, model\_id, exception=None*)

Throw an error if session.query.get(model\_id) returns None.

**class** `dokomoforms.models.ModelJSONEncoder` (*skipkeys=False, ensure\_ascii=True, check\_circular=True, allow\_nan=True, sort\_keys=False, indent=None, separators=None, default=None*)

Bases: `json.encoder.JSONEncoder`

This JSONEncoder handles the models in dokomoforms.models.

To use it manually, call:

```
json.dumps( model, cls=dokomoforms.models.util.ModelJSONEncoder, **kwargs
)
```

**default** (*obj*)

Handle special types for json.dumps.

If obj is a model from dokomoforms.models, return a dictionary representation.

If obj is a datetime.date or datetime.time, return an ISO 8601 representation string.

If obj is a psycopg2 Range, return its string representation.

Otherwise, throw a TypeError.

See <https://docs.python.org/3/library/json.html#json.JSONEncoder.default>

**class** `dokomoforms.models.User` (*\*\*kwargs*)

Bases: `dokomoforms.models.util.Base`

Models a user. A user has at least one e-mail address.

**\_\_init\_\_** (*\*\*kwargs*)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**deleted**

**emails**

**id**

**last\_update\_time**

**name**

**preferences**

**role**

**class** dokomoforms.models.**Administrator** (\*\*kwargs)

Bases: *dokomoforms.models.user.User*

A User who can create Surveys and add Users.

Regular users can answer surveys, but only Administrator instances can create surveys.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**deleted**

**emails**

**id**

**last\_update\_time**

**name**

**preferences**

**role**

**surveys**

**token**

**token\_expiration**

**class** dokomoforms.models.**Email** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

Models an e-mail address.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**address**

**deleted**

**id**

**last\_update\_time**

**user\_id**

dokomoforms.models.**construct\_user** (\*, *role: str*, \*\*kwargs)

Construct either an enumerator or an administrator.

**class** dokomoforms.models.**Node** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A node is a Note or Question independent of any Survey.

A node is its own entity. A node can be a `dokomoforms.models.survey.Note` or a `dokomoforms.models.survey.Question`.

**You can use this class for querying, e.g.** `session.query(Node).filter_by(title='Some Title')`

To create the specific kind of Node you want, use `dokomoforms.models.survey.node.construct_node`.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`title`

`type_constraint`

**class** `dokomoforms.models.Question` (\*\*kwargs)

Bases: `dokomoforms.models.node.Node`

A Question has a response type associated with it.

A Question has a type constraint associated with it (integer, date, text...). Only a `dokomoforms.models.survey.MultipleChoiceQuestion` has a list of `dokomoforms.models.survey.Choice` instances.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`

`allow_other`

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`the_languages`

`the_type_constraint`

`title`

### `type_constraint`

`dokomoforms.models.construct_node`(\**, type\_constraint: str, \*\*kwargs*) → `dokomoforms.models.node.Node`

Return a subclass of `dokomoforms.models.node.Node`.

The subclass is determined by the `type_constraint` parameter. This utility function makes it easy to create an instance of a `Node` or `Question` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

#### Parameters

- **`type_constraint`** – the type constraint of the node. Must be one of the keys of `dokomoforms.models.survey.NODE_TYPES`
- **`kwargs`** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the `Node` subtypes

**Raises** `dokomoforms.exc.NoSuchNodeTypeError`

**class** `dokomoforms.models.Note`(\**kwargs*)

Bases: `dokomoforms.models.node.Node`

Notes provide information interspersed with survey questions.

`__init__`(\**kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance’s class are allowed. These could be, for example, any mapped columns or relationships.

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`the_type_constraint`

`title`

`type_constraint`

**class** `dokomoforms.models.TextQuestion`(\**kwargs*)

Bases: `dokomoforms.models.node._QuestionMixin`, `dokomoforms.models.node.Question`

A text question.

`__init__`(\**kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance’s class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`

`allow_other`

**deleted**  
**hint**  
**id**  
**languages**  
**last\_update\_time**  
**logic**  
**the\_languages**  
**the\_type\_constraint**  
**title**  
**type\_constraint**

**class** dokomofoms.models.**PhotoQuestion** (\*\*kwargs)

Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A photo question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**  
**allow\_other**  
**deleted**  
**hint**  
**id**  
**languages**  
**last\_update\_time**  
**logic**  
**the\_languages**  
**the\_type\_constraint**  
**title**  
**type\_constraint**

**class** dokomofoms.models.**IntegerQuestion** (\*\*kwargs)

Bases: dokomofoms.models.node.\_QuestionMixin, *dokomofoms.models.node.Question*

A integer question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**  
**allow\_other**  
**deleted**  
**hint**  
**id**  
**languages**  
**last\_update\_time**  
**logic**  
**the\_languages**  
**the\_type\_constraint**  
**title**  
**type\_constraint**

**class** dokomoforms.models.**DecimalQuestion** (\*\*kwargs)

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A decimal question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_multiple**  
**allow\_other**  
**deleted**  
**hint**  
**id**  
**languages**  
**last\_update\_time**  
**logic**  
**the\_languages**  
**the\_type\_constraint**  
**title**  
**type\_constraint**

**class** dokomoforms.models.**DateQuestion** (\*\*kwargs)

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A date question.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

allow_multiple
allow_other
deleted
hint
id
languages
last_update_time
logic
the_languages
the_type_constraint
title
type_constraint

```

```
class dokomoforms.models.TimeQuestion (**kwargs)
```

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A time (with time zone) question.

```
__init__ (**kwargs)
```

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

```

allow_multiple
allow_other
deleted
hint
id
languages
last_update_time
logic
the_languages
the_type_constraint
title
type_constraint

```

```
class dokomoforms.models.TimestampQuestion (**kwargs)
```

Bases: dokomoforms.models.node.\_QuestionMixin, *dokomoforms.models.node.Question*

A timestamp (with time zone) question.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`

`allow_other`

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`the_languages`

`the_type_constraint`

`title`

`type_constraint`

**class** `dokomoforms.models.LocationQuestion` (\*\*kwargs)

Bases: `dokomoforms.models.node._QuestionMixin`, `dokomoforms.models.node.Question`

A location question.

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_multiple`

`allow_other`

`deleted`

`hint`

`id`

`languages`

`last_update_time`

`logic`

`the_languages`

`the_type_constraint`

`title`

`type_constraint`

---

```
class dokomoforms.models.FacilityQuestion (**kwargs)
    Bases: dokomoforms.models.node._QuestionMixin, dokomoforms.models.node.Question

    A facility question.

    __init__ (**kwargs)
        A simple constructor that allows initialization from kwargs.

        Sets attributes on the constructed instance using the names and values in kwargs.

        Only keys that are present as attributes of the instance's class are allowed. These could be, for example,
        any mapped columns or relationships.

allow_multiple
allow_other
deleted
hint
id
languages
last_update_time
logic
the_languages
the_type_constraint
title
type_constraint
```

```
class dokomoforms.models.MultipleChoiceQuestion (**kwargs)
    Bases: dokomoforms.models.node._QuestionMixin, dokomoforms.models.node.Question

    A multiple_choice question.

    __init__ (**kwargs)
        A simple constructor that allows initialization from kwargs.

        Sets attributes on the constructed instance using the names and values in kwargs.

        Only keys that are present as attributes of the instance's class are allowed. These could be, for example,
        any mapped columns or relationships.

allow_multiple
allow_other
choices
deleted
hint
id
languages
last_update_time
logic
node_languages
```

**the\_languages**

**the\_type\_constraint**

**title**

**type\_constraint**

**class** dokomoforms.models.**Choice** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A choice for a MultipleChoiceQuestion.

Models a choice for a dokomoforms.models.survey.MultipleChoiceQuestion.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**choice\_number**

**choice\_text**

**deleted**

**id**

**last\_update\_time**

**question\_id**

**question\_languages**

**class** dokomoforms.models.**Survey** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A Survey has a list of SurveyNodes.

Use an EnumeratorOnlySurvey to restrict submissions to enumerators.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**administrators**

**containing\_id**

**created\_on**

**creator\_id**

**default\_language**

**deleted**

**earliest\_submission\_time**

**id**

**languages**

**last\_update\_time**  
**latest\_submission\_time**  
**nodes**  
**num\_submissions**  
**submissions**  
**survey\_metadata**  
**survey\_type**  
**title**  
**url\_slug**  
**version**

**class** dokomofoms.models.**EnumeratorOnlySurvey** (\*\*kwargs)

Bases: *dokomofoms.models.survey.Survey*

Only enumerators (designated Users) can submit to this.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**administrators**  
**containing\_id**  
**created\_on**  
**creator\_id**  
**default\_language**  
**deleted**  
**earliest\_submission\_time**  
**enumerators**  
**id**  
**languages**  
**last\_update\_time**  
**latest\_submission\_time**  
**nodes**  
**num\_submissions**  
**submissions**  
**survey\_metadata**  
**survey\_type**  
**title**  
**url\_slug**

**version**

**class** dokomoforms.models.**SubSurvey** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A SubSurvey behaves like a Survey but belongs to a SurveyNode.

The way to arrive at a certain SubSurvey is encoded in its buckets.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**buckets**

**containing\_survey\_id**

**deleted**

**id**

**nodes**

**parent\_allow\_multiple**

**parent\_node\_id**

**parent\_survey\_node\_id**

**parent\_type\_constraint**

**repeatable**

**root\_survey\_languages**

**sub\_survey\_number**

**class** dokomoforms.models.**SurveyNode** (\*\*kwargs)

Bases: *dokomoforms.models.util.Base*

A SurveyNode contains a Node and adds survey-specific metadata.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**containing\_survey\_id**

**deleted**

**id**

**last\_update\_time**

**logic**

**node**

The Node instance.

**node\_id**

**node\_languages**  
**node\_number**  
**non\_null\_repeatable**  
**root\_survey\_id**  
**root\_survey\_languages**  
**sub\_survey\_id**  
**sub\_survey\_repeatable**  
**survey\_node\_answerable**  
**the\_node**  
**type\_constraint**

`dokomofoms.models.construct_survey` (\*, *survey\_type*: str, *\*\*kwargs*)  
 Construct either a public or enumerator\_only Survey.

**class** `dokomofoms.models.NonAnswerableSurveyNode` (*\*\*kwargs*)  
 Bases: `dokomofoms.models.survey.SurveyNode`

Contains a Node which is not answerable (e.g., a Note).

**\_\_init\_\_** (*\*\*kwargs*)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in *kwargs*.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**containing\_survey\_id**  
**deleted**  
**id**  
**last\_update\_time**  
**logic**  
**node**  
**node\_id**  
**node\_languages**  
**node\_number**  
**non\_null\_repeatable**  
**root\_survey\_id**  
**root\_survey\_languages**  
**sub\_survey\_id**  
**sub\_survey\_repeatable**  
**survey\_node\_answerable**  
**the\_node**  
**the\_node\_id**

`the_type_constraint`

`type_constraint`

**class** `dokomoforms.models.AnswerableSurveyNode` (\*\*kwargs)

Bases: `dokomoforms.models.survey.SurveyNode`

Contains a Node which is answerable (e.g, a Question).

`__init__` (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`allow_dont_know`

`allow_multiple`

`allow_other`

`answer_count`

`answers`

`containing_survey_id`

`deleted`

`id`

`last_update_time`

`logic`

`node`

`node_id`

`node_languages`

`node_number`

`non_null_repeatable`

`required`

`root_survey_id`

`root_survey_languages`

`sub_survey_id`

`sub_survey_repeatable`

`sub_surveys`

`survey_node_answerable`

`the_containing_survey_id`

`the_node`

`the_node_id`

`the_node_languages`

`the_root_survey_languages`

`the_sub_survey_repeatable`

`the_type_constraint`

`type_constraint`

`dokomoforms.models.construct_survey_node(**kwargs)` → `dokomoforms.models.survey.SurveyNode`

Return a subclass of `dokomoforms.models.survey.SurveyNode`.

The subclass is determined by the `type_constraint` parameter. This utility function makes it easy to create an instance of a `SurveyNode` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

**Parameters** `kwargs` – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Node subtypes

`dokomoforms.models.construct_bucket(*, bucket_type: str, **kwargs)` → `dokomoforms.models.survey.Bucket`

Return a subclass of `dokomoforms.models.survey.Bucket`.

The subclass is determined by the `bucket_type` parameter. This utility function makes it easy to create an instance of a `Bucket` subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

**Parameters**

- `bucket_type` – the type of the bucket. Must be one of the keys of `dokomoforms.models.survey.BUCKET_TYPES`
- `kwargs` – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Bucket subtypes

**Raises** `dokomoforms.exc.NoSuchBucketTypeError`

`dokomoforms.models.skipped_required(survey, answers)` → `str`

Return the id of a skipped `AnswerableSurveyNode`, or `None`.

`dokomoforms.models.administrator_filter(user_id)`

Filter a query by administrator id.

`dokomoforms.models.most_recent_surveys(session, user_id, limit=None)`

Get an administrator's most recent surveys.

**class** `dokomoforms.models.Submission(**kwargs)`

Bases: `dokomoforms.models.util.Base`

A `Submission` references a `Survey` and has a list of `Answers`.

`__init__` (`**kwargs`)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`answers`

`deleted`

`id`

`last_update_time`

`save_time`  
`start_time`  
`submission_time`  
`submission_type`  
`submitter_email`  
`submitter_name`  
`survey_containing_id`  
`survey_default_language`  
`survey_id`  
`survey_title`  
`survey_type`

**class** `dokomoforms.models.EnumeratorOnlySubmission` (*\*\*kwargs*)

Bases: `dokomoforms.models.submission.Submission`

An `EnumeratorOnlySubmission` must have an enumerator.

Use an `EnumeratorOnlySubmission` for an `EnumeratorOnlySurvey`.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from `kwargs`.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

`answers`  
`deleted`  
`enumerator`  
`enumerator_user_id`  
`id`  
`last_update_time`  
`save_time`  
`start_time`  
`submission_time`  
`submission_type`  
`submitter_email`  
`submitter_name`  
`survey_containing_id`  
`survey_default_language`  
`survey_id`  
`survey_title`  
`survey_type`

**the\_survey\_id**

**class** dokomoforms.models.**PublicSubmission** (\*\*kwargs)  
 Bases: *dokomoforms.models.submission.Submission*

A PublicSubmission might have an enumerator.

Use a PublicSubmission for a Survey.

**\_\_init\_\_** (\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**answers**

**deleted**

**enumerator**

**enumerator\_user\_id**

**id**

**last\_update\_time**

**save\_time**

**start\_time**

**submission\_time**

**submission\_type**

**submitter\_email**

**submitter\_name**

**survey\_containing\_id**

**survey\_default\_language**

**survey\_id**

**survey\_title**

**survey\_type**

dokomoforms.models.**construct\_submission**(\*, *submission\_type: str*, \*\*kwargs) → dokomoforms.models.submission.Submission

Return a subclass of dokomoforms.models.submission.Submission.

The subclass is determined by the *submission\_type* parameter. This utility function makes it easy to create an instance of a Submission subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

#### Parameters

- **submission\_type** – the type of submission. Must be either 'public\_submission' or 'enumerator\_only\_submission'
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Node subtypes

**Raises** dokomoforms.exc.NoSuchSubmissionTypeError

`dokomoforms.models.most_recent_submissions` (*session, user\_id, limit=None*)

Get an administrator's surveys' most recent submissions.

**class** `dokomoforms.models.Answer` (*\*\*kwargs*)

Bases: `dokomoforms.models.util.Base`

An Answer is a response to a SurveyNode.

An Answer can be one of an answer, an "other" response or a "don't know" response. Answer.response abstracts over these 3 possibilities.

`__init__` (*\*\*kwargs*)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in `kwargs`.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**allow\_dont\_know**

**allow\_multiple**

**allow\_other**

**answer**

The answer. Could be the same as `main_answer` in simple cases.

This property is the most useful representation available of the answer. In the simplest case it is just a synonym for `main_answer`. It could otherwise be a dictionary or another model.

**answer\_metadata**

**answer\_number**

**answer\_type**

**deleted**

**dont\_know**

A text field containing "don't know" responses.

**id**

**last\_update\_time**

**main\_answer**

The representative part of a provided answer.

The `main_answer` is the only answer for simple types (integer, text, etc.) and for other types is the part of the answer that is most important. In practice, the `main_answer` is special only in that all Answer models have it, which is necessary for certain constraints and for the response property.

**other**

A text field containing "other" responses.

**question\_id**

**question\_title**

**repeatable**

**response** = `OrderedDict([('type_constraint', <sqlalchemy.orm.attributes.InstrumentedAttribute object at 0x7f8671664a`

**save\_time**

**submission\_id**

**survey\_containing\_id**  
**survey\_id**  
**survey\_node**  
**survey\_node\_containing\_survey\_id**  
**survey\_node\_id**  
**type\_constraint**

**class** dokomoforms.models.**Photo**(\*\*kwargs)  
 Bases: *dokomoforms.models.util.Base*

A BYTEA holding an image.

**\_\_init\_\_**(\*\*kwargs)

A simple constructor that allows initialization from kwargs.

Sets attributes on the constructed instance using the names and values in kwargs.

Only keys that are present as attributes of the instance's class are allowed. These could be, for example, any mapped columns or relationships.

**created\_on**

**deleted**

**id**

**image**

**mime\_type**

dokomoforms.models.**construct\_answer**(\*, *type\_constraint: str*, \*\*kwargs) → dokomoforms.models.answer.**Answer**

Return a subclass of dokomoforms.models.answer.**Answer**.

The subclass is determined by the *type\_constraint* parameter. This utility function makes it easy to create an instance of an Answer subclass based on external input.

See <http://stackoverflow.com/q/30518484/1475412>

#### Parameters

- **type\_constraint** – the type of the answer. Must be one of the keys of dokomoforms.models.answer.ANSWER\_TYPES
- **kwargs** – the keyword arguments to pass to the constructor

**Returns** an instance of one of the Answer subtypes

**Raises** dokomoforms.exc.NotAnAnswerTypeError

dokomoforms.models.**add\_new\_photo\_to\_session**(*session*, \*, *id*, \*\*kwargs)

Create a new Photo and update the referenced PhotoAnswer.

dokomoforms.models.**answer\_min**(*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)

Get the minimum answer.

dokomoforms.models.**answer\_max**(*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)

Get the maximum answer.

dokomoforms.models.**answer\_sum**(*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)

Get the sum of the answers.

`dokomoforms.models.answer_avg` (*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)  
Get the average of the answers.

`dokomoforms.models.answer_mode` (*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)  
Get the mode of the answers.

`dokomoforms.models.answer_stddev_pop` (*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)  
Get the population standard deviation of the answers.

`dokomoforms.models.answer_stddev_samp` (*survey\_node: dokomoforms.models.survey.AnswerableSurveyNode*)  
Get the sample standard deviation of the answers.

`dokomoforms.models.generate_question_stats` (*survey*)  
Get answer statistics for the nodes in a survey.

## 1.2 Submodules

### 1.3 dokomoforms.exc module

The base exception class is *DokomoError*.

**exception** `dokomoforms.exc.DokomoError`

Bases: `Exception`

The base class for all exceptions used in Dokomo Forms.

**exception** `dokomoforms.exc.InvalidTypeForOperation`

Bases: `dokomoforms.exc.DokomoError`

Invalid type for the selected aggregation function.

For instance, you can't find the maximum of a text answer.

**exception** `dokomoforms.exc.NoSuchBucketTypeError`

Bases: `dokomoforms.exc.DokomoError`

Invalid `type_constraint` for `construct_bucket`.

Raised when `dokomoforms.models.survey.construct_bucket` is called with an invalid `type_constraint`.

The valid `type_constraints` are the keys of `dokomoforms.models.survey.BUCKET_TYPES`.

**exception** `dokomoforms.exc.NoSuchNodeTypeError`

Bases: `dokomoforms.exc.DokomoError`

Invalid `type_constraint` for `construct_node`.

Raised when `dokomoforms.models.node.construct_node` is called with an invalid `type_constraint`.

The valid `type_constraints` are the keys of `dokomoforms.models.node.NODE_TYPES`.

**exception** `dokomoforms.exc.NoSuchSubmissionTypeError`

Bases: `dokomoforms.exc.DokomoError`

Invalid `submission_type` for `construct_submission`.

Raised when `dokomoforms.models.submission.construct_submission` is called with an invalid `submission_type`.

The valid types are 'unauthenticated' and 'enumerator\_only\_submission'

**exception** `dokomofoms.exc.NotAResponseTypeError`Bases: `dokomofoms.exc.DokomoError`Invalid `response_type` `Answer.response.setter`.Raised when trying to set the response field on an Answer with an invalid `response_type`.The valid `response_types` are 'answer', 'other', and 'dont\_know'.**exception** `dokomofoms.exc.NotAnAnswerTypeError`Bases: `dokomofoms.exc.DokomoError`Invalid `type_constraint` for `construct_answer`.Raised when `dokomofoms.models.node.construct_answer` is called with an invalid `type_constraint`.The valid `type_constraints` are the keys of `dokomofoms.models.answer.ANSWER_TYPES`.**exception** `dokomofoms.exc.NotJSONifiableError`Bases: `dokomofoms.exc.DokomoError`

The jsonify function encountered a strange object.

**exception** `dokomofoms.exc.PhotoIdDoesNotExistError`Bases: `dokomofoms.exc.DokomoError`

The submitted photo ID does not exist in the database.

**exception** `dokomofoms.exc.RequiredQuestionSkipped`Bases: `dokomofoms.exc.DokomoError`

A submission has no answer for a required question.

**exception** `dokomofoms.exc.SurveyAccessForbidden`Bases: `dokomofoms.exc.DokomoError`

The logged-in user does not have access to the survey.

**exception** `dokomofoms.exc.UserRequiresEmailError`Bases: `dokomofoms.exc.DokomoError`

A user must have at least one e-mail address.

## 1.4 dokomofoms.options module

All the application options are defined here.

If you need to inject options at runtime (for testing, etc...):

```
from dokomofoms.options import parse_options
parse_options(name1=value1, name2=value2, ...)
```

## 1.5 Module contents

Top level module for Dokomo Forms.

All of the application code for Dokomofoms (outside of the `webapp.py` script) lives in this module.



---

**webapp module**

---



---

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