Package ‘stencilaschema’

February 22, 2021

Title Bindings for Stencila Schema

Description Provides R bindings for the Stencila Schema <https://schema.stenci.la>. This package is primarily aimed at R developers wanting to programmatically generate, or modify, executable documents.

URL https://github.com/stencila/schema#readme

BugReports https://github.com/stencila/schema/issues

License Apache License (>= 2)

Language en-gb

Version 1.0.0

Encoding UTF-8

Suggests covr, devtools, lintr, pkgdown, rhub, roxygen2, spelling, testthat

RoxygenNote 7.1.1

Collate 'typing.R' 'types.R'

NeedsCompilation no

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Repository CRAN

Date/Publication 2021-02-22 10:40:03 UTC

R topics documented:

Any .......................................................... 4
Array ......................................................... 4
ArrayValidator ............................................ 5
Article ....................................................... 6
as_scalar .................................................... 8
as_type ..................................................... 8
AudioObject ............................................... 9
BlockContent ............................................. 11
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BooleanValidator</td>
<td>12</td>
</tr>
<tr>
<td>Brand</td>
<td>12</td>
</tr>
<tr>
<td>check_property</td>
<td>13</td>
</tr>
<tr>
<td>Cite</td>
<td>14</td>
</tr>
<tr>
<td>CiteGroup</td>
<td>15</td>
</tr>
<tr>
<td>Code</td>
<td>15</td>
</tr>
<tr>
<td>CodeBlock</td>
<td>16</td>
</tr>
<tr>
<td>CodeBlockTypes</td>
<td>17</td>
</tr>
<tr>
<td>CodeChunk</td>
<td>17</td>
</tr>
<tr>
<td>CodeError</td>
<td>19</td>
</tr>
<tr>
<td>CodeExpression</td>
<td>20</td>
</tr>
<tr>
<td>CodeFragment</td>
<td>20</td>
</tr>
<tr>
<td>CodeFragmentTypes</td>
<td>21</td>
</tr>
<tr>
<td>CodeTypes</td>
<td>22</td>
</tr>
<tr>
<td>Collection</td>
<td>22</td>
</tr>
<tr>
<td>Comment</td>
<td>24</td>
</tr>
<tr>
<td>ConstantValidator</td>
<td>26</td>
</tr>
<tr>
<td>ContactPoint</td>
<td>27</td>
</tr>
<tr>
<td>ContactPointTypes</td>
<td>28</td>
</tr>
<tr>
<td>CreativeWork</td>
<td>28</td>
</tr>
<tr>
<td>CreativeWorkTypes</td>
<td>30</td>
</tr>
<tr>
<td>Datatable</td>
<td>31</td>
</tr>
<tr>
<td>DatatableColumn</td>
<td>33</td>
</tr>
<tr>
<td>Date</td>
<td>34</td>
</tr>
<tr>
<td>DefinedTerm</td>
<td>34</td>
</tr>
<tr>
<td>Delete</td>
<td>35</td>
</tr>
<tr>
<td>Emphasis</td>
<td>36</td>
</tr>
<tr>
<td>Entity</td>
<td>36</td>
</tr>
<tr>
<td>EntityTypes</td>
<td>37</td>
</tr>
<tr>
<td>Enum</td>
<td>37</td>
</tr>
<tr>
<td>EnumValidator</td>
<td>38</td>
</tr>
<tr>
<td>Figure</td>
<td>38</td>
</tr>
<tr>
<td>Function</td>
<td>40</td>
</tr>
<tr>
<td>Grant</td>
<td>41</td>
</tr>
<tr>
<td>GrantTypes</td>
<td>42</td>
</tr>
<tr>
<td>Heading</td>
<td>43</td>
</tr>
<tr>
<td>ImageObject</td>
<td>43</td>
</tr>
<tr>
<td>Include</td>
<td>46</td>
</tr>
<tr>
<td>InlineContent</td>
<td>46</td>
</tr>
<tr>
<td>IntegerValidator</td>
<td>47</td>
</tr>
<tr>
<td>is_class</td>
<td>48</td>
</tr>
<tr>
<td>is_type</td>
<td>48</td>
</tr>
<tr>
<td>last_class</td>
<td>49</td>
</tr>
<tr>
<td>Link</td>
<td>49</td>
</tr>
<tr>
<td>List</td>
<td>50</td>
</tr>
<tr>
<td>ListItem</td>
<td>51</td>
</tr>
<tr>
<td>Mark</td>
<td>52</td>
</tr>
<tr>
<td>MarkTypes</td>
<td>52</td>
</tr>
</tbody>
</table>
R topics documented:

Math ................................................................. 53
MathBlock ......................................................... 53
MathFragment ...................................................... 54
MathTypes .......................................................... 55
MediaObject ......................................................... 55
MediaObjectTypes .................................................. 58
MonetaryGrant ..................................................... 58
Node ................................................................. 59
NontextualAnnotation ............................................. 60
NumberValidator .................................................. 60
NumberValidatorTypes ........................................... 61
Organization ......................................................... 62
Paragraph ........................................................... 63
Parameter ........................................................... 64
Periodical ............................................................ 65
Person ............................................................... 67
PostalAddress ....................................................... 68
Product .............................................................. 70
PropertyValue ......................................................... 71
PublicationIssue ..................................................... 72
PublicationVolume ................................................... 74
Quote ................................................................. 76
QuoteBlock .......................................................... 77
Review ............................................................... 78
SoftwareApplication ................................................. 80
SoftwareEnvironment ............................................. 82
SoftwareSession .................................................... 83
SoftwareSourceCode .............................................. 85
StringValidator ...................................................... 87
Strong ............................................................... 88
Subscript ............................................................ 88
Superscript .......................................................... 89
Table ................................................................. 89
TableCell ............................................................ 92
TableRow ............................................................. 92
ThematicBreak ....................................................... 93
Thing ................................................................. 93
ThingTypes .......................................................... 94
TupleValidator ....................................................... 95
Union ................................................................. 95
ValidatorTypes ....................................................... 96
Variable ............................................................. 96
VariableTypes ....................................................... 97
VideoObject .......................................................... 97
VolumeMount ........................................................ 100

Index  102
<table>
<thead>
<tr>
<th>Any</th>
<th>Any type</th>
</tr>
</thead>
</table>

**Description**

Any type

**Usage**

Any()

**Value**

A list of class Any

**Examples**

Any()

---

<table>
<thead>
<tr>
<th>Array</th>
<th>Array type</th>
</tr>
</thead>
</table>

**Description**

Array type

**Usage**

Array(items)

**Arguments**

items  
The type that items in the array should be

**Value**

A list of class Array describing the valid items of an array

**Examples**

Array(numeric)  
Array("numeric")  
Array(Person)  
Array(Union(character, Person))
ArrayValidator

A validator specifying constraints on an array node.

Description

A validator specifying constraints on an array node.

Usage

```
ArrayValidator(
    contains,
    id,
    itemsValidator,
    maxItems,
    meta,
    minItems,
    uniqueItems
)
```

Arguments

- **contains**: An array node is valid if at least one of its items is valid against the contains schema.
- **id**: The identifier for this item.
- **itemsValidator**: Another validator node specifying the constraints on all items in the array.
- **maxItems**: An array node is valid if its size is less than, or equal to, this value.
- **meta**: Metadata associated with this item.
- **minItems**: An array node is valid if its size is greater than, or equal to, this value.
- **uniqueItems**: A flag to indicate that each value in the array should be unique.

Value

A list of class `ArrayValidator`

See Also

- **Entity**
**Article**

*An article, including news and scholarly articles.*

**Description**

An article, including news and scholarly articles.

**Usage**

```java
Article(
    about,
    alternateNames,
    authors,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    pageEnd,
    pageStart,
    pagination,
    parts,
    publisher,
    references,
    text,
    title,
    url,
    version
)
```
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses License documents that applies to this content, typically indicated by URL.
maintainers The people or organizations who maintain this CreativeWork.
meta Metadata associated with this item.
name The name of the item.
pagination Any description of pages that is not separated into pageStart and pageEnd; for example, "1-6, 9, 55".
parts Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher A publisher of the CreativeWork.
references References to other creative works, such as another publication, web page, scholarly article, etc.
text The textual content of this creative work.
title The title of the creative work.
url The URL of the item.
version The version of the creative work.
Value
A list of class Article

See Also
CreativeWork

---

**as_scalar**

*Declare that a node is scalar*

**Description**
Declare that a node is scalar

**Usage**
as_scalar(node)

**Arguments**
- **node**
  The node to declare as a scalar

**Value**
The node with the scalar class added to it

---

**as_type**

*Coerce a value to conform to the type Principally, marks values as scalar where possible*

**Description**
Coerce a value to conform to the type Principally, marks values as scalar where possible

**Usage**
as_type(value, type)

**Arguments**
- **value**
  The value to coerce
- **type**
  The type to coerce it to

**Value**
The value, possibly coerced to the type
**AudioObject**

---

**Description**

An audio file

**Usage**

```java
AudioObject(
    contentUrl,
    about,
    alternateNames,
    authors,
    bitrate,
    caption,
    comments,
    content,
    contentSize,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    embedUrl,
    format,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    parts,
    publisher,
    references,
    text,
    title,
    transcript,
    url,
```
version
)

Arguments

contentUrl URL for the actual bytes of the media object, for example the image file or video file. **Required.**

about The subject matter of the content.

alternateNames Alternate names (aliases) for the item.

authors The authors of this creative work.

bitrate Bitrate in megabits per second (Mbit/s, Mb/s, Mbps).

caption The caption for this audio recording.

comments Comments about this creative work.

content The structured content of this creative work c.f. property text.

contentSize File size in megabits (Mbit, Mb).

dateAccepted Date/time of acceptance.

dateCreated Date/time of creation.

dateModified Date/time of most recent modification.

datePublished Date of first publication.

dateReceived Date/time that work was received.

description A description of the item.

editors People who edited the CreativeWork.

embedUrl URL that can be used to embed the media on a web page via a specific media player.

format Media type (MIME type) as per http://www.iana.org/assignments/media-types/media-types.xhtml.

fundedBy Grants that funded the CreativeWork; reverse of fundedItems.

funders People or organizations that funded the CreativeWork.

genre Genre of the creative work, broadcast channel or group.

id The identifier for this item.

identifiers Any kind of identifier for any kind of Thing.

images Images of the item.

isPartOf An item or other CreativeWork that this CreativeWork is a part of.

keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.

licenses License documents that applies to this content, typically indicated by URL.

maintainers The people or organizations who maintain this CreativeWork.

meta Metadata associated with this item.

name The name of the item.
BlockContent

- **parts**: Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
- **publisher**: A publisher of the CreativeWork.
- **references**: References to other creative works, such as another publication, web page, scholarly article, etc.
- **text**: The textual content of this creative work.
- **title**: The title of the creative work.
- **transcript**: The transcript of this audio recording.
- **url**: The URL of the item.
- **version**: The version of the creative work.

**Value**

A list of class AudioObject

**See Also**

MediaObject

---

**BlockContent**

*Union type for valid block content.*

**Description**

Union type for valid block content.

**Usage**

BlockContent

**Format**

An object of class Union of length 1.

**Value**

A list of class Union describing valid subtypes of this type
**BooleanValidator**  
A schema specifying that a node must be a boolean value.

**Description**  
A schema specifying that a node must be a boolean value.

**Usage**  
BooleanValidator(id, meta)

**Arguments**
- **id**  
The identifier for this item.
- **meta**  
Metadata associated with this item.

**Value**  
A list of class BooleanValidator

**See Also**
- Entity

**Brand**  
A brand used by an organization or person for labeling a product, product group, or similar.

**Description**  
A brand used by an organization or person for labeling a product, product group, or similar.

**Usage**  
Brand(
  name,
  alternateNames,
  description,
  id,
  identifiers,
  images,
  logo,
  meta,
  reviews,
  url
)


check_property

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The name of the item. <strong>Required.</strong></td>
</tr>
<tr>
<td>alternateNames</td>
<td>Alternate names (aliases) for the item.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>logo</td>
<td>A logo associated with the brand.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>reviews</td>
<td>Reviews of the brand.</td>
</tr>
<tr>
<td>url</td>
<td>The URL of the item.</td>
</tr>
</tbody>
</table>

Value

A list of class Brand

See Also

**Thing**

---

**check_property**

Check that a value is present if required and conforms to the specified type for a property.

Description

Check that a value is present if required and conforms to the specified type for a property.

Usage

```
check_property(type_name, property_name, is_required, is_missing, type, value)
```

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>type_name</td>
<td>The name of the type that they property is on</td>
</tr>
<tr>
<td>property_name</td>
<td>The name of the property</td>
</tr>
<tr>
<td>is_required</td>
<td>Is a value for the property required?</td>
</tr>
<tr>
<td>is_missing</td>
<td>Is a value for the property missing?</td>
</tr>
<tr>
<td>type</td>
<td>The type to check against</td>
</tr>
<tr>
<td>value</td>
<td>The value to check</td>
</tr>
</tbody>
</table>

Value

The value, if it is valid, nothing otherwise
Cite

A reference to a CreativeWork that is cited in another CreativeWork.

Description

A reference to a CreativeWork that is cited in another CreativeWork.

Usage

Cite(
    target,  
    citationMode,  
    content,  
    id,  
    meta,  
    pageEnd,  
    pageStart,  
    pagination,  
    prefix,  
    suffix  
)

Arguments

target  The target of the citation (URL or reference ID). **Required.**
citationMode  How the cite is rendered in the surrounding text.
content  Optional structured content/text of this citation.
id  The identifier for this item.
meta  Metadata associated with this item.
pagination  The page on which the work ends; for example "138" or "xvi".
pageStart  The page on which the work starts; for example "135" or "xiii".
pagination  Any description of pages that is not separated into pageStart and pageEnd; for example, "1-6, 9, 55".
prefix  A prefix to show before the citation.
suffix  A suffix to show after the citation.

Value

A list of class Cite

See Also

Entity
## CiteGroup

A group of Cite nodes

### Usage

```python
CiteGroup(items, id, meta)
```

### Arguments

- **items**: One or more Cites to be referenced in the same surrounding text. **Required**.
- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.

### Value

A list of class CiteGroup

### See Also

- **Entity**

## Code

Base type for code nodes e.g. CodeBlock, CodeExpression.

### Description

Base type for code nodes e.g. CodeBlock, CodeExpression.

### Usage

```python
Code(text, format, id, meta, programmingLanguage)
```

### Arguments

- **text**: The text of the code. **Required**.
- **format**: Media type, typically expressed using a MIME format, of the code.
- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.
- **programmingLanguage**: The programming language of the code.
CodeBlock

Value

A list of class Code

See Also

Entity

<table>
<thead>
<tr>
<th>CodeBlock</th>
<th>A code block.</th>
</tr>
</thead>
</table>

Description

A code block.

Usage

CodeBlock(text, exportFrom, format, id, importTo, meta, programmingLanguage)

Arguments

text The text of the code. Required.
exportFrom A compilation directive giving the name of the variable to export into the content of the code block.
format Media type, typically expressed using a MIME format, of the code.
id The identifier for this item.
importTo A compilation directive giving the name of the variable to import the content of the code block as.
meta Metadata associated with this item.
programmingLanguage The programming language of the code.

Value

A list of class CodeBlock

See Also

Code
**CodeBlockTypes**

All type schemas that are derived from CodeBlock

**Description**

All type schemas that are derived from CodeBlock

**Usage**

CodeBlockTypes

**Format**

An object of class Union of length 1.

**Value**

A list of class Union describing valid subtypes of this type

---

**CodeChunk**

A executable chunk of code.

**Description**

A executable chunk of code.

**Usage**

CodeChunk(
    text,
    alters,
    assigns,
    caption,
    declares,
    duration,
    errors,
    exportFrom,
    format,
    id,
    importTo,
    imports,
    label,
    meta,
    outputs,
    programmingLanguage,
    reads,
    uses
)


Arguments

text  The text of the code. **Required.**
alters  Names of variables that the code chunk alters.
assigns  Variables that the code chunk assigns to.
caption  A caption for the CodeChunk.
declares  Variables that the code chunk declares.
duration  Duration in seconds of the last execution of the chunk.
errors  Errors when compiling or executing the chunk.
exportFrom  A compilation directive giving the name of the variable to export into the content of the code block.
format  Media type, typically expressed using a MIME format, of the code.
id  The identifier for this item.
importTo  A compilation directive giving the name of the variable to import the content of the code block as.
imports  Software packages that the code chunk imports
label  A short label for the CodeChunk.
meta  Metadata associated with this item.
outputs  Outputs from executing the chunk.
programmingLanguage  The programming language of the code.
reads  Filesystem paths that this code chunk reads from.
uses  Names of variables that the code chunk uses (but does not alter).

Value

A list of class CodeChunk

See Also

**CodeBlock**

Examples

CodeChunk(
    programmingLanguage = "r",
    text = "plot(1)",
    label = "Figure 1",
    id = "fig1",
    caption = list(Heading(
        content = list("Figure title"),
        depth = 2
    ),
    Paragraph(

)
Content

```python
content = list(
    "A paragraph with some",
    Strong(content = list("strong emphasis")),
    "in it."
)
)```

---

**CodeError**

*An error that occurred when parsing, compiling or executing a Code node.*

---

**Description**

An error that occurred when parsing, compiling or executing a Code node.

**Usage**

```python
CodeError(errorMessage, errorType, id, meta, stackTrace)
```

**Arguments**

- `errorMessage`: The error message or brief description of the error. **Required.**
- `errorType`: The type of error e.g. "SyntaxError", "ZeroDivisionError".
- `id`: The identifier for this item.
- `meta`: Metadata associated with this item.
- `stackTrace`: Stack trace leading up to the error.

**Value**

A list of class `CodeError`

**See Also**

`Entity`
CodeExpression  
An expression defined in programming language source code.

Description
An expression defined in programming language source code.

Usage
CodeExpression(text, errors, format, id, meta, output, programmingLanguage)

Arguments
- text: The text of the code. **Required.**
- errors: Errors when compiling or executing the chunk.
- format: Media type, typically expressed using a MIME format, of the code.
- id: The identifier for this item.
- meta: Metadata associated with this item.
- output: The value of the expression when it was last evaluated.
- programmingLanguage: The programming language of the code.

Value
A list of class CodeExpression

See Also
CodeFragment

CodeFragment  
Inline code.

Description
Inline code.

Usage
CodeFragment(text, format, id, meta, programmingLanguage)
Arguments

text The text of the code. **Required.**

format Media type, typically expressed using a MIME format, of the code.

id The identifier for this item.

meta Metadata associated with this item.

programmingLanguage The programming language of the code.

Value

A list of class CodeFragment

See Also

Code

---

**CodeFragmentTypes**

*All type schemas that are derived from CodeFragment*

Description

All type schemas that are derived from CodeFragment

Usage

CodeFragmentTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type
CodeTypes  
All type schemas that are derived from Code

Description
All type schemas that are derived from Code

Usage
CodeTypes

Format
An object of class Union of length 1.

Value
A list of class Union describing valid subtypes of this type

Collection  
A created collection of CreativeWorks or other artefacts.

Description
A created collection of CreativeWorks or other artefacts.

Usage
Collection(
parts,
about,
alternateNames,
authors,
comments,
content,
dateAccepted,
dateCreated,
dateModified,
datePublished,
dateReceived,
description,
editors,
fundedBy,
funders,
genre,
id,
Collection

identifiers,
images,
isPartOf,
keywords,
licenses,
maintainers,
meta,
name,
publisher,
references,
text,
title,
url,
version
)

Arguments

parts  Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more. **Required.**
about   The subject matter of the content.
alternateNames  Alternate names (aliases) for the item.
authors    The authors of this creative work.
comments   Comments about this creative work.
content    The structured content of this creative work c.f. property text.
dateAccepted  Date/time of acceptance.
dateCreated  Date/time of creation.
dateModified  Date/time of most recent modification.
datePublished  Date of first publication.
dateReceived  Date/time that work was received.
description  A description of the item.
editors    People who edited the CreativeWork.
fundedBy   Grants that funded the CreativeWork; reverse of fundedItems.
funders    People or organizations that funded the CreativeWork.
genre      Genre of the creative work, broadcast channel or group.
id        The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images     Images of the item.
isPartOf   An item or other CreativeWork that this CreativeWork is a part of.
keywords   Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses   License documents that applies to this content, typically indicated by URL.
Comment

maintainers  The people or organizations who maintain this CreativeWork.
meta        Metadata associated with this item.
name        The name of the item.
publisher   A publisher of the CreativeWork.
references  References to other creative works, such as another publication, web page, scholarly article, etc.
text        The textual content of this creative work.
title       The title of the creative work.
url         The URL of the item.
version     The version of the creative work.

Value

A list of class Collection

See Also

CreativeWork

Description

A comment on an item, e.g on a Article, or SoftwareSourceCode.

Usage

Comment(
    about,
    alternateNames,
    authors,
    commentAspect,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
commentAspect The part or facet of the item that is being commented on.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
ids The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
ConstantValidator

A validator specifying a constant value that a node must have.

Description

A validator specifying a constant value that a node must have.

Usage

ConstantValidator(id, meta, value)

Arguments

id The identifier for this item.
meta Metadata associated with this item.
value The value that the node must have.

Value

A list of class ConstantValidator

See Also

Entity
Description

A contact point, for example, a R&D department.

Usage

ContactPoint(
    alternateNames,
    availableLanguages,
    description,
    emails,
    id,
    identifiers,
    images,
    meta,
    name,
    telephoneNumbers,
    url
)

Arguments

alternateNames  Alternate names (aliases) for the item.
availableLanguages
    Languages (human not programming) in which it is possible to communicate
    with the organization/department etc.
description  A description of the item.
emails  Email address for correspondence.
id  The identifier for this item.
identifiers  Any kind of identifier for any kind of Thing.
images  Images of the item.
meta  Metadata associated with this item.
name  The name of the item.
telephoneNumbers  Telephone numbers for the contact point.
url  The URL of the item.

Value

A list of class ContactPoint
See Also

Thing

ContactPointTypes  
All type schemas that are derived from ContactPoint

Description

All type schemas that are derived from ContactPoint

Usage

ContactPointTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type

CreativeWork  
A creative work, including books, movies, photographs, software programs, etc.

Description

A creative work, including books, movies, photographs, software programs, etc.

Usage

CreativeWork(
  about,
  alternateNames,
  authors,
  comments,
  content,
  dateAccepted,
  dateCreated,
  dateModified,
  datePublished,
  dateReceived,
  description,
  editors,
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
keywords  
Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.

licenses  
License documents that applies to this content, typically indicated by URL.

maintainers  
The people or organizations who maintain this CreativeWork.

meta  
Metadata associated with this item.

name  
The name of the item.

parts  
Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.

publisher  
A publisher of the CreativeWork.

references  
References to other creative works, such as another publication, web page, scholarly article, etc.

text  
The textual content of this creative work.

title  
The title of the creative work.

url  
The URL of the item.

version  
The version of the creative work.

Value  
A list of class CreativeWork

See Also  

Thing

CreativeWorkTypes  
All type schemas that are derived from CreativeWork

Description  
All type schemas that are derived from CreativeWork

Usage  

CreativeWorkTypes

Format  
An object of class Union of length 1.

Value  
A list of class Union describing valid subtypes of this type
Datatable

Description

A table of data.

Usage

```java
Datatable(
    columns,
    about,
    alternateNames,
    authors,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    parts,
    publisher,
    references,
    text,
    title,
    url,
    version
)
```

Arguments

- `columns` The columns of data. **Required.**
about  The subject matter of the content.
alternateNames  Alternate names (aliases) for the item.
authors  The authors of this creative work.
comments  Comments about this creative work.
content  The structured content of this creative work c.f. property text.
dateAccepted  Date/time of acceptance.
dateCreated  Date/time of creation.
dateModified  Date/time of most recent modification.
datePublished  Date of first publication.
dateReceived  Date/time that work was received.
description  A description of the item.
editors  People who edited the CreativeWork.
fundedBy  Grants that funded the CreativeWork; reverse of fundedItems.
funders  People or organizations that funded the CreativeWork.
genre  Genre of the creative work, broadcast channel or group.
id  The identifier for this item.
identifiers  Any kind of identifier for any kind of Thing.
images  Images of the item.
isPartOf  An item or other CreativeWork that this CreativeWork is a part of.
keywords  Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses  License documents that applies to this content, typically indicated by URL.
maintainers  The people or organizations who maintain this CreativeWork.
meta  Metadata associated with this item.
name  The name of the item.
parts  Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher  A publisher of the CreativeWork.
references  References to other creative works, such as another publication, web page, scholarly article, etc.
text  The textual content of this creative work.
title  The title of the creative work.
url  The URL of the item.
version  The version of the creative work.

Value

A list of class Datatable

See Also

CreativeWork
**DatatableColumn**

*Description*

A column of data within a Datatable.

**Usage**

```
DatatableColumn(
    name, 
    values, 
    alternateNames, 
    description, 
    id, 
    identifiers, 
    images, 
    meta, 
    url, 
    validator
)
```

**Arguments**

- **name**: The name of the item. **Required.**
- **values**: The data values of the column. **Required.**
- **alternateNames**: Alternate names (aliases) for the item.
- **description**: A description of the item.
- **id**: The identifier for this item.
- **identifiers**: Any kind of identifier for any kind of Thing.
- **images**: Images of the item.
- **meta**: Metadata associated with this item.
- **url**: The URL of the item.
- **validator**: The validator to use to validate data in the column.

**Value**

A list of class DatatableColumn

**See Also**

*Thing*
Date

A date encoded as a ISO 8601 string.

Description

A date encoded as a ISO 8601 string.

Usage

Date(value, id, meta)

Arguments

value The date as an ISO 8601 string. Required.
id The identifier for this item.
meta Metadata associated with this item.

Value

A list of class Date

See Also

Entity

DefinedTerm

A word, name, acronym, phrase, etc. with a formal definition.

Description

A word, name, acronym, phrase, etc. with a formal definition.

Usage

DefinedTerm(
    name,
    alternateNames,
    description,
    id,
    identifiers,
    images,
    meta,
    termCode,
    url
)
Delete

Arguments

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The name of the item. <strong>Required.</strong></td>
</tr>
<tr>
<td>alternateNames</td>
<td>Alternate names (aliases) for the item.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>termCode</td>
<td>A code that identifies this DefinedTerm within a DefinedTermSet.</td>
</tr>
<tr>
<td>url</td>
<td>The URL of the item.</td>
</tr>
</tbody>
</table>

Value

A list of class DefinedTerm

See Also

Thing

Delete

**Content that is marked for deletion**

Description

Content that is marked for deletion

Usage

Delete(content, id, meta)

Arguments

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>The content that is marked. <strong>Required.</strong></td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
</tbody>
</table>

Value

A list of class Delete

See Also

Mark
**Emphasis**

*Emphasised content.*

**Description**

Emphasised content.

**Usage**

`Emphasis(content, id, meta)`

**Arguments**

- **content**
  - The content that is marked. **Required.**
- **id**
  - The identifier for this item.
- **meta**
  - Metadata associated with this item.

**Value**

A list of class `Emphasis`

**See Also**

`Mark`

---

**Entity**

*The most simple compound (ie. non-atomic like number, string etc) type.*

**Description**

The most simple compound (ie. non-atomic like number, string etc) type.

**Usage**

`Entity(id, meta)`

**Arguments**

- **id**
  - The identifier for this item.
- **meta**
  - Metadata associated with this item.

**Value**

A list of class `Entity`
**EntityTypes**

*All type schemas that are derived from Entity*

**Description**

All type schemas that are derived from Entity

**Usage**

EntityTypes

**Format**

An object of class Union of length 1.

**Value**

A list of class Union describing valid subtypes of this type

---

**Enum**

*An enumeration*

**Description**

An enumeration

**Usage**

Enum(...)

**Arguments**

...  The values in the enumeration

**Value**

A list of class Enum describing the valid values in an enumeration

**Examples**

Enum("apple", "pear", "orange")
EnumValidator  

A schema specifying that a node must be one of several values.

**Description**

A schema specifying that a node must be one of several values.

**Usage**

EnumValidator(id, meta, values)

**Arguments**

id  
The identifier for this item.

meta  
Metadata associated with this item.

values  
A node is valid if it is equal to any of these values.

**Value**

A list of class EnumValidator

**See Also**

Entity

---

Figure  

Encapsulates one or more images, videos, tables, etc, and provides captions and labels for them.

**Description**

Encapsulates one or more images, videos, tables, etc, and provides captions and labels for them.

**Usage**

Figure(
    about,
    alternateNames,
    authors,
    caption,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
caption A caption for the figure.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id
The identifier for this item.

identifiers
Any kind of identifier for any kind of Thing.

images
Images of the item.

isPartOf
An item or other CreativeWork that this CreativeWork is a part of.

keywords
Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.

label
A short label for the figure.

licenses
License documents that applies to this content, typically indicated by URL.

maintainers
The people or organizations who maintain this CreativeWork.

meta
Metadata associated with this item.

name
The name of the item.

parts
Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.

publisher
A publisher of the CreativeWork.

references
References to other creative works, such as another publication, web page, scholarly article, etc.

text
The textual content of this creative work.

title
The title of the creative work.

url
The URL of the item.

version
The version of the creative work.

Value
A list of class Figure

See Also

CreativeWork

---

Function

A function with a name, which might take Parameters and return a value of a certain type.

Description

A function with a name, which might take Parameters and return a value of a certain type.

Usage

Function(id, meta, name, parameters, returns)
Grant

Arguments

- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.
- **name**: The name of the function.
- **parameters**: The parameters of the function.
- **returns**: The return type of the function.

Value

A list of class Function

See Also

Entity

Grant

A grant, typically financial or otherwise quantifiable, of resources.

Description

A grant, typically financial or otherwise quantifiable, of resources.

Usage

Grant(
    alternateNames,
    description,
    fundedItems,
    id,
    identifiers,
    images,
    meta,
    name,
    sponsors,
    url
)

Arguments

- **alternateNames**: Alternate names (aliases) for the item.
- **description**: A description of the item.
- **fundedItems**: Indicates an item funded or sponsored through a Grant.
- **id**: The identifier for this item.
- **identifiers**: Any kind of identifier for any kind of Thing.
images       Images of the item.
meta         Metadata associated with this item.
name         The name of the item.
sponsors     A person or organization that supports a thing through a pledge, promise, or financial contribution.
url          The URL of the item.

Value

A list of class Grant

See Also

Thing

---

GrantTypes       All type schemas that are derived from Grant

Description

All type schemas that are derived from Grant

Usage

GrantTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type
Description
Heading

Usage
Heading(content, depth, id, meta)

Arguments
- content: Content of the heading. **Required.**
- depth: The depth of the heading.
- id: The identifier for this item.
- meta: Metadata associated with this item.

Value
A list of class Heading

See Also
Entity

ImageObject

Description
An image file.

Usage
ImageObject(
    contentUrl,
    about,
    alternateNames,
    authors,
    bitrate,
    caption,
    comments,
    content,
    contentSize,
ImageObject

dateAccepted, dateCreated, dateModified, datePublished, dateReceived, description, editors, embedUrl, format, fundedBy, funders, genre, id, identifiers, images, isPartOf, keywords, licenses, maintainers, meta, name, parts, publisher, references, text, thumbnail, title, url, version

Arguments

contentUrl URL for the actual bytes of the media object, for example the image file or video file. **Required.**

about The subject matter of the content.

alternateNames Alternate names (aliases) for the item.

authors The authors of this creative work.

bitrate Bitrate in megabits per second (Mbit/s, Mb/s, Mbps).

caption The caption for this image.

comments Comments about this creative work.

content The structured content of this creative work c.f. property text.

contentSize File size in megabits (Mbit, Mb).

dateAccepted Date/time of acceptance.

dateCreated Date/time of creation.

dateModified Date/time of most recent modification.
ImageObject

datePublished  Date of first publication.
dateReceived   Date/time that work was received.
description    A description of the item.
editors       People who edited the CreativeWork.
embedUrl       URL that can be used to embed the media on a web page via a specific media player.
format         Media type (MIME type) as per http://www.iana.org/assignments/media-types/media-types.xhtml.
fundedBy       Grants that funded the CreativeWork; reverse of fundedItems.
funders        People or organizations that funded the CreativeWork.
genre           Genre of the creative work, broadcast channel or group.
id             The identifier for this item.
identifiers    Any kind of identifier for any kind of Thing.
images         Images of the item.
isPartOf       An item or other CreativeWork that this CreativeWork is a part of.
keywords       Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses       License documents that applies to this content, typically indicated by URL.
maintainers    The people or organizations who maintain this CreativeWork.
meta           Metadata associated with this item.
name           The name of the item.
parts          Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher      A publisher of the CreativeWork.
references     References to other creative works, such as another publication, web page, scholarly article, etc.
text           The textual content of this creative work.
thumbnail      Thumbnail image of this image.
title          The title of the creative work.
url            The URL of the item.
version        The version of the creative work.

Value

A list of class ImageObject

See Also

MediaObject
**Include**

A directive to include content from an external source (e.g. file, URL) or content.

**Description**

A directive to include content from an external source (e.g. file, URL) or content.

**Usage**

```plaintext
Include(source, content, format, id, meta)
```

**Arguments**

- **source**
  - The source of the content, a URL or file path, or the content itself. **Required.**
- **content**
  - The content to be included.
- **format**
  - Media type, typically expressed using a MIME format, of the source content.
- **id**
  - The identifier for this item.
- **meta**
  - Metadata associated with this item.

**Value**

A list of class Include

**See Also**

- Entity

---

**InlineContent**

Union type for valid inline content.

**Description**

Union type for valid inline content.

**Usage**

```plaintext
InlineContent
```

**Format**

An object of class Union of length 1.

**Value**

A list of class Union describing valid subtypes of this type
IntegerValidator

A validator specifying the constraints on an integer node.

Description

A validator specifying the constraints on an integer node.

Usage

```
IntegerValidator(
    exclusiveMaximum,  
    exclusiveMinimum,  
    id,                
    maximum,          
    meta,             
    minimum,          
    multipleOf
)
```

Arguments

- `exclusiveMaximum`: The exclusive upper limit for a numeric node.
- `exclusiveMinimum`: The exclusive lower limit for a numeric node.
- `id`: The identifier for this item.
- `maximum`: The inclusive upper limit for a numeric node.
- `meta`: Metadata associated with this item.
- `minimum`: The inclusive lower limit for a numeric node.
- `multipleOf`: A number that a numeric node must be a multiple of.

Value

A list of class IntegerValidator

See Also

- `NumberValidator`
is_class

Description
Is a value of a particular class

Usage
is_class(value, clas)

Arguments
value The value to check
clas The class the check against

Value
TRUE if the value has the class as its last class, FALSE otherwise

is_type

Description
Does a value conform to the type?

Usage
is_type(value, type)

Arguments
value The value to check
type The type to check against

Value
TRUE if the value conforms to the type, FALSE otherwise
<table>
<thead>
<tr>
<th>last_class</th>
<th>Get the last class for an object. The last class is usually the &quot;highest&quot; in the inheritance tree</th>
</tr>
</thead>
</table>

**Description**

Get the last class for an object. The last class is usually the "highest" in the inheritance tree.

**Usage**

```
last_class(obj)
```

**Arguments**

- **obj**: The object to get the last class for.

**Value**

The class that is last in the list of classes for the object.

<table>
<thead>
<tr>
<th>Link</th>
<th>A hyperlink to other pages, sections within the same document, resources, or any URL.</th>
</tr>
</thead>
</table>

**Description**

A hyperlink to other pages, sections within the same document, resources, or any URL.

**Usage**

```
Link(content, target, exportFrom, id, importTo, meta, relation, title)
```

**Arguments**

- **content**: The textual content of the link. **Required**.
- **target**: The target of the link. **Required**.
- **exportFrom**: A compilation directive giving the name of the variable to export to the link target.
- **id**: The identifier for this item.
- **importTo**: A compilation directive giving the name of the variable to import the link target as.
- **meta**: Metadata associated with this item.
- **relation**: The relation between the target and the current thing.
- **title**: A title for the link.
**Value**

A list of class `Link`

**See Also**

`Entity`

---

**List**  
*A list of items.*

---

**Description**

A list of items.

**Usage**

`List(items, id, meta, order)`

**Arguments**

- **items**  
The items in the list **Required**.
- **id**  
The identifier for this item.
- **meta**  
Metadata associated with this item.
- **order**  
Type of ordering.

**Value**

A list of class `List`

**See Also**

`Entity`
ListItem

A single item in a list.

Description

A single item in a list.

Usage

ListItem(
    alternateNames,
    content,
    description,
    id,
    identifiers,
    images,
    isChecked,
    item,
    meta,
    name,
    position,
    url
)

Arguments

    alternateNames  Alternate names (aliases) for the item.
    content         The content of the list item.
    description     A description of the item.
    id              The identifier for this item.
    identifiers     Any kind of identifier for any kind of Thing.
    images          Images of the item.
    isChecked       A flag to indicate if this list item is checked.
    item            The item represented by this list item.
    meta            Metadata associated with this item.
    name            The name of the item.
    position        The position of the item in a series or sequence of items.
    url             The URL of the item.

Value

A list of class ListItem

See Also

    Thing
Mark

A base class for nodes that mark some other inline content in some way (e.g. as being emphasised, or quoted).

Description

A base class for nodes that mark some other inline content in some way (e.g. as being emphasised, or quoted).

Usage

Mark(content, id, meta)

Arguments

- **content**: The content that is marked. **Required**.
- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.

Value

A list of class Mark

See Also

- Entity

MarkTypes

All type schemas that are derived from Mark

Description

All type schemas that are derived from Mark

Usage

MarkTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type
**Math**

A mathematical variable or equation.

**Description**

A mathematical variable or equation.

**Usage**

Math(text, errors, id, mathLanguage, meta)

**Arguments**

- **text**: The text of the equation in the language. **Required**.
- **errors**: Errors that occurred when parsing the math equation.
- **id**: The identifier for this item.
- **mathLanguage**: The language used for the equation e.g tex, mathml, asciimath.
- **meta**: Metadata associated with this item.

**Value**

A list of class Math

**See Also**

Entity

---

**MathBlock**

A block of math, e.g an equation, to be treated as block content.

**Description**

A block of math, e.g an equation, to be treated as block content.

**Usage**

MathBlock(text, errors, id, mathLanguage, meta)

**Arguments**

- **text**: The text of the equation in the language. **Required**.
- **errors**: Errors that occurred when parsing the math equation.
- **id**: The identifier for this item.
- **mathLanguage**: The language used for the equation e.g tex, mathml, asciimath.
- **meta**: Metadata associated with this item.
Value

A list of class MathBlock

See Also

Math

---

**MathFragment**

A fragment of math, e.g a variable name, to be treated as inline content.

Description

A fragment of math, e.g a variable name, to be treated as inline content.

Usage

MathFragment(text, errors, id, mathLanguage, meta)

Arguments

text

The text of the equation in the language. **Required.**

errors

Errors that occurred when parsing the math equation.

id

The identifier for this item.

mathLanguage

The language used for the equation e.g tex, mathml, asciimath.

meta

Metadata associated with this item.

Value

A list of class MathFragment

See Also

Math
MathTypes

All type schemas that are derived from Math

Description
All type schemas that are derived from Math

Usage
MathTypes

Format
An object of class Union of length 1.

Value
A list of class Union describing valid subtypes of this type

MediaObject
A media object, such as an image, video, or audio object embedded in a web page or a downloadable dataset.

Description
A media object, such as an image, video, or audio object embedded in a web page or a downloadable dataset.

Usage
MediaObject(
    contentUrl,
    about,
    alternateNames,
    authors,
    bitrate,
    comments,
    content,
    contentSize,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
embedUrl, format, fundedBy, funders, genre, id, identifiers, images, isPartOf, keywords, licenses, maintainers, meta, name, parts, publisher, references, text, title, url, version
}

Arguments

- **contentUrl**: URL for the actual bytes of the media object, for example the image file or video file. **Required**.
- **about**: The subject matter of the content.
- **alternateNames**: Alternate names (aliases) for the item.
- **authors**: The authors of this creative work.
- **bitrate**: Bitrate in megabits per second (Mbit/s, Mb/s, Mbps).
- **comments**: Comments about this creative work.
- **content**: The structured content of this creative work c.f. property text.
- **contentSize**: File size in megabits (Mbit, Mb).
- **dateAccepted**: Date/time of acceptance.
- **dateCreated**: Date/time of creation.
- **dateModified**: Date/time of most recent modification.
- **datePublished**: Date of first publication.
- **dateReceived**: Date/time that work was received.
- **description**: A description of the item.
- **editors**: People who edited the CreativeWork.
- **embedUrl**: URL that can be used to embed the media on a web page via a specific media player.
**MediaObject**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>format</td>
<td>Media type (MIME type) as per <a href="http://www.iana.org/assignments/media-types/media-types.xhtml">http://www.iana.org/assignments/media-types/media-types.xhtml</a>.</td>
</tr>
<tr>
<td>fundedBy</td>
<td>Grants that funded the CreativeWork; reverse of fundedItems.</td>
</tr>
<tr>
<td>funders</td>
<td>People or organizations that funded the CreativeWork.</td>
</tr>
<tr>
<td>genre</td>
<td>Genre of the creative work, broadcast channel or group.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>isPartOf</td>
<td>An item or other CreativeWork that this CreativeWork is a part of.</td>
</tr>
<tr>
<td>keywords</td>
<td>Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.</td>
</tr>
<tr>
<td>licenses</td>
<td>License documents that applies to this content, typically indicated by URL.</td>
</tr>
<tr>
<td>maintainers</td>
<td>The people or organizations who maintain this CreativeWork.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>name</td>
<td>The name of the item.</td>
</tr>
<tr>
<td>parts</td>
<td>Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.</td>
</tr>
<tr>
<td>publisher</td>
<td>A publisher of the CreativeWork.</td>
</tr>
<tr>
<td>references</td>
<td>References to other creative works, such as another publication, web page, scholarly article, etc.</td>
</tr>
<tr>
<td>text</td>
<td>The textual content of this creative work.</td>
</tr>
<tr>
<td>title</td>
<td>The title of the creative work.</td>
</tr>
<tr>
<td>url</td>
<td>The URL of the item.</td>
</tr>
<tr>
<td>version</td>
<td>The version of the creative work.</td>
</tr>
</tbody>
</table>

**Value**

A list of class MediaObject

**See Also**

CreativeWork
MediaObjectTypes

All type schemas that are derived from MediaObject

Description

All type schemas that are derived from MediaObject

Usage

MediaObjectTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type

MonetaryGrant

A monetary grant.

Description

A monetary grant.

Usage

MonetaryGrant(
    alternateNames,
    amounts,
    description,
    fundedItems,
    funders,
    id,
    identifiers,
    images,
    meta,
    name,
    sponsors,
    url
)
Node

Arguments

- **alternateNames**: Alternate names (aliases) for the item.
- **amounts**: The amount of money.
- **description**: A description of the item.
- **fundedItems**: Indicates an item funded or sponsored through a Grant.
- **funders**: A person or organization that supports (sponsors) something through some kind of financial contribution.
- **id**: The identifier for this item.
- **identifiers**: Any kind of identifier for any kind of Thing.
- **images**: Images of the item.
- **meta**: Metadata associated with this item.
- **name**: The name of the item.
- **sponsors**: A person or organization that supports a thing through a pledge, promise, or financial contribution.
- **url**: The URL of the item.

Value

A list of class MonetaryGrant

See Also

- Grant

---

Node

*Union type for all valid nodes.*

Description

Union type for all valid nodes.

Usage

Node

Format

An object of class *Union* of length 1.

Value

A list of class *Union* describing valid subtypes of this type
NumberValidator  A validator specifying the constraints on a numeric node.

Description

A validator specifying the constraints on a numeric node.

Usage

NumberValidator(
    exclusiveMaximum,
    exclusiveMinimum,
    id,
    maximum,
    meta,
    minimum,
    multipleOf
)
Arguments

- **exclusiveMaximum**
  The exclusive upper limit for a numeric node.
- **exclusiveMinimum**
  The exclusive lower limit for a numeric node.
- **id**
  The identifier for this item.
- **maximum**
  The inclusive upper limit for a numeric node.
- **meta**
  Metadata associated with this item.
- **minimum**
  The inclusive lower limit for a numeric node.
- **multipleOf**
  A number that a numeric node must be a multiple of.

Value

A list of class `NumberValidator`

See Also

- [Entity](#)

---

**NumberValidatorTypes**

*All type schemas that are derived from NumberValidator*

Description

All type schemas that are derived from `NumberValidator`

Usage

`NumberValidatorTypes`

Format

An object of class `Union` of length 1.

Value

A list of class `Union` describing valid subtypes of this type
Organization

An organization such as a school, NGO, corporation, club, etc.

Description

An organization such as a school, NGO, corporation, club, etc.

Usage

Organization(
    address,  
    alternateNames,  
    brands,  
    contactPoints,  
    departments,  
    description,  
    funders,  
    id,  
    identifiers,  
    images,  
    legalName,  
    logo,  
    members,  
    meta,  
    name,  
    parentOrganization,  
    url  
)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>address</td>
<td>Postal address for the organization.</td>
</tr>
<tr>
<td>alternateNames</td>
<td>Alternate names (aliases) for the item.</td>
</tr>
<tr>
<td>brands</td>
<td>Brands that the organization is connected with.</td>
</tr>
<tr>
<td>contactPoints</td>
<td>Correspondence/Contact points for the organization.</td>
</tr>
<tr>
<td>departments</td>
<td>Departments within the organization. For example, Department of Computer Science, Research &amp; Development etc.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>funders</td>
<td>Organization(s) or person(s) funding the organization.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>legalName</td>
<td>Legal name for the Organization. Should only include letters and spaces.</td>
</tr>
<tr>
<td>logo</td>
<td>The logo of the organization.</td>
</tr>
</tbody>
</table>
members Person(s) or organization(s) who are members of this organization.
meta Metadata associated with this item.
name The name of the item.
parentOrganization Entity that the Organization is a part of. For example, parentOrganization to a department is a university.
url The URL of the item.

Value
A list of class Organization

See Also
Thing

Description
Paragraph

Usage
Paragraph(content, id, meta)

Arguments
content The contents of the paragraph. Required.
id The identifier for this item.
meta Metadata associated with this item.

Value
A list of class Paragraph

See Also
Entity
Parameter

A parameter that can be set and used in evaluated code.

Description

A parameter that can be set and used in evaluated code.

Usage

Parameter(
    name,
    default,
    id,
    isExtensible,
    isReadonly,
    isRequired,
    isVariadic,
    meta,
    validator,
    value
)

Arguments

name                  The name of the variable. **Required.**
default              The default value of the parameter.
id                   The identifier for this item.
isExtensible          Indicates that this parameter is variadic and can accept multiple named arguments.
isReadonly            Whether or not a property is mutable. Default is false.
isRequired            Is this parameter required, if not it should have a default or default is assumed to be null.
isVariadic            Indicates that this parameter is variadic and can accept multiple arguments.
meta                  Metadata associated with this item.
validator             The validator that the value is validated against.
value                 The value of the variable.

Value

A list of class Parameter

See Also

Variable
**Description**

A periodical publication.

**Usage**

```python
Periodical(
    about,  # optional
    alternateNames,  # optional
    authors,  # optional
    comments,  # optional
    content,  # optional
    dateAccepted,  # optional
    dateCreated,  # optional
    dateEnd,  # optional
    dateModified,  # optional
    datePublished,  # optional
    dateReceived,  # optional
    dateStart,  # optional
    description,  # optional
    editors,  # optional
    fundedBy,  # optional
    funders,  # optional
    genre,  # optional
    id,  # optional
    identifiers,  # optional
    images,  # optional
    isPartOf,  # optional
    issns,  # optional
    keywords,  # optional
    licenses,  # optional
    maintainers,  # optional
    meta,  # optional
    name,  # optional
    parts,  # optional
    publisher,  # optional
    references,  # optional
    text,  # optional
    title,  # optional
    url,  # optional
    version  # optional
)
```
**Arguments**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>about</td>
<td>The subject matter of the content.</td>
</tr>
<tr>
<td>alternateNames</td>
<td>Alternate names (aliases) for the item.</td>
</tr>
<tr>
<td>authors</td>
<td>The authors of this creative work.</td>
</tr>
<tr>
<td>comments</td>
<td>Comments about this creative work.</td>
</tr>
<tr>
<td>content</td>
<td>The structured content of this creative work c.f. property text.</td>
</tr>
<tr>
<td>dateAccepted</td>
<td>Date/time of acceptance.</td>
</tr>
<tr>
<td>dateCreated</td>
<td>Date/time of creation.</td>
</tr>
<tr>
<td>dateEnd</td>
<td>The date this Periodical ceased publication.</td>
</tr>
<tr>
<td>dateModified</td>
<td>Date/time of most recent modification.</td>
</tr>
<tr>
<td>datePublished</td>
<td>Date of first publication.</td>
</tr>
<tr>
<td>dateReceived</td>
<td>Date/time that work was received.</td>
</tr>
<tr>
<td>dateStart</td>
<td>The date this Periodical was first published.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>editors</td>
<td>People who edited the CreativeWork.</td>
</tr>
<tr>
<td>fundedBy</td>
<td>Grants that funded the CreativeWork; reverse of fundedItems.</td>
</tr>
<tr>
<td>funders</td>
<td>People or organizations that funded the CreativeWork.</td>
</tr>
<tr>
<td>genre</td>
<td>Genre of the creative work, broadcast channel or group.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>isPartOf</td>
<td>An item or other CreativeWork that this CreativeWork is a part of.</td>
</tr>
<tr>
<td>issns</td>
<td>The International Standard Serial Number(s) (ISSN) that identifies this serial publication.</td>
</tr>
<tr>
<td>keywords</td>
<td>Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.</td>
</tr>
<tr>
<td>licenses</td>
<td>License documents that applies to this content, typically indicated by URL.</td>
</tr>
<tr>
<td>maintainers</td>
<td>The people or organizations who maintain this CreativeWork.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>name</td>
<td>The name of the item.</td>
</tr>
<tr>
<td>parts</td>
<td>Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.</td>
</tr>
<tr>
<td>publisher</td>
<td>A publisher of the CreativeWork.</td>
</tr>
<tr>
<td>references</td>
<td>References to other creative works, such as another publication, web page, scholarly article, etc.</td>
</tr>
<tr>
<td>text</td>
<td>The textual content of this creative work.</td>
</tr>
<tr>
<td>title</td>
<td>The title of the creative work.</td>
</tr>
<tr>
<td>url</td>
<td>The URL of the item.</td>
</tr>
<tr>
<td>version</td>
<td>The version of the creative work.</td>
</tr>
</tbody>
</table>
Person

Value
A list of class Periodical

See Also
CreativeWork

| Person | A person (alive, dead, undead, or fictional). |

Description
A person (alive, dead, undead, or fictional).

Usage
Person(
  address,
  affiliations,
  alternateNames,
  description,
  emails,
  familyNames,
  funders,
  givenNames,
  honorificPrefix,
  honorificSuffix,
  id,
  identifiers,
  images,
  jobTitle,
  memberOf,
  meta,
  name,
  telephoneNumbers,
  url
)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>address</td>
<td>Postal address for the person.</td>
</tr>
<tr>
<td>affiliations</td>
<td>Organizations that the person is affiliated with.</td>
</tr>
<tr>
<td>alternateNames</td>
<td>Alternate names (aliases) for the item.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>emails</td>
<td>Email addresses for the person.</td>
</tr>
</tbody>
</table>
familyNames: Family name. In the U.S., the last name of a person.
funders: A person or organization that supports (sponsors) something through some kind of financial contribution.
givenNames: Given name. In the U.S., the first name of a person.
honorificPrefix: An honorific prefix preceding a person’s name such as Dr/Mrs/Mr.
honorificSuffix: An honorific suffix after a person’s name such as MD/PhD/MSCSW.
id: The identifier for this item.
identifiers: Any kind of identifier for any kind of Thing.
images: Images of the item.
jobTitle: The job title of the person (for example, Financial Manager).
memberOf: An organization (or program membership) to which this person belongs.
meta: Metadata associated with this item.
name: The name of the item.
televisionNumbers: Telephone numbers for the person.
url: The URL of the item.

Value
A list of class Person

See Also
Thing

Examples
Person(
  honorificPrefix = "Dr",
  givenNames = list("Jane", "J"),
  familyNames = list("Jamieson")
)

PostalAddress
A physical mailing address.

Description
A physical mailing address.
Usage

PostalAddress(
    addressCountry,
    addressLocality,
    addressRegion,
    alternateNames,
    availableLanguages,
    description,
    emails,
    id,
    identifiers,
    images,
    meta,
    name,
    postOfficeBoxNumber,
    postalCode,
    streetAddress,
    telephoneNumbers,
    url
)

Arguments

addressCountry  The country.
addressLocality  The locality in which the street address is, and which is in the region.
addressRegion   The region in which the locality is, and which is in the country.
alternateNames  Alternate names (aliases) for the item.
availableLanguages  Languages (human not programming) in which it is possible to communicate with the organization/department etc.
description     A description of the item.
emails          Email address for correspondence.
id              The identifier for this item.
identifiers     Any kind of identifier for any kind of Thing.
images          Images of the item.
meta            Metadata associated with this item.
name            The name of the item.
postOfficeBoxNumber The post office box number.
postalCode      The postal code.
streetAddress   The street address.
telephoneNumbers Telephone numbers for the contact point.
url             The URL of the item.
Value

A list of class PostalAddress

See Also

ContactPoint

Product

Any offered product or service. For example, a pair of shoes; a haircut; or an episode of a TV show streamed online.

Description

Any offered product or service. For example, a pair of shoes; a haircut; or an episode of a TV show streamed online.

Usage

Product(
    alternateNames,
    brands,
    description,
    id,
    identifiers,
    images,
    logo,
    meta,
    name,
    productID,
    url
)

Arguments

alternateNames  Alternate names (aliases) for the item.
brands  Brands that the product is labelled with.
description  A description of the item.
id  The identifier for this item.
identifiers  Any kind of identifier for any kind of Thing.
images  Images of the item.
logo  The logo of the product.
meta  Metadata associated with this item.
name  The name of the item.
productID  Product identification code.
url  The URL of the item.
**PropertyValue**

**Value**

A list of class Product

**See Also**

Thing

---

**PropertyValue**

A property-value pair.

---

**Description**

A property-value pair.

**Usage**

```
PropertyValue(
    value,  # The value of the property. **Required**.
    alternateNames,  # Alternate names (aliases) for the item.
    description,  # A description of the item.
    id,  # The identifier for this item.
    identifiers,  # Any kind of identifier for any kind of Thing.
    images,  # Images of the item.
    meta,  # Metadata associated with this item.
    name,  # The name of the item.
    propertyID,  # A commonly used identifier for the characteristic represented by the property.
    url  # The URL of the item.
)
```

**Arguments**

- `value`: The value of the property. **Required**.
- `alternateNames`: Alternate names (aliases) for the item.
- `description`: A description of the item.
- `id`: The identifier for this item.
- `identifiers`: Any kind of identifier for any kind of Thing.
- `images`: Images of the item.
- `meta`: Metadata associated with this item.
- `name`: The name of the item.
- `propertyID`: A commonly used identifier for the characteristic represented by the property.
- `url`: The URL of the item.

**Value**

A list of class PropertyValue
See Also

Thing

| PublicationIssue | A part of a successively published publication such as a periodical or publication volume, often numbered. |

Description

A part of a successively published publication such as a periodical or publication volume, often numbered.

Usage

```
PublicationIssue(
    about,
    alternateNames,
    authors,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    issueNumber,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    pageEnd,
    pageStart,
    pagination,
    parts,
    publisher,
    references,
```
Arguments

about  The subject matter of the content.
alternateNames  Alternate names (aliases) for the item.
authors  The authors of this creative work.
comments  Comments about this creative work.
content  The structured content of this creative work c.f. property text.
dateAccepted  Date/time of acceptance.
dateCreated  Date/time of creation.
dateModified  Date/time of most recent modification.
datePublished  Date of first publication.
dateReceived  Date/time that work was received.
description  A description of the item.
editors  People who edited the CreativeWork.
fundedBy  Grants that funded the CreativeWork; reverse of fundedItems.
funders  People or organizations that funded the CreativeWork.
genre  Genre of the creative work, broadcast channel or group.
id  The identifier for this item.
identifiers  Any kind of identifier for any kind of Thing.
images  Images of the item.
isPartOf  An item or other CreativeWork that this CreativeWork is a part of.
issueNumber  Identifies the issue of publication; for example, "iii" or "2".
keywords  Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses  License documents that applies to this content, typically indicated by URL.
maintainers  The people or organizations who maintain this CreativeWork.
meta  Metadata associated with this item.
name  The name of the item.
pageEnd  The page on which the issue ends; for example "138" or "xvi".
pageStart  The page on which the issue starts; for example "135" or "xiii".
pagination  Any description of pages that is not separated into pageStart and pageEnd; for example, "1-6, 9, 55".
parts  Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher A publisher of the CreativeWork.
references References to other creative works, such as another publication, web page, scholarly article, etc.
text The textual content of this creative work.
title The title of the creative work.
url The URL of the item.
version The version of the creative work.

Value
A list of class PublicationIssue

See Also
CreativeWork

PublicationVolume A part of a successively published publication such as a periodical or multi-volume work.

Description
A part of a successively published publication such as a periodical or multi-volume work.

Usage
PublicationVolume(
  about,
  alternateNames,
  authors,
  comments,
  content,
  dateAccepted,
  dateCreated,
  dateModified,
  datePublished,
  dateReceived,
  description,
  editors,
  fundedBy,
  funders,
  genre,
  id,
  identifiers,
  images,
  isPartOf,
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses License documents that applies to this content, typically indicated by URL.
maintainers The people or organizations who maintain this CreativeWork.
meta Metadata associated with this item.
name The name of the item.
pageEnd The page on which the volume ends; for example "138" or "xvi".
pageStart The page on which the volume starts; for example "135" or "xiii".
pagination Any description of pages that is not separated into pageStart and pageEnd; for example, "1-6, 9, 55".
parts Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher A publisher of the CreativeWork.
references References to other creative works, such as another publication, web page, scholarly article, etc.
text The textual content of this creative work.
title The title of the creative work.
url The URL of the item.
version The version of the creative work.
volumeNumber Identifies the volume of publication or multi-part work; for example, "iii" or "2".

Value
A list of class PublicationVolume

See Also
CreativeWork

---

**Quote**

*Inline, quoted content.*

**Description**

Inline, quoted content.

**Usage**

Quote(content, cite, id, meta)

**Arguments**

- **content** The content that is marked. **Required.**
- **cite** The source of the quote.
- **id** The identifier for this item.
- **meta** Metadata associated with this item.
QuoteBlock

Value

A list of class Quote

See Also

Mark

---

A section quoted from somewhere else.

Description

A section quoted from somewhere else.

Usage

QuoteBlock(content, cite, id, meta)

Arguments

- content: The content of the quote. **Required.**
- cite: The source of the quote.
- id: The identifier for this item.
- meta: Metadata associated with this item.

Value

A list of class QuoteBlock

See Also

Entity
Review

A review of an item, e.g of an Article, or SoftwareSourceCode.

Description

A review of an item, e.g of an Article, or SoftwareSourceCode.

Usage

Review(
    about,
    alternateNames,
    authors,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    itemReviewed,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    parts,
    publisher,
    references,
    reviewAspect,
    text,
    title,
    url,
    version
)

Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
itemReviewed The item that is being reviewed.
keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses License documents that applies to this content, typically indicated by URL.
maintainers The people or organizations who maintain this CreativeWork.
meta Metadata associated with this item.
name The name of the item.
parts Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher A publisher of the CreativeWork.
references References to other creative works, such as another publication, web page, scholarly article, etc.
reviewAspect The part or facet of the item that is being reviewed.
text The textual content of this creative work.
title The title of the creative work.
url The URL of the item.
version The version of the creative work.

Value
A list of class Review

See Also
CreativeWork
SoftwareApplication  A software application.

**Description**

A software application.

**Usage**

```python
SoftwareApplication(
    about,
    alternateNames,
    authors,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    parts,
    publisher,
    references,
    softwareRequirements,
    softwareVersion,
    text,
    title,
    url,
    version
)
```

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>about</td>
<td>The subject matter of the content.</td>
</tr>
</tbody>
</table>
SoftwareApplication

alternateNames  Alternate names (aliases) for the item.
authors  The authors of this creative work.
comments  Comments about this creative work.
content  The structured content of this creative work c.f. property text.
dateAccepted  Date/time of acceptance.
dateCreated  Date/time of creation.
dateModified  Date/time of most recent modification.
datePublished  Date of first publication.
dateReceived  Date/time that work was received.
description  A description of the item.
editors  People who edited the CreativeWork.
fundedBy  Grants that funded the CreativeWork; reverse of fundedItems.
funders  People or organizations that funded the CreativeWork.
genre  Genre of the creative work, broadcast channel or group.
id  The identifier for this item.
identifiers  Any kind of identifier for any kind of Thing.
images  Images of the item.
isPartOf  An item or other CreativeWork that this CreativeWork is a part of.
keywords  Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses  License documents that applies to this content, typically indicated by URL.
maintainers  The people or organizations who maintain this CreativeWork.
meta  Metadata associated with this item.
name  The name of the item.
parts  Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
publisher  A publisher of the CreativeWork.
references  References to other creative works, such as another publication, web page, scholarly article, etc.
softwareRequirements  Requirements for application, including shared libraries that are not included in the application distribution.
softwareVersion  Version of the software.
text  The textual content of this creative work.
title  The title of the creative work.
url  The URL of the item.
version  The version of the creative work.
Value

A list of class SoftwareApplication

See Also

CreativeWork

SoftwareEnvironment  

A computational environment.

Description

A computational environment.

Usage

SoftwareEnvironment(
    name,
    adds,
    alternateNames,
    description,
    extends,
    id,
    identifiers,
    images,
    meta,
    removes,
    url
)

Arguments

name The name of the item. **Required.**
adds The packages that this environment adds to the base environments listed under extends (if any).
alternateNames Alternate names (aliases) for the item.
description A description of the item.
extends Other environments that this environment extends by adding or removing packages.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
meta Metadata associated with this item.
removes The packages that this environment removes from the base environments listed under extends (if any).
url The URL of the item.
**SoftwareSession**

**Value**

A list of class SoftwareEnvironment

**See Also**

Thing

SoftwareSession

Definition of a compute session, including its software and compute resource requirements and status.

**Description**

Definition of a compute session, including its software and compute resource requirements and status.

**Usage**

```python
SoftwareSession(
    alternateNames,
    clientsLimit,
    clientsRequest,
    cpuLimit,
    cpuRequest,
    dateEnd,
    dateStart,
    description,
    durationLimit,
    durationRequest,
    environment,
    id,
    identifiers,
    images,
    memoryLimit,
    memoryRequest,
    meta,
    name,
    networkTransferLimit,
    networkTransferRequest,
    status,
    timeoutLimit,
    timeoutRequest,
    url,
    volumeMounts
)
```
Arguments

- alternateNames: Alternate names (aliases) for the item.
- clientsLimit: The maximum number of concurrent clients the session is limited to.
- clientsRequest: The maximum number of concurrent clients requested for the session.
- cpuLimit: The amount of CPU the session is limited to.
- cpuRequest: The amount of CPU requested for the session.
- dateEnd: The date-time that the session ended.
- dateStart: The date-time that the session began.
- description: A description of the item.
- durationLimit: The maximum duration (seconds) the session is limited to.
- durationRequest: The maximum duration (seconds) requested for the session.
- environment: The software environment to execute this session in.
- id: The identifier for this item.
- identifiers: Any kind of identifier for any kind of Thing.
- images: Images of the item.
- memoryLimit: The amount of memory that the session is limited to.
- memoryRequest: The amount of memory requested for the session.
- meta: Metadata associated with this item.
- name: The name of the item.
- networkTransferLimit: The amount of network data transfer (GiB) that the session is limited to.
- networkTransferRequest: The amount of network data transfer (GiB) requested for the session.
- status: The status of the session (starting, stopped, etc).
- timeoutLimit: The inactivity timeout (seconds) the session is limited to.
- timeoutRequest: The inactivity timeout (seconds) requested for the session.
- url: The URL of the item.
- volumeMounts: Volumes to mount in the session.

Value

A list of class SoftwareSession

See Also

Thing
**SoftwareSourceCode**

Computer programming source code. Example: Full (compile ready) solutions, code snippet samples, scripts, templates.

**Description**

Computer programming source code. Example: Full (compile ready) solutions, code snippet samples, scripts, templates.

**Usage**

```python
SoftwareSourceCode(
    about,
    alternateNames,
    authors,
    codeRepository,
    codeSampleType,
    comments,
    content,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    fundedBy,
    funders,
    genre,
    id,
    identifiers,
    images,
    isPartOf,
    keywords,
    licenses,
    maintainers,
    meta,
    name,
    parts,
    programmingLanguage,
    publisher,
    references,
    runtimePlatform,
    softwareRequirements,
    targetProducts,
    text,
    title,
```
Arguments

about The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors The authors of this creative work.
codeRepository Link to the repository where the un-compiled, human readable code and related code is located.
codeSampleType What type of code sample: full (compile ready) solution, code snippet, inline code, scripts, template.
comments Comments about this creative work.
content The structured content of this creative work c.f. property text.
dateAccepted Date/time of acceptance.
dateCreated Date/time of creation.
dateModified Date/time of most recent modification.
datePublished Date of first publication.
dateReceived Date/time that work was received.
description A description of the item.
editors People who edited the CreativeWork.
fundedBy Grants that funded the CreativeWork; reverse of fundedItems.
funders People or organizations that funded the CreativeWork.
genre Genre of the creative work, broadcast channel or group.
id The identifier for this item.
identifiers Any kind of identifier for any kind of Thing.
images Images of the item.
isPartOf An item or other CreativeWork that this CreativeWork is a part of.
keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.
licenses License documents that applies to this content, typically indicated by URL.
maintainers The people or organizations who maintain this CreativeWork.
meta Metadata associated with this item.
name The name of the item.
parts Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.
programmingLanguage The computer programming language.
publisher A publisher of the CreativeWork.
StringValidator

| References | References to other creative works, such as another publication, web page, scholarly article, etc. |
| RuntimePlatform | Runtime platform or script interpreter dependencies (Example - Java v1, Python v2.3, .Net Framework 3.0). |
| SoftwareRequirements | Dependency requirements for the software. |
| TargetProducts | Target operating system or product to which the code applies. |
| Text | The textual content of this creative work. |
| Title | The title of the creative work. |
| URL | The URL of the item. |
| Version | The version of the creative work. |

Value

A list of class SoftwareSourceCode

See Also

CreativeWork

StringValidator A schema specifying constraints on a string node.

Description

A schema specifying constraints on a string node.

Usage

StringValidator(id, maxLength, meta, minLength, pattern)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>maxLength</td>
<td>The maximum length for a string node.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>minLength</td>
<td>The minimum length for a string node.</td>
</tr>
<tr>
<td>pattern</td>
<td>A regular expression that a string node must match.</td>
</tr>
</tbody>
</table>

Value

A list of class StringValidator

See Also

Entity
Strong

*Strongly emphasised content.*

Description

Strongly emphasised content.

Usage

```plaintext
Strong(content, id, meta)
```

Arguments

- **content**: The content that is marked. **Required**.
- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.

Value

A list of class `Strong`

See Also

- [Mark](#)

---

Subscript

*Subscribed content.*

Description

Subscribed content.

Usage

```plaintext
Subscript(content, id, meta)
```

Arguments

- **content**: The content that is marked. **Required**.
- **id**: The identifier for this item.
- **meta**: Metadata associated with this item.

Value

A list of class `Subscript`
Superscript

See Also

Mark

<table>
<thead>
<tr>
<th>Superscript</th>
<th>Superscripted content.</th>
</tr>
</thead>
</table>

Description

Superscripted content.

Usage

Superscript(content, id, meta)

Arguments

<table>
<thead>
<tr>
<th>content</th>
<th>The content that is marked. Required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
</tbody>
</table>

Value

A list of class Superscript

See Also

Mark

<table>
<thead>
<tr>
<th>Table</th>
<th>A table.</th>
</tr>
</thead>
</table>

Description

A table.
Usage

Table(
  rows,
  about,
  alternateNames,
  authors,
  caption,
  comments,
  content,
  dateAccepted,
  dateCreated,
  dateModified,
  datePublished,
  dateReceived,
  description,
  editors,
  fundedBy,
  funders,
  genre,
  id,
  identifiers,
  images,
  isPartOf,
  keywords,
  label,
  licenses,
  maintainers,
  meta,
  name,
  parts,
  publisher,
  references,
  text,
  title,
  url,
  version
)

Arguments

rows        Rows of cells in the table. **Required**.
about       The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors     The authors of this creative work.
caption     A caption for the table.
comments    Comments about this creative work.
content     The structured content of this creative work c.f. property text.
Table

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateAccepted</td>
<td>Date/time of acceptance.</td>
</tr>
<tr>
<td>dateCreated</td>
<td>Date/time of creation.</td>
</tr>
<tr>
<td>dateModified</td>
<td>Date/time of most recent modification.</td>
</tr>
<tr>
<td>datePublished</td>
<td>Date of first publication.</td>
</tr>
<tr>
<td>dateReceived</td>
<td>Date/time that work was received.</td>
</tr>
<tr>
<td>description</td>
<td>A description of the item.</td>
</tr>
<tr>
<td>editors</td>
<td>People who edited the CreativeWork.</td>
</tr>
<tr>
<td>fundedBy</td>
<td>Grants that funded the CreativeWork; reverse of fundedItems.</td>
</tr>
<tr>
<td>funders</td>
<td>People or organizations that funded the CreativeWork.</td>
</tr>
<tr>
<td>genre</td>
<td>Genre of the creative work, broadcast channel or group.</td>
</tr>
<tr>
<td>id</td>
<td>The identifier for this item.</td>
</tr>
<tr>
<td>identifiers</td>
<td>Any kind of identifier for any kind of Thing.</td>
</tr>
<tr>
<td>images</td>
<td>Images of the item.</td>
</tr>
<tr>
<td>isPartOf</td>
<td>An item or other CreativeWork that this CreativeWork is a part of.</td>
</tr>
<tr>
<td>keywords</td>
<td>Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.</td>
</tr>
<tr>
<td>label</td>
<td>A short label for the table.</td>
</tr>
<tr>
<td>licenses</td>
<td>License documents that applies to this content, typically indicated by URL.</td>
</tr>
<tr>
<td>maintainers</td>
<td>The people or organizations who maintain this CreativeWork.</td>
</tr>
<tr>
<td>meta</td>
<td>Metadata associated with this item.</td>
</tr>
<tr>
<td>name</td>
<td>The name of the item.</td>
</tr>
<tr>
<td>parts</td>
<td>Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.</td>
</tr>
<tr>
<td>publisher</td>
<td>A publisher of the CreativeWork.</td>
</tr>
<tr>
<td>references</td>
<td>References to other creative works, such as another publication, web page, scholarly article, etc.</td>
</tr>
<tr>
<td>text</td>
<td>The textual content of this creative work.</td>
</tr>
<tr>
<td>title</td>
<td>The title of the creative work.</td>
</tr>
<tr>
<td>url</td>
<td>The URL of the item.</td>
</tr>
<tr>
<td>version</td>
<td>The version of the creative work.</td>
</tr>
</tbody>
</table>

Value

A list of class Table

See Also

CreativeWork
TableCell

A cell within a Table.

Description

A cell within a Table.

Usage

TableCell(content, cellType, colspan, id, meta, name, rowspan)

Arguments

- content: Contents of the table cell. Required.
- cellType: Indicates whether the cell is a header or data.
- colspan: How many columns the cell extends.
- id: The identifier for this item.
- meta: Metadata associated with this item.
- name: The name of the cell.
- rowspan: How many columns the cell extends.

Value

A list of class TableCell

See Also

Entity

TableRow

A row within a Table.

Description

A row within a Table.

Usage

TableRow(cells, id, meta, rowType)

Arguments

- cells: An array of cells in the row. Required.
- id: The identifier for this item.
- meta: Metadata associated with this item.
- rowType: If present, indicates that all cells in this row should be treated as header cells.
**ThematicBreak**

**Value**
A list of class TableRow

**See Also**
Entity

---

| ThematicBreak | A thematic break, such as a scene change in a story, a transition to another topic, or a new document. |

**Description**
A thematic break, such as a scene change in a story, a transition to another topic, or a new document.

**Usage**
ThematicBreak(id, meta)

**Arguments**
- **id** The identifier for this item.
- **meta** Metadata associated with this item.

**Value**
A list of class ThematicBreak

**See Also**
Entity

---

| Thing | The most generic type of item. |

**Description**
The most generic type of item.

**Usage**
Thing(alternateNames, description, id, identifiers, images, meta, name, url)
Arguments

- alternateNames: Alternate names (aliases) for the item.
- description: A description of the item.
- id: The identifier for this item.
- identifiers: Any kind of identifier for any kind of Thing.
- images: Images of the item.
- meta: Metadata associated with this item.
- name: The name of the item.
- url: The URL of the item.

Value

A list of class Thing

See Also

Entity

---

**ThingTypes**

*All type schemas that are derived from Thing*

Description

All type schemas that are derived from Thing

Usage

ThingTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type
TupleValidator

A validator specifying constraints on an array of heterogeneous items.

Description

A validator specifying constraints on an array of heterogeneous items.

Usage

TupleValidator(id, items, meta)

Arguments

- **id**: The identifier for this item.
- **items**: An array of validators specifying the constraints on each successive item in the array.
- **meta**: Metadata associated with this item.

Value

A list of class `TupleValidator`

See Also

- `Entity`

Union

*Union type*

Description

Union type

Usage

Union(...)

Arguments

- ...: The types in the union

Value

A list of class `Union` describing the valid sub types of a union type

Examples

Union(character, Person)
ValidatorTypes

Union type for all validator types.

Description
Union type for all validator types.

Usage
ValidatorTypes

Format
An object of class Union of length 1.

Value
A list of class Union describing valid subtypes of this type

Variable
A variable representing a name / value pair.

Description
A variable representing a name / value pair.

Usage
Variable(name, id, isReadonly, meta, validator, value)

Arguments
name The name of the variable. Required.
id The identifier for this item.
isReadonly Whether or not a property is mutable. Default is false.
meta Metadata associated with this item.
validator The validator that the value is validated against.
value The value of the variable.

Value
A list of class Variable

See Also
Entity
VariableTypes

All type schemas that are derived from Variable

Description

All type schemas that are derived from Variable

Usage

VariableTypes

Format

An object of class Union of length 1.

Value

A list of class Union describing valid subtypes of this type

VideoObject

A video file.

Description

A video file.

Usage

VideoObject(
    contentUrl,
    about,
    alternateNames,
    authors,
    bitrate,
    caption,
    comments,
    content,
    contentSize,
    dateAccepted,
    dateCreated,
    dateModified,
    datePublished,
    dateReceived,
    description,
    editors,
    embedUrl,
format, fundedBy, funders, genre, id, identifiers, images, isPartOf, keywords, licenses, maintainers, meta, name, parts, publisher, references, text, thumbnail, title, transcript, url, version

Arguments

contentUrl  URL for the actual bytes of the media object, for example the image file or video file. **Required.**
about         The subject matter of the content.
alternateNames Alternate names (aliases) for the item.
authors       The authors of this creative work.
bitrate       Bitrate in megabits per second (Mbit/s, Mb/s, Mbps).
caption       The caption for this video recording.
comments      Comments about this creative work.
content       The structured content of this creative work c.f. property text.
contentSize   File size in megabits (Mbit, Mb).
dateAccepted  Date/time of acceptance.
dateCreated   Date/time of creation.
dateModified  Date/time of most recent modification.
datePublished Date of first publication.
dateReceived  Date/time that work was received.
description   A description of the item.
editors       People who edited the CreativeWork.
embedUrl URL that can be used to embed the media on a web page via a specific media player.

format Media type (MIME type) as per http://www.iana.org/assignments/media-types/media-types.xhtml.

fundedBy Grants that funded the CreativeWork; reverse of fundedItems.

funders People or organizations that funded the CreativeWork.

genre Genre of the creative work, broadcast channel or group.

id The identifier for this item.

identifiers Any kind of identifier for any kind of Thing.

images Images of the item.

isPartOf An item or other CreativeWork that this CreativeWork is a part of.

keywords Keywords or tags used to describe this content. Multiple entries in a keywords list are typically delimited by commas.

licenses License documents that applies to this content, typically indicated by URL.

maintainers The people or organizations who maintain this CreativeWork.

meta Metadata associated with this item.

name The name of the item.

parts Elements of the collection which can be a variety of different elements, such as Articles, Datatables, Tables and more.

publisher A publisher of the CreativeWork.

references References to other creative works, such as another publication, web page, scholarly article, etc.

text The textual content of this creative work.

thumbnail Thumbnail image of this video recording.

title The title of the creative work.

transcript The transcript of this video recording.

url The URL of the item.

version The version of the creative work.

Value

A list of class VideoObject

See Also

MediaObject
VolumeMount

Describes a volume mount from a host to container.

Description

Describes a volume mount from a host to container.

Usage

```plaintext
VolumeMount(
    mountDestination,
    alternateNames,
    description,
    id,
    identifiers,
    images,
    meta,
    mountOptions,
    mountSource,
    mountType,
    name,
    url
)
```

Arguments

- `mountDestination` The mount location inside the container. **Required.**
- `alternateNames` Alternate names (aliases) for the item.
- `description` A description of the item.
- `id` The identifier for this item.
- `identifiers` Any kind of identifier for any kind of Thing.
- `images` Images of the item.
- `meta` Metadata associated with this item.
- `mountOptions` A list of options to use when applying the mount.
- `mountSource` The mount source directory on the host.
- `mountType` The type of mount.
- `name` The name of the item.
- `url` The URL of the item.

Value

A list of class VolumeMount
See Also

   Thing
Index

* datasets
  BlockContent, 11
  CodeBlockTypes, 17
  CodeFragmentTypes, 21
  CodeTypes, 22
  ContactPointTypes, 28
  CreativeWorkTypes, 30
  EntityTypes, 37
  GrantTypes, 42
  InlineContent, 46
  MarkTypes, 52
  MathTypes, 55
  MediaObjectTypes, 58
  Node, 59
  NumberValidatorTypes, 61
  ThingTypes, 94
  ValidatorTypes, 96
  VariableTypes, 97

  CodeFragment, 20, 20
  CodeFragmentTypes, 21
  CodeTypes, 22
  Collection, 22
  Comment, 24
  ConstantValidator, 26
  ContactPoint, 27, 70
  ContactPointTypes, 28
  CreativeWork, 8, 24, 26, 28, 32, 40, 57, 67,
    74, 76, 79, 82, 87, 91
  CreativeWorkTypes, 30

  Datatable, 31
  DatatableColumn, 33
  Date, 34
  DefinedTerm, 34
  Delete, 35

  Emphasis, 36
  Entity, 5, 12, 14–16, 19, 26, 34, 36, 38, 41,
    43, 46, 50, 52, 53, 61, 63, 77, 87,
    92–96
  EntityTypes, 37
  Enum, 37
  EnumValidator, 38

  Figure, 38
  Function, 40

  Grant, 41, 59
  GrantTypes, 42

  Heading, 43

  ImageObject, 43
  Include, 46
  InlineContent, 46
  IntegerValidator, 47
  is_class, 48
  is_type, 48
INDEX

last_class, 49
Link, 49
List, 50
ListItem, 51
Mark, 35, 36, 52, 60, 77, 88, 89
MarkTypes, 52
Math, 53, 54
MathBlock, 53
MathFragment, 54
MathTypes, 55
MediaObject, 11, 45, 55, 99
MediaObjectTypes, 58
MonetaryGrant, 58

Node, 59
NontextualAnnotation, 60
NumberValidator, 47, 60
NumberValidatorTypes, 61

Organization, 62
Paragraph, 63
Parameter, 64
Periodical, 65
Person, 67
PostalAddress, 68
Product, 70
PropertyValue, 71
PublicationIssue, 72
PublicationVolume, 74

Quote, 76
QuoteBlock, 77

Review, 78

SoftwareApplication, 80
SoftwareEnvironment, 82
SoftwareSession, 83
SoftwareSourceCode, 85
StringValidator, 87
Strong, 88
Subscript, 88
Superscript, 89

Table, 89
TableCell, 92
TableRow, 92
ThematicBreak, 93

Thing, 13, 28, 30, 33, 35, 42, 51, 63, 68, 71, 72, 83, 84, 93, 101
ThingTypes, 94
TupleValidator, 95

Union, 95

ValidatorTypes, 96
Variable, 64, 96
VariableTypes, 97
VideoObject, 97
VolumeMount, 100

ThingTypes, 94
TupleValidator, 95

Union, 95