
py-serializable

Release 1.0.3

Paul Horton

Apr 04, 2024

CONTENTS:

1 Getting Started 3

2 Customising Serialization 7

2.1 Property Name Mappings 7

2.2 Excluding Property from Serialization 7

2.3 Handling None Values 8

2.4 Customised Property Serialization 8

2.5 Serializing Lists & Sets 8

2.6 Serialization Views 9

2.7 XML Element Ordering 11

3 Property Name Formatting 13

3.1 Included Formatters 13

3.2 Changing the Formatter 13

3.3 Custom Formatters 14

4 Examples 15

4.1 Models used in Unit Tests 15

4.2 Logging and log access 24

5 Support 25

5.1 Python Version Support 25

6 CHANGELOG 27

6.1 v1.0.3 (2024-04-04) 27

6.2 v1.0.2 (2024-03-01) 28

6.3 v1.0.1 (2024-02-13) 29

6.4 v1.0.0 (2024-01-22) 31

6.5 v0.17.1 (2024-01-07) 32

6.6 v0.17.0 (2024-01-06) 32

6.7 v0.16.0 (2023-11-29) 35

6.8 v0.15.0 (2023-10-10) 36

6.9 v0.14.1 (2023-10-08) 36

6.10 v0.14.0 (2023-10-06) 37

6.11 v0.13.1 (2023-10-06) 37

6.12 v0.13.0 (2023-10-01) 38

6.13 Changed 38

6.14 Added 38

6.15 v0.12.1 (2023-10-01) 39

6.16 v0.12.0 (2023-03-07) 41

6.17 v0.11.1 (2023-03-03) 42

6.18	v0.11.0 (2023-03-03)	43
6.19	v0.10.1 (2023-03-02)	44
6.20	v0.10.0 (2023-02-21)	44
6.21	v0.9.3 (2023-01-27)	45
6.22	v0.9.2 (2023-01-27)	46
6.23	v0.9.1 (2023-01-26)	46
6.24	v0.9.0 (2023-01-24)	47
6.25	v0.8.2 (2023-01-23)	48
6.26	v0.8.1 (2023-01-23)	48
6.27	v0.8.0 (2023-01-20)	49
6.28	v0.7.3 (2022-09-22)	49
6.29	v0.7.2 (2022-09-22)	50
6.30	v0.7.1 (2022-09-15)	50
6.31	v0.7.0 (2022-09-14)	51
6.32	v0.6.0 (2022-09-14)	51
6.33	v0.5.0 (2022-09-12)	52
6.34	v0.4.0 (2022-09-06)	52
6.35	v0.3.9 (2022-08-24)	54
6.36	v0.3.8 (2022-08-24)	55
6.37	v0.3.7 (2022-08-23)	55
6.38	v0.3.6 (2022-08-23)	55
6.39	v0.3.5 (2022-08-22)	56
6.40	v0.3.4 (2022-08-22)	56
6.41	v0.3.3 (2022-08-19)	57
6.42	v0.3.2 (2022-08-19)	57
6.43	v0.3.1 (2022-08-19)	57
6.44	v0.3.0 (2022-08-19)	58
6.45	v0.2.3 (2022-08-19)	58
6.46	v0.2.2 (2022-08-19)	59
6.47	v0.2.1 (2022-08-18)	59
6.48	v0.2.0 (2022-08-18)	59
6.49	v0.1.7 (2022-08-15)	60
6.50	v0.1.6 (2022-08-15)	61
6.51	v0.1.5 (2022-08-13)	61
6.52	v0.1.4 (2022-08-13)	62
6.53	v0.1.3 (2022-08-12)	62
6.54	v0.1.2 (2022-08-12)	62
6.55	v0.1.1 (2022-08-11)	63
6.56	v0.1.0 (2022-08-10)	63
7	API Reference	65
7.1	serializable	65
	Python Module Index	81
	Index	83

This Pythonic-library can be used to magically handle serialization of your Python Objects to JSON or XML and de-serialization from JSON or XML back to Pythonic Object instances.

This library relies upon your Python Classes utilising the `@property` decorator and can optionally take additional configuration which allows you to control how a class is (de-)serialized.

See also:

- Python's `property()` function/decorator

GETTING STARTED

Let's work a simple example together.

I have a two Python classes that together I use to model Books. They are Book and Chapter, and they are defined as follows:

```
class Chapter:

    def __init__(self, *, number: int, title: str) -> None:
        self._number = number
        self._title = title

    @property
    def number(self) -> int:
        return self._number

    @property
    def title(self) -> str:
        return self._title

class Book:

    def __init__(self, *, title: str, isbn: str, edition: int, publish_date: date,
    ↪ authors: Iterable[str],
        chapters: Optional[Iterable[Chapter]] = None) -> None:
        self._title = title
        self._isbn = isbn
        self._edition = edition
        self._publish_date = publish_date
        self._authors = set(authors)
        self.chapters = chapters or []

    @property
    def title(self) -> str:
        return self._title

    @property
    def isbn(self) -> str:
        return self._isbn

    @property
    def edition(self) -> int:
```

(continues on next page)

(continued from previous page)

```

        return self._edition

    @property
    def publish_date(self) -> date:
        return self._publish_date

    @property
    def authors(self) -> Set[str]:
        return self._authors

    @property
    def chapters(self) -> List[Chapter]:
        return self._chapters

    @chapters.setter
    def chapters(self, chapters: Iterable[Chapter]) -> None:
        self._chapters = list(chapters)

```

To make a class serializable to/from JSON or XML, the class must be annotated with the decorator `serializable.serializable_class`.

By simply modifying the classes above, we make them (de-)serializable with this library (albeit with some default behaviour implied!).

This makes our classes:

```

import serializable

@serializable.serializable_class
class Chapter:

    def __init__(self, *, number: int, title: str) -> None:
        self._number = number
        self._title = title

    @property
    def number(self) -> int:
        return self._number

    @property
    def title(self) -> str:
        return self._title

@serializable.serializable_class
class Book:

    def __init__(self, *, title: str, isbn: str, edition: int, publish_date: date,
    ↪ authors: Iterable[str],
        chapters: Optional[Iterable[Chapter]] = None) -> None:
        self._title = title
        self._isbn = isbn
        self._edition = edition
        self._publish_date = publish_date

```

(continues on next page)

(continued from previous page)

```

        self._authors = set(authors)
        self.chapters = chapters or []

    @property
    def title(self) -> str:
        return self._title

    @property
    def isbn(self) -> str:
        return self._isbn

    @property
    def edition(self) -> int:
        return self._edition

    @property
    def publish_date(self) -> date:
        return self._publish_date

    @property
    def authors(self) -> Set[str]:
        return self._authors

    @property
    def chapters(self) -> List[Chapter]:
        return self._chapters

    @chapters.setter
    def chapters(self, chapters: Iterable[Chapter]) -> None:
        self._chapters = list(chapters)

```

At this point, we can serialize an instance of Book to JSON as follows:

```

book = Book(title="My Book", isbn="999-888777666555", edition=1, publish_date=datetime.
    ↪ utcnow(), authors=['me'])
print(book.as_json())

```

which outputs:

```

{
  "title": "My Book",
  "isbn": "999-888777666555",
  "edition": 1,
  "publishDate": "2022-08-10",
  "authors": [
    "me"
  ]
}

```

We could also serialized to XML as follows:

```

print(book.as_xml())

```

which outputs:

```
<?xml version="1.0" encoding="UTF-8"?>
<book>
  <title>My Book</title>
  <isbn>999-888777666555</isbn>
  <edition>1</edition>
  <publishDate>2022-08-10</publishDate>
  <author>me</author>
</book>
```

CUSTOMISING SERIALIZATION

There are various scenarios whereby you may want to have more control over the structure (particularly in XML) that is generated when serializing an object, and thus understanding how to deserialize JSON or XML back to an object.

This library provides a number of *meta methods* that you can override in your Python classes to achieve this.

2.1 Property Name Mappings

You can directly control mapping of property names for properties in a Class by adding the decorators `serializable.json_name()` or `serializable.xml_name()`.

For example, you might have a property called `isbn` in your class, but when serialized to JSON it should be called `isbn_number`.

To implement this mapping, you would alter your class as follows adding the `serializable.json_name()` decorator to the `isbn` property:

```
@serializable.serializable_class
class Book:

    def __init__(self, title: str, isbn: str, publish_date: date, authors: Iterable[str],
        ...

    @property
    @serializable.json_name('isbn_number')
    def isbn(self) -> str:
        return self._isbn
```

2.2 Excluding Property from Serialization

Properties can be ignored during deserialization by including them in the `serializable.serializable_class()` annotation as per the following example.

A typical use case for this might be where a JSON schema is referenced, but this is not part of the constructor for the class you are deserializing to.

```
@serializable.serializable_class(ignore_during_deserialization=['$schema'])
class Book:
    ...
```

2.3 Handling None Values

By default, None values will lead to a Property being excluded from the serialization process to keep the output as concise as possible. There are many cases (and schemas) where this is however not the required behaviour.

You can force a Property to be serialized even when the value is None by annotating as follows:

```
@serializable.include_none
def email(self) -> Optional[str]:
    return self._email
```

2.4 Customised Property Serialization

This feature allows you to handle, for example, serialization of `datetime.date` Python objects to and from strings.

Depending on your use case, the string format could vary, and thus this library makes no assumptions. We have provided an some example helpers for (de-)serializing dates and datetimes.

To define a custom serializer for a property, add the `serializable.type_mapping()` decorator to the property. For example, to have a property named `created` be use the `serializable.helpers.Iso8601Date` helper you would add the following method to your class:

```
@serializable.serializable_class
class Book:

    def __init__(self, title: str, isbn: str, publish_date: date, authors: Iterable[str],
        ...

    @property
    @serializable.type_mapping(Iso8601Date)
    def publish_date(self) -> date:
        return self._publish_date
```

2.4.1 Writing Custom Property Serializers

You can write your own custom property serializer. The only requirements are that it must extend `serializable.helpers.BaseHelper` and therefore implement the `serialize()` and `deserialize()` class methods.

For examples, see `serializable.helpers`.

2.5 Serializing Lists & Sets

Particularly in XML, there are many ways that properties which return Lists or Sets could be represented. We can handle this by adding the decorator `serializable.xml_array()` to the appropriate property in your class.

For example, given a Property that returns `Set[Chapter]`, this could be serialized in one of a number of ways:

Listing 1: Example 1: Nested list under a property name in JSON

```
{
  "chapters": [
    { /* chapter 1 here... */ },
    { /* chapter 2 here... */ },
    // etc...
  ]
}
```

Listing 2: Example 2: Nested list under a property name in XML

```
<chapters>
  <chapter><!-- chapter 1 here... --></chapter>
  <chapter><!-- chapter 2 here... --></chapter>
  <!-- etc... -->
</chapters>
```

Listing 3: Example 3: Collapsed list under a (potentially singular of the) property name in XML

```
<chapter><!-- chapter 1 here... --></chapter>
<chapter><!-- chapter 2 here... --></chapter>
```

As we have only identified one possible structure for JSON at this time, the implementation of only affects XML (de-)serialization at this time.

For *Example 2*, you would add the following to your class:

```
@property
@serializable.xml_array(XmlArraySerializationType.NESTED, 'chapter')
def chapters(self) -> List[Chapter]:
    return self._chapters
```

For *Example 3*, you would add the following to your class:

```
@property
@serializable.xml_array(XmlArraySerializationType.FLAT, 'chapter')
def chapters(self) -> List[Chapter]:
    return self._chapters
```

Further examples are available in our unit tests.

2.6 Serialization Views

Many object models can be serialized to and from multiple versions of a schema or different schemas. In py-serialization we refer to these as Views.

By default all Properties will be included in the serialization process, but this can be customised based on the View.

2.6.1 Defining Views

A View is a class that extends `serializable.ViewType` and you should create classes as required in your implementation.

For example:

```
from serializable import ViewType

class SchemaVersion1(ViewType):
    pass
```

2.6.2 Property Inclusion

Properties can be annotated with the Views for which they should be included.

For example:

```
@property
@serializable.view(SchemaVersion1)
def address(self) -> Optional[str]:
    return self._address
```

2.6.3 Handling None Values

Further to the above, you can vary the None value per View as follows:

```
@property
@serializable.include_none(SchemaVersion2)
@serializable.include_none(SchemaVersion3, "RUBBISH")
def email(self) -> Optional[str]:
    return self._email
```

The above example will result in None when serializing with the View `SchemaVersion2`, but the value `RUBBISH` when serializing to the View `SchemaVersion3` when `email` is not set.

2.6.4 Serializing For a View

To serialized for a specific View, include the View when you perform the serialisation.

Listing 4: JSON Example

```
ThePhoenixProject.as_json(view_=SchemaVersion1)
```

Listing 5: XML Example

```
ThePhoenixProject.as_xml(view=SchemaVersion1)
```

2.7 XML Element Ordering

Some XML schemas utilise [sequence](#) which requires elements to be in a prescribed order.

You can control the order properties are serialized to elements in XML by utilising the [serializable.xml_sequence\(\)](#) decorator. The default sort order applied to properties is 100 (where lower is earlier in the sequence).

In the example below, the `isbn` property will be output first.

```
@property
@serializable.xml_sequence(1)
def isbn(self) -> str:
    return self._isbn
```


PROPERTY NAME FORMATTING

By default, `py-serializable` uses its `serializable.formatters.CamelCasePropertyNameFormatter` formatter for translating actual Python property names to element names in either JSON or XML.

`py-serializable` includes a number of name formatters out of the box, but you can also create your own if required.

3.1 Included Formatters

`py-serializable` includes three common formatters out of the box.

1. Camel Case Formatter: `serializable.formatters.CamelCasePropertyNameFormatter` (the default)
2. Kebab Case Formatter: `serializable.formatters.KebabCasePropertyNameFormatter`
3. Snake Case Formatter: `serializable.formatters.SnakeCasePropertyNameFormatter`

A summary of how these differ is included in the below table.

Python Property Name	Camel Case	Kebab Case	Snake Case
books	books	books	books
big_book	bigBook	big-book	big_book
a_very_big_book	aVeryBigBook	a-very-big-book	a_very_big_book

3.2 Changing the Formatter

You can change the formatter being used by easily. The example below changes the formatter to be Snake Case.

```
from serializable.formatters import CurrentFormatter, SnakeCasePropertyNameFormatter

CurrentFormatter.formatter = SnakeCasePropertyNameFormatter
```

3.3 Custom Formatters

If none of the included formatters work for you, why not write your own?

The only requirement is that it extends `serializable.formatters.BaseNameFormatter`!

EXAMPLES

4.1 Models used in Unit Tests

```
1  # encoding: utf-8
2
3  # This file is part of py-serializable
4  #
5  # Licensed under the Apache License, Version 2.0 (the "License");
6  # you may not use this file except in compliance with the License.
7  # You may obtain a copy of the License at
8  #
9  #     http://www.apache.org/licenses/LICENSE-2.0
10 #
11 # Unless required by applicable law or agreed to in writing, software
12 # distributed under the License is distributed on an "AS IS" BASIS,
13 # WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
14 # See the License for the specific language governing permissions and
15 # limitations under the License.
16 #
17 # SPDX-License-Identifier: Apache-2.0
18 # Copyright (c) Paul Horton. All Rights Reserved.
19
20 import re
21 from datetime import date
22 from decimal import Decimal
23 from enum import Enum, unique
24 from typing import Any, Dict, Iterable, List, Optional, Set, Type
25 from uuid import UUID, uuid4
26
27 import serializable
28 from serializable import ViewType, XmlArraySerializationType
29 from serializable.helpers import BaseHelper, Iso8601Date
30
31 """
32 Model classes used in unit tests and examples.
33 """
34
35
36 class SchemaVersion1(ViewType):
37     pass
```

(continues on next page)

(continued from previous page)

```

38
39
40 class SchemaVersion2(ViewType):
41     pass
42
43
44 class SchemaVersion3(ViewType):
45     pass
46
47
48 class SchemaVersion4(ViewType):
49     pass
50
51
52 SCHEMAVERSION_MAP: Dict[int, Type[ViewType]] = {
53     1: SchemaVersion1,
54     2: SchemaVersion2,
55     3: SchemaVersion3,
56     4: SchemaVersion4,
57 }
58
59
60 class ReferenceReferences(BaseHelper):
61
62     @classmethod
63     def serialize(cls, o: Any) -> Set[str]:
64         if isinstance(o, set):
65             return set(map(lambda i: str(i.ref), o))
66
67         raise ValueError(f'Attempt to serialize a non-set: {o.__class__}')
68
69     @classmethod
70     def deserialize(cls, o: Any) -> Set['BookReference']:
71         print(f'Deserializing {o} ({type(o)}')
72         references: Set['BookReference'] = set()
73         if isinstance(o, list):
74             for v in o:
75                 references.add(BookReference(ref=v))
76         return references
77
78         raise ValueError(f'Attempt to deserialize a non-set: {o.__class__}')
79
80
81 class TitleMapper(BaseHelper):
82
83     @classmethod
84     def json_serialize(cls, o: str) -> str:
85         return f'{{{}}}'
86
87     @classmethod
88     def json_deserialize(cls, o: str) -> str:
89         return re.sub(r'^\{\}\}', '', o)

```

(continues on next page)

(continued from previous page)

```

90
91     @classmethod
92     def xml_serialize(cls, o: str) -> str:
93         return f'{{{X}}} {o}'
94
95     @classmethod
96     def xml_deserialize(cls, o: str) -> str:
97         return re.sub(r'^\{{{X}} }', '', o)
98
99
100 @serializable.serializable_class
101 class Chapter:
102
103     def __init__(self, *, number: int, title: str) -> None:
104         self._number = number
105         self._title = title
106
107     @property
108     def number(self) -> int:
109         return self._number
110
111     @property
112     def title(self) -> str:
113         return self._title
114
115     def __eq__(self, other: Any) -> bool:
116         if isinstance(other, Chapter):
117             return hash(other) == hash(self)
118         return False
119
120     def __hash__(self) -> int:
121         return hash((self.number, self.title))
122
123
124 @serializable.serializable_class
125 class Publisher:
126
127     def __init__(self, *, name: str, address: Optional[str] = None, email: Optional[str]
128 ↪ = None) -> None:
129         self._name = name
130         self._address = address
131         self._email = email
132
133     @property
134     def name(self) -> str:
135         return self._name
136
137     @property
138     @serializable.view(Version2)
139     @serializable.view(Version4)
140     def address(self) -> Optional[str]:
141         return self._address

```

(continues on next page)

(continued from previous page)

```

141
142     @property
143     @serializable.include_none(SchemaVersion2)
144     @serializable.include_none(SchemaVersion3, 'RUBBISH')
145     def email(self) -> Optional[str]:
146         return self._email
147
148     def __eq__(self, other: object) -> bool:
149         if isinstance(other, Publisher):
150             return hash(other) == hash(self)
151         return False
152
153     def __hash__(self) -> int:
154         return hash((self.name, self.address, self.email))
155
156
157 @unique
158 class BookType(Enum):
159     FICTION = 'fiction'
160     NON_FICTION = 'non-fiction'
161
162
163 @serializable.serializable_class(name='edition')
164 class BookEdition:
165
166     def __init__(self, *, number: int, name: str) -> None:
167         self._number = number
168         self._name = name
169
170     @property
171     @serializable.xml_attribute()
172     def number(self) -> int:
173         return self._number
174
175     @property
176     @serializable.xml_name('.')
177     def name(self) -> str:
178         return self._name
179
180     def __eq__(self, other: object) -> bool:
181         if isinstance(other, BookEdition):
182             return hash(other) == hash(self)
183         return False
184
185     def __hash__(self) -> int:
186         return hash((self.number, self.name))
187
188
189 @serializable.serializable_class
190 class BookReference:
191
192     def __init__(self, *, ref: str, references: Optional[Iterable['BookReference']] = _

```

(continues on next page)

(continued from previous page)

```

193 ↪None) -> None:
194     self.ref = ref
195     self.references = set(references or {})
196
197 @property
198 @serializable.json_name('reference')
199 @serializable.xml_attribute()
200 def ref(self) -> str:
201     return self._ref
202
203 @ref.setter
204 def ref(self, ref: str) -> None:
205     self._ref = ref
206
207 @property
208 @serializable.json_name('refersTo')
209 @serializable.type_mapping(ReferenceReferences)
210 @serializable.xml_array(serializable.XmlArraySerializationType.FLAT, 'reference')
211 def references(self) -> Set['BookReference']:
212     return self._references
213
214 @references.setter
215 def references(self, references: Iterable['BookReference']) -> None:
216     self._references = set(references)
217
218 def __eq__(self, other: object) -> bool:
219     if isinstance(other, BookReference):
220         return hash(other) == hash(self)
221     return False
222
223 def __hash__(self) -> int:
224     return hash((self.ref, tuple(self.references)))
225
226 def __repr__(self) -> str:
227     return f'<BookReference ref={self.ref}, targets={len(self.references)}>'
228
229 @serializable.serializable_class
230 class StockId(serializable.helpers.BaseHelper):
231
232     def __init__(self, id: str) -> None:
233         self._id = id
234
235     @property
236     @serializable.json_name('.')
237     @serializable.xml_name('.')
238     def id(self) -> str:
239         return self._id
240
241     @classmethod
242     def serialize(cls, o: Any) -> str:
243         if isinstance(o, StockId):

```

(continues on next page)

(continued from previous page)

```

244         return str(o)
245     raise Exception(
246         f'Attempt to serialize a non-StockId: {o!r}')
247
248 @classmethod
249 def deserialize(cls, o: Any) -> 'StockId':
250     try:
251         return StockId(id=str(o))
252     except ValueError as err:
253         raise Exception(
254             f'StockId string supplied does not parse: {o!r}'
255         ) from err
256
257 def __eq__(self, other: Any) -> bool:
258     if isinstance(other, StockId):
259         return hash(other) == hash(self)
260     return False
261
262 def __lt__(self, other: Any) -> bool:
263     if isinstance(other, StockId):
264         return self._id < other._id
265     return NotImplemented
266
267 def __hash__(self) -> int:
268     return hash(self._id)
269
270 def __repr__(self) -> str:
271     return f'<StockId {self._id}>'
272
273 def __str__(self) -> str:
274     return self._id
275
276
277 @serializable.serializable_class(name='bigbook',
278                                   ignore_during_deserialization=['something_to_be_ignored
279 ↪', 'ignore_me', 'ignored'])
280 class Book:
281     def __init__(self, title: str, isbn: str, publish_date: date, authors: Iterable[str],
282                  publisher: Optional[Publisher] = None, chapters: ↵
283 ↪Optional[Iterable[Chapter]] = None,
284                  edition: Optional[BookEdition] = None, type: BookType = BookType.
285 ↪FICTION,
286                  id: Optional[UUID] = None, references: ↵
287 ↪Optional[Iterable[BookReference]] = None,
288                  rating: Optional[Decimal] = None, stock_ids: ↵
289 ↪Optional[Iterable[StockId]] = None) -> None:
290     self._id = id or uuid4()
291     self._title = title
292     self._isbn = isbn
293     self._edition = edition
294     self._publish_date = publish_date

```

(continues on next page)

(continued from previous page)

```

291     self._authors = set(authors)
292     self._publisher = publisher
293     self.chapters = list(chapters or [])
294     self._type = type
295     self.references = set(references or [])
296     self.rating = Decimal('NaN') if rating is None else rating
297     self._stock_ids = set(stock_ids or [])
298
299     @property
300     @serializable.xml_sequence(1)
301     def id(self) -> UUID:
302         return self._id
303
304     @property
305     @serializable.xml_sequence(2)
306     @serializable.type_mapping(TitleMapper)
307     def title(self) -> str:
308         return self._title
309
310     @property
311     @serializable.json_name('isbn_number')
312     @serializable.xml_attribute()
313     @serializable.xml_name('isbn_number')
314     def isbn(self) -> str:
315         return self._isbn
316
317     @property
318     @serializable.xml_sequence(3)
319     def edition(self) -> Optional[BookEdition]:
320         return self._edition
321
322     @property
323     @serializable.xml_sequence(4)
324     @serializable.type_mapping(Iso8601Date)
325     def publish_date(self) -> date:
326         return self._publish_date
327
328     @property
329     @serializable.xml_array(XmlArraySerializationType.FLAT, 'author')
330     @serializable.xml_sequence(5)
331     def authors(self) -> Set[str]:
332         return self._authors
333
334     @property
335     @serializable.xml_sequence(7)
336     def publisher(self) -> Optional[Publisher]:
337         return self._publisher
338
339     @property
340     @serializable.xml_array(XmlArraySerializationType.NESTED, 'chapter')
341     @serializable.xml_sequence(8)
342     def chapters(self) -> List[Chapter]:

```

(continues on next page)

(continued from previous page)

```

343         return self._chapters
344
345     @chapters.setter
346     def chapters(self, chapters: Iterable[Chapter]) -> None:
347         self._chapters = list(chapters)
348
349     @property
350     @serializable.xml_sequence(6)
351     def type(self) -> BookType:
352         return self._type
353
354     @property
355     @serializable.view(SchemaVersion4)
356     @serializable.xml_array(serializable.XmlArraySerializationType.NESTED, 'reference')
357     @serializable.xml_sequence(7)
358     def references(self) -> Set[BookReference]:
359         return self._references
360
361     @references.setter
362     def references(self, references: Iterable[BookReference]) -> None:
363         self._references = set(references)
364
365     @property
366     @serializable.xml_sequence(20)
367     def rating(self) -> Decimal:
368         return self._rating
369
370     @rating.setter
371     def rating(self, rating: Decimal) -> None:
372         self._rating = rating
373
374     @property
375     @serializable.view(SchemaVersion4)
376     @serializable.xml_array(XmlArraySerializationType.FLAT, 'stockId')
377     @serializable.xml_sequence(21)
378     def stock_ids(self) -> Set[StockId]:
379         return self._stock_ids
380
381
382 ThePhoenixProject_v1 = Book(
383     title='The Phoenix Project', isbn='978-1942788294', publish_date=date(year=2018,
384     ↪ month=4, day=16),
385     authors=['Gene Kim', 'Kevin Behr', 'George Spafford'],
386     publisher=Publisher(name='IT Revolution Press LLC'),
387     edition=BookEdition(number=5, name='5th Anniversary Limited Edition'),
388     id=UUID('f3758bf0-0ff7-4366-a5e5-c209d4352b2d'),
389     rating=Decimal('9.8')
390 )
391
392 ThePhoenixProject_v1.chapters.append(Chapter(number=1, title='Tuesday, September 2'))
393 ThePhoenixProject_v1.chapters.append(Chapter(number=2, title='Tuesday, September 2'))
394 ThePhoenixProject_v1.chapters.append(Chapter(number=3, title='Tuesday, September 2'))

```

(continues on next page)

(continued from previous page)

```

394 ThePhoenixProject_v1.chapters.append(Chapter(number=4, title='Wednesday, September 3'))
395
396 ThePhoenixProject_v2 = Book(
397     title='The Phoenix Project', isbn='978-1942788294', publish_date=date(year=2018,
↪ month=4, day=16),
398     authors=['Gene Kim', 'Kevin Behr', 'George Spafford'],
399     publisher=Publisher(name='IT Revolution Press LLC', address='10 Downing Street'),
400     edition=BookEdition(number=5, name='5th Anniversary Limited Edition'),
401     id=UUID('f3758bf0-0ff7-4366-a5e5-c209d4352b2d'),
402     rating=Decimal('9.8'),
403     stock_ids=[StockId('stock-id-1'), StockId('stock-id-2')]
404 )
405
406 ThePhoenixProject_v2.chapters.append(Chapter(number=1, title='Tuesday, September 2'))
407 ThePhoenixProject_v2.chapters.append(Chapter(number=2, title='Tuesday, September 2'))
408 ThePhoenixProject_v2.chapters.append(Chapter(number=3, title='Tuesday, September 2'))
409 ThePhoenixProject_v2.chapters.append(Chapter(number=4, title='Wednesday, September 3'))
410
411 SubRef1 = BookReference(ref='sub-ref-1')
412 SubRef2 = BookReference(ref='sub-ref-2')
413 SubRef3 = BookReference(ref='sub-ref-3')
414
415 Ref1 = BookReference(ref='my-ref-1')
416 Ref2 = BookReference(ref='my-ref-2', references=[SubRef1, SubRef3])
417 Ref3 = BookReference(ref='my-ref-3', references=[SubRef2])
418
419 ThePhoenixProject_v2.references = {Ref3, Ref2, Ref1}
420
421 ThePhoenixProject = ThePhoenixProject_v2
422
423 if __name__ == '__main__':
424     tpp_as_xml = ThePhoenixProject.as_xml() # type:ignore[attr-defined]
425     tpp_as_json = ThePhoenixProject.as_json() # type:ignore[attr-defined]
426     print(tpp_as_xml, tpp_as_json, sep='\n\n')
427
428     import io
429     import json
430
431     tpp_from_xml = ThePhoenixProject.from_xml( # type:ignore[attr-defined]
432         io.StringIO(tpp_as_xml))
433     tpp_from_json = ThePhoenixProject.from_json( # type:ignore[attr-defined]
434         json.loads(tpp_as_json))

```

4.2 Logging and log access

This library utilizes an own instance of `Logger`, which you may access and add handlers to.

Listing 1: Example: send all logs messages to stderr

```
import sys
import logging
import serializable

my_log_handler = logging.StreamHandler(sys.stderr)
my_log_handler.setLevel(logging.DEBUG)
my_log_handler.setFormatter(logging.Formatter('%(asctime)s - %(name)s - %(levelname)s -
↪%(message)s'))
serializable.logger.addHandler(my_log_handler)
serializable.logger.setLevel(my_log_handler.level)
serializable.logger.propagate = False

@serializable.serializable_class
class Chapter:

    def __init__(self, *, number: int, title: str) -> None:
        self._number = number
        self._title = title

    @property
    def number(self) -> int:
        return self._number

    @property
    def title(self) -> str:
        return self._title

moby_dick_c1 = Chapter(number=1, title='Loomings')
print(moby_dick_c1.as_json())
```

SUPPORT

If you run into issues utilising this library, please raise a [GitHub Issue](#). When raising an issue please include as much detail as possible including:

- Version of `py-serializable` you have installed
- Input(s)
- Expected Output(s)
- Actual Output(s)

5.1 Python Version Support

We endeavour to support all functionality for all [current actively supported Python versions](#). However, some features may not be possible/present in older Python versions due to their lack of support - which are noted below.

CHANGELOG

6.1 v1.0.3 (2024-04-04)

6.1.1 Chore

- chore(deps-dev): update autopep8 requirement from 2.0.4 to 2.1.0 (#86)

Updates the requirements on `autopep8` to permit the latest version.

- [Release notes](#)
- [Commits](#)

updated-dependencies:

- dependency-name: autopep8 dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`1577157` <<https://github.com/madpah/serializable/commit/1577157b585f538d63dba80c26aa19c3804b2740>>`_)

- chore(deps-dev): update flake8-logging requirement from 1.5.0 to 1.6.0 (#87)

Updates the requirements on `flake8-logging` to permit the latest version.

- [Changelog](#)
- [Commits](#)

updated-dependencies:

- dependency-name: flake8-logging dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`7d64241` <<https://github.com/madpah/serializable/commit/7d6424115c02543b5d37d6c0025eed70279e2eab>>`_)

- chore(deps-dev): update coverage requirement from 7.4.3 to 7.4.4 (#84)

Updates the requirements on `coverage` to permit the latest version.

- [Release notes](#)
- [Changelog](#)
- [Commits](#)

updated-dependencies:

- dependency-name: coverage dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> (`425f05e`` <<https://github.com/madpah/serializable/commit/425f05e7161d21534730349965fc1b3e896b4c9f>>`_)

- chore(deps-dev): update mypy requirement from 1.8.0 to 1.9.0 (#83)

Updates the requirements on [mypy](#) to permit the latest version.

- [Changelog](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: mypy dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> (`9fa5297`` <<https://github.com/madpah/serializable/commit/9fa52975c1267b952d961c69bd47e820b74d8084>>`_)

6.1.2 Fix

- fix: support deserialization of XML flat arrays where `child_name` does not conform to current formatter #89 (#90)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`ade5bd7`` <<https://github.com/madpah/serializable/commit/ade5bd76cf945b7380dbeac5e6233417da2d26c6>>`_)

6.2 v1.0.2 (2024-03-01)

6.2.1 Build

- build: use poetry v1.8.1 (#81)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`46a8d9e`` <<https://github.com/madpah/serializable/commit/46a8d9e629ac502864a99acaa9418d1c5cd32388>>`_)

6.2.2 Chore

- chore(deps-dev): update coverage requirement from 7.4.1 to 7.4.3 (#79)

Updates the requirements on [coverage](#) to permit the latest version.

- [Release notes](#)
 - [Changelog](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: coverage dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com>; Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (``fbf9b06`` <<https://github.com/madpah/serializable/commit/fbf9b0609227ebb31ee3f652358f3e18e5ef71b8>>`_)

- chore(deps): bump Gr1N/setup-poetry from 8 to 9 (#80)

Bumps Gr1N/setup-poetry from 8 to 9.

- [Release notes](#)
- [Commits](#)

updated-dependencies:

- dependency-name: Gr1N/setup-poetry dependency-type: direct:production update-type: version-update:semver-major ...

Signed-off-by: dependabot[bot] <support@github.com>; Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (``3264bc6`` <<https://github.com/madpah/serializable/commit/3264bc6cf7ff7473968d506ea85ebc04ced0ea79>>`_)

- chore(deps-dev): update flake8-quotes requirement from 3.3.2 to 3.4.0 (#77)

Updates the requirements on flake8-quotes to permit the latest version.

- [Commits](#)

updated-dependencies:

- dependency-name: flake8-quotes dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com>; Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (``8a5460a`` <<https://github.com/madpah/serializable/commit/8a5460a453eaad49faf0245e435147bac727eb9e>>`_)

- chore: typo in SECURITY.md (``06f557d`` <<https://github.com/madpah/serializable/commit/06f557db1200f019029ed5646274862f3be62643>>`_)

6.3 v1.0.1 (2024-02-13)

6.3.1 Chore

- chore(deps-dev): update coverage requirement from 7.4.0 to 7.4.1 (#69)

Updates the requirements on coverage to permit the latest version.

- [Release notes](#)
- [Changelog](#)
- [Commits](#)

updated-dependencies:

- dependency-name: coverage dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`447e6b8` <<https://github.com/madpah/serializable/commit/447e6b8446382a8fdd27ffd83ed8bca03a7d9717>>`\_`)

- chore(deps-dev): update flake8-bugbear requirement (#71)

Updates the requirements on `flake8-bugbear` to permit the latest version.

- [Release notes](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: flake8-bugbear dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`e3e51a4` <<https://github.com/madpah/serializable/commit/e3e51a4f25a0bc521bc035ce0df2de669c166e>>`\_`)

- chore(deps-dev): update flake8-logging requirement from 1.4.0 to 1.5.0 (#70)

Updates the requirements on `flake8-logging` to permit the latest version.

- [Changelog](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: flake8-logging dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`aeca110` <<https://github.com/madpah/serializable/commit/aeca110db142699cae3b206640ba6dd6c6cbea74>>`\_`)

- chore(deps-dev): update flake8-bugbear requirement (#68)

Updates the requirements on `flake8-bugbear` to permit the latest version.

- [Release notes](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: flake8-bugbear dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot]
<49699333+dependabot[bot]@users.noreply.github.com> (`1727d78` <<https://github.com/madpah/serializable/commit/1727d78783a893526ce402963c9ca4dcb86496a3>>`\_`)

6.3.2 Fix

- fix: serialization of `datetime` without timezone with local time offset (#76)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``06776ba`` <<https://github.com/madpah/serializable/commit/06776baef2cc4b893550320c474128317f6276c1>>`\_`)

6.3.3 Refactor

- refactor: usage of `typing.Literal` as non-string (#73)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``32fbe2a`` <<https://github.com/madpah/serializable/commit/32fbe2a5b2cbfa06ca8899d6e319a120971ee8e1>>`\_`)

6.4 v1.0.0 (2024-01-22)

6.4.1 Breaking

- feat!: v1.0.0 (#55)

Release of first major version

BREAKING Changes

- Dropped support for python <3.8

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``2cee4d5`` <<https://github.com/madpah/serializable/commit/2cee4d5f48d59a737f4fc7b0e3d26fbce33c2392>>`\_`)

6.4.2 Chore

- chore: add flake8-logging (#61)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``cebb507`` <<https://github.com/madpah/serializable/commit/cebb507f67edde23da3586816819b144aa1051d1>>`\_`)

6.4.3 Documentation

- docs: fix conda link/url

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``5645ca6`` <<https://github.com/madpah/serializable/commit/5645ca65763198a166c348172cc29147881ad6f2>>`\_`)

6.5 v0.17.1 (2024-01-07)

6.5.1 Documentation

- docs: add "documentation" url to project meta

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> ([`bf864d7` <https://github.com/madpah/serializable/commit/bf864d7>](https://github.com/madpah/serializable/commit/bf864d7))

- docs: add "documentation" url to project meta

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> ([`d3bcc42` <https://github.com/madpah/serializable/commit/d3bcc42>](https://github.com/madpah/serializable/commit/d3bcc42))

6.5.2 Fix

- fix: log placeholder (#60) ([`3cc6cad` <https://github.com/madpah/serializable/commit/3cc6cad>](https://github.com/madpah/serializable/commit/3cc6cad))

6.5.3 Unknown

- 0.17.1

chore(release): 0.17.1

Automatically generated by python-semantic-release ([`3b50104` <https://github.com/madpah/serializable/commit/3b50104>](https://github.com/madpah/serializable/commit/3b50104))

- Create SECURITY.md ([`9cdc0b1` <https://github.com/madpah/serializable/commit/9cdc0b1>](https://github.com/madpah/serializable/commit/9cdc0b1))

6.6 v0.17.0 (2024-01-06)

6.6.1 Chore

- chore(deps-dev): update flake8 requirement from 6.1.0 to 7.0.0 (#52)

Updates the requirements on [flake8](#) to permit the latest version.

- [Commits](#)

updated-dependencies:

- dependency-name: flake8 dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> ([`14493ec` <https://github.com/madpah/serializable/commit/14493ec>](https://github.com/madpah/serializable/commit/14493ec))

- chore(deps): bump actions/checkout from 3 to 4 (#36)

Bumps [actions/checkout](#) from 3 to 4.

- [Release notes](#)

- [Changelog](#)
- [Commits](#)

updated-dependencies:

- dependency-name: actions/checkout dependency-type: direct:production update-type: version-update:semver-major ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (`54576ff` <<https://github.com/madpah/serializable/commit/54576ffe738892e525ee1ea8d84c53a6b518f6b1>>`_)

- chore: test with python 3.12 (#29)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> Signed-off-by: Paul Horton <paul.horton@owasp.org>; Co-authored-by: Paul Horton <paul.horton@owasp.org>; (`8051886` <<https://github.com/madpah/serializable/commit/8051886cdf249bb50e71e6ef5ea6602297ca045>>`_)

- chore: Update dev tools, style (#44)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com>; (`b05e50b` <<https://github.com/madpah/serializable/commit/b05e50b6ae503d047a33f62ccc865b9e810dba38>>`_)

- chore(deps-dev): update flake8-bugbear requirement (#43)

Updates the requirements on `flake8-bugbear` to permit the latest version.

- [Release notes](#)
- [Commits](#)

updated-dependencies:

- dependency-name: flake8-bugbear dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (`7e77788` <<https://github.com/madpah/serializable/commit/7e777885507b3cbba9d0dea86d841256bdd44db0>>`_)

- chore(deps-dev): update flake8-isort requirement from 4.2.0 to 6.0.0 (#40)

Updates the requirements on `flake8-isort` to permit the latest version.

- [Changelog](#)
- [Commits](#)

updated-dependencies:

- dependency-name: flake8-isort dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com>; (`8d3019e` <<https://github.com/madpah/serializable/commit/8d3019ebfe2962b0d019700d30e42aab8a919581>>`_)

- chore(deps-dev): update coverage requirement from 7.2.1 to 7.2.7 (#42)

Updates the requirements on [coverage](#) to permit the latest version.

- [Release notes](#)
 - [Changelog](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: coverage dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> (`f2bc2ad` <<https://github.com/madpah/serializable/commit/f2bc2ad66e05b62af1b05ccb1383e71b5ca4b752>>`_)

- chore(deps-dev): update typing-extensions requirement (#41)

Updates the requirements on [typing-extensions](#) to permit the latest version.

- [Release notes](#)
 - [Changelog](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: typing-extensions dependency-type: direct:development ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> (`0b36ea5` <<https://github.com/madpah/serializable/commit/0b36ea53999920462473c7a0c24f256820f9d678>>`_)

- chore: update maintainers

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`4bcad49` <<https://github.com/madpah/serializable/commit/4bcad49ef77a254db22930f0fbb24a55613437e3>>`_)

- chore(deps): bump actions/setup-python from 4 to 5 (#38)

Bumps [actions/setup-python](#) from 4 to 5.

- [Release notes](#)
 - [Commits](#)
-

updated-dependencies:

- dependency-name: actions/setup-python dependency-type: direct:production update-type: version-update:semver-major ...

Signed-off-by: dependabot[bot] <support@github.com> Co-authored-by: dependabot[bot] <49699333+dependabot[bot]@users.noreply.github.com> (`1578f13` <<https://github.com/madpah/serializable/commit/1578f138b04a28672aaec4206fa7b52095f0a792>>`_)

- chore: prep maintenance (#35)
-

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`a5db923` <<https://github.com/madpah/serializable/commit/a5db92349f09145db187b60010e0df3e600af43b>>`_)

6.6.2 Documentation

- docs: modernix read-the-docs

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`7ae6aad`` <<https://github.com/madpah/serializable/commit/7ae6aad3b5939508238d1502c116866ef79949cb>>`_)

- docs: homepage (#48)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`de206d6`` <<https://github.com/madpah/serializable/commit/de206d6083be643a58f08554b61518367f67cda1>>`_)

- docs: condaforge (#46)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`c0074ce`` <<https://github.com/madpah/serializable/commit/c0074ce911f66bc6de0a451b8922f80f1ffa6270>>`_)

6.6.3 Feature

- feat: logger (#47)

Reworked the way this library does logging/warning. It utilizes the logger named `serializable` for everything, now.

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> Co-authored-by: Kyle Roeschley <kyle.roeschley@ni.com> (`9269b0e`` <<https://github.com/madpah/serializable/commit/9269b0e681665abaef3f110925cd098b2438880f>>`_)

6.6.4 Unknown

- 0.17.0

chore(release): 0.17.0

Automatically generated by python-semantic-release (`a6fc788`` <<https://github.com/madpah/serializable/commit/a6fc78853e13a3c7e922c7e95ef7cbbaa4bf3b1d>>`_)

6.7 v0.16.0 (2023-11-29)

6.7.1 Feature

- feat: more controll over XML attribute serialization (#34)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`38f42d6`` <<https://github.com/madpah/serializable/commit/38f42d64e556a85206faa50459a9ce3e889bd3ae>>`_)

6.7.2 Unknown

- 0.16.0

chore(release): 0.16.0

Automatically generated by python-semantic-release (``b444fd7`` <<https://github.com/madpah/serializable/commit/b444fd721102caaa51d0854fc6f6408e919a77d5>>`_)

6.8 v0.15.0 (2023-10-10)

6.8.1 Feature

- feat: allow custom (de)normalization (#32)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``aeecd6b`` <<https://github.com/madpah/serializable/commit/aeecd6b2e8c4e8febc84ebfa24fe7ec96fd9cb10>>`_)

6.8.2 Unknown

- 0.15.0

chore(release): 0.15.0

Automatically generated by python-semantic-release (``e80c514`` <<https://github.com/madpah/serializable/commit/e80c5146621e9ed1bfbe2118e36c269aa4cacdb8>>`_)

6.9 v0.14.1 (2023-10-08)

6.9.1 Fix

- fix: JSON deserialize Decimal (#31)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``b6dc66a`` <<https://github.com/madpah/serializable/commit/b6dc66acfb7fdc82b3dd18caf4ad79ec0e87eef0>>`_)

6.9.2 Unknown

- 0.14.1

chore(release): 0.14.1

Automatically generated by python-semantic-release (``0183a17`` <<https://github.com/madpah/serializable/commit/0183a174b5b9e402f20e3e240e565b124f2b008b>>`_)

6.10 v0.14.0 (2023-10-06)

6.10.1 Feature

- feat: enhanced typehints and typing (#27)

Even though some structures are refactored, no public API is changed. No runtime is changed. TypeCheckers might behave differently, which is intentional due to bug fixes. This is considered a non-breaking change, as it does not affect runtime.

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`410372a` <https://github.com/madpah/serializable/commit/410372a0fa2713c5a36d790f08d2d4b52a6a187c>`_`)

6.10.2 Unknown

- 0.14.0

chore(release): 0.14.0

Automatically generated by python-semantic-release (`7bb0d1b` <https://github.com/madpah/serializable/commit/7bb0d1b0fcf5b63770c214ec6e784f1f6ba94f58>`_`)

6.11 v0.13.1 (2023-10-06)

6.11.1 Documentation

- docs: add examples to docs (#28)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`4eddb24` <https://github.com/madpah/serializable/commit/4eddb242e51194694474748acdec38b317b791e>`_`)

- docs: remove unnecessary type-ignores

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`26c561d` <https://github.com/madpah/serializable/commit/26c561dc0bf9f5755899a8fa0d0a37aba6275074>`_`)

- docs: remove unnecessary type-ignores

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`11b5896` <https://github.com/madpah/serializable/commit/11b5896057fd61838804ea5b52dc3bd0810f6c88>`_`)

6.11.2 Fix

- fix: protect default value for `serialization_types` from unintended downstream modifications (#30)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`0e814f5` <https://github.com/madpah/serializable/commit/0e814f5248176e02a7f96480e54320dde781f8b2>`_`)

6.11.3 Refactor

- refactor: `_as_xml()`'s `klass_qualified_name` module string from class, not `instalce`

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``0499b59`` <<https://github.com/madpah/serializable/commit/0499b59b7e30711fa330058a4a711368c2677135>>`_)

6.11.4 Unknown

- 0.13.1

chore(release): 0.13.1

Automatically generated by python-semantic-release (``bd604c8`` <<https://github.com/madpah/serializable/commit/bd604c800e1a9ab6101ee8b7b810e92e6288de8b>>`_)

- tests: align tests with latest features/merges

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``76c566c`` <<https://github.com/madpah/serializable/commit/76c566c81e4121374f3874056bdaee225adbd363>>`_)

6.12 v0.13.0 (2023-10-01)

6.12.1 Feature

- feat: format specific (de)serialize (#25)

Added functionality to implement custom (de)serialization specific for XML or JSON (#13).

6.13 Changed

- Class `BaseHelper` is no longer abstract. This class does not provide any functionality, it is more like a Protocol with some fallback implementations.
- Method `BaseHelper.serialize()` is no longer abstract. Will raise `NotImplementedError` per default.
- Method `BaseHelper.deserialize()` is no longer abstract. Will raise `NotImplementedError` per default.

6.14 Added

- New method `BaseHelper.json_serialize()` predefined. Will call `cls.serialize()` per default.
- New method `BaseHelper.json_deserialize()` predefined. Will call `cls.deserialize()` per default.

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (``dc998df`` <<https://github.com/madpah/serializable/commit/dc998df37a2ba37fa43d10c8a1ce044a5b9f5b1e>>`_)

6.14.1 Unknown

- 0.13.0

chore(release): 0.13.0

Automatically generated by python-semantic-release (``c1670d6`` <<https://github.com/madpah/serializable/commit/c1670d60e7f7adb0fd0f6be2f7cac89ff9315d9>>`_)

6.15 v0.12.1 (2023-10-01)

6.15.1 Build

- build: semantic-release sets library version everywhere (#16)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com>; (``296ef19`` <<https://github.com/madpah/serializable/commit/296ef196e8801b244843814d2d510f1e7d2044d4>>`_)

6.15.2 Chore

- chore: bump to python-semantic-release/python-semantic-release@v7.34.6

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com>; (``4a7f5a1`` <<https://github.com/madpah/serializable/commit/4a7f5a1dbaa9d86565fd1993d6ae1d9fd7bb7d8a>>`_)

- chore: remove poetry lockfile (#18)
- fixes #17
- poetry lockfile no longer in VCS
- pin dev-dependencies (to the version that was used in lockfile)
- gitignore more
- bump poetry version that is used in CI, to fix poetry issues ... (``4b20d44`` <<https://github.com/madpah/serializable/commit/4b20d4413297384ba57d4648d8c1cdd9f08dac07>>`_)

6.15.3 Ci

- ci: removed unused step

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``d63caa6`` <<https://github.com/madpah/serializable/commit/d63caa652c15137d2a8c65813b0e45005e5e52a9>>`_)

6.15.4 Documentation

- docs: render only public API (#19)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com>; (``fcc5d8e`` <<https://github.com/madpah/serializable/commit/fcc5d8e6c49e8b8c199cb55f855d09e4259a075a>>`_)

- docs: set codeblock language and caption (#15)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com>; (``5d5cf7b`` <<https://github.com/madpah/serializable/commit/5d5cf7bc29ed70f4024c714b2326012a9db54cea>>`_)

6.15.5 Fix

- fix: xml defaultNamespace serialization and detection (#20)
 - fixes: serialization with defaultNS fails #12
 - fixes: defaultNamespace detection fails on XML-attributes when deserializing #11
-

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`59eaa5f` <<https://github.com/madpah/serializable/commit/59eaa5f28eb2969e9d497669ef0436eb87b7525d>>`\_`)

6.15.6 Refactor

- refactor: simplify decorators (#26)

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`a2b5503` <<https://github.com/madpah/serializable/commit/a2b550349840f9f243df1bea77aff196f5e3e563>>`\_`)

6.15.7 Unknown

- 0.12.1

chore(release): 0.12.1

Automatically generated by python-semantic-release (`9a2798d` <<https://github.com/madpah/serializable/commit/9a2798d23de90ed36a4aecb4ec955cbe037a4089>>`\_`)

- bump to python-semantic-release/python-semantic-release@v7.34.6

Signed-off-by: Jan Kowalleck <jan.kowalleck@gmail.com> (`68d229e` <<https://github.com/madpah/serializable/commit/68d229e62d049713ade8e08487f491683b0bb0f9>>`\_`)

- Merge pull request #7 from clauif/fix-top-level-license

Keep LICENSE in .dist-info when building wheel (`9bc4abc` <<https://github.com/madpah/serializable/commit/9bc4abccc9cabed5f9808101a8d25717b86f01b4>>`\_`)

- Keep LICENSE in .dist-info when building wheel

Poetry automatically detects and includes LICENSE files in `...dist-info/` when it builds a wheel.

If LICENSE is also declared as a pattern in Poetry's include list in `pyproject.toml`, then the file will appear in the root directory of the wheel, too:

```
Path = /var/lib/aurbuild/x86_64/claudia/build/python-py-serializable/src/serializable-0.12.0/dist/py_serializable-0.12.0-py3-none-any.whl
Type = zip
Physical Size = 22557
```

Date	Time	Attr	Size	Compressed	Name
1980-01-01	00:00:00		11357	3948	LICENSE
1980-01-01	00:00:00		52795	9275	serializable/__init__.py
1980-01-01	00:00:00		3382	923	serializable/formatters.py
1980-01-01	00:00:00		3690	1180	serializable/helpers.py
1980-01-01	00:00:00		153	117	serializable/py.typed

(continues on next page)

(continued from previous page)

1980-01-01 00:00:00	11357	3948	py_serializable-0.12.0.dist-info/ ↳ LICENSE
1980-01-01 00:00:00	3845	1449	py_serializable-0.12.0.dist-info/ ↳ METADATA
1980-01-01 00:00:00	88	85	py_serializable-0.12.0.dist-info/ ↳ WHEEL
2016-01-01 00:00:00	718	408	py_serializable-0.12.0.dist-info/ ↳ RECORD

2016-01-01 00:00:00	87385	21333	9 files

Note how the wheel contains two identical copies of your LICENSE file: one copy in the `...dist-info/` directory, picked up automatically by Poetry, and a second copy in the root directory of the wheel.

Including a generically-named file directly in a wheel's root directory may cause problems:

1. The LICENSE file is going to turn up at the top level of `site-packages` directly. That's misleading, because anyone who'd browse `site-packages` might conclude that the license be valid for all packages, not just `serializable`, which is incorrect.
2. Having generic files at the top level of `site-packages` causes conflicts with other wheels that happen to include the same file. For example, I've had LICENSE files coming from two different wheels, excluding `serializable`, sitting at the top level of my `site-packages` directory so I could install only one of them.

The fix is to remove the LICENSE pattern from the `include` list. Poetry automatically picks up files named LICENSE, and drops them either into an sdist's root directory (when building an sdist) or into `py_serializable-[version].dist-info/` (when building a wheel).

Signed-off-by: Claudia <clau@users.noreply.github.com> (``31e4003`` <<https://github.com/madpah/serializable/commit/31e4003e949b73a4cd7c18aac458200888c1a0f2>>`\_`)

- Merge branch 'main' of github.com:madpah/serializable (``c1e8fd8`` <<https://github.com/madpah/serializable/commit/c1e8fd840b9e89c36f36304342cc6f9be8cc7d26>>`\_`)

6.16 v0.12.0 (2023-03-07)

6.16.1 Ci

- ci: workaround as per <https://github.com/python-semantic-release/python-semantic-release/issues/566>

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``bcd15e2`` <<https://github.com/madpah/serializable/commit/bcd15e23d7be136d61cc285d2217945991094f70>>`\_`)

- ci: fix to CI

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``6eb28a6`` <<https://github.com/madpah/serializable/commit/6eb28a6097a62e98929fb657f27b68b736d54982>>`\_`)

- ci: update to run on 3.11 by default ci: consolidate to use Gr1N/setup-poetry and update to v8

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``7d65f32`` <<https://github.com/madpah/serializable/commit/7d65f328219edef784668f36583ca986ee0956f2>>`\_`)

6.16.2 Feature

- feat: bump dev dependencies to latest (including mypy fixes)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``06dcaa2` <https://github.com/madpah/serializable/commit/06dcaa28bfabb4505ddc67b287dc6f416822ffb6>`_`)

- feat: bump dev dependencies to latest (including mypy fixes)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``6d70287` <https://github.com/madpah/serializable/commit/6d70287640c411d33823e9188b0baa81fba80c24>`_`)

6.16.3 Unknown

- 0.12.0

Automatically generated by python-semantic-release (``fa9f9b3` <https://github.com/madpah/serializable/commit/fa9f9b39a13120a0b8d47b4fdb9469c2aa642cb6>`_`)

- Merge pull request #6 from madpah/fix/dep-updates

feat: bump dev dependencies to latest (including mypy fixes) (``08b4825` <https://github.com/madpah/serializable/commit/08b48253bacc62f8a0db54510bf6fe49df68a19f>`_`)

6.17 v0.11.1 (2023-03-03)

6.17.1 Fix

- fix: use defusedxml whenever we load XML to prevent XEE attacks (``ae3d76c` <https://github.com/madpah/serializable/commit/ae3d76c31ab8af81d20acaaba45fd4bb9aad9305>`_`)
- fix: use defusedxml whenever we load XML to prevent XEE attacks

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``32fd5a6` <https://github.com/madpah/serializable/commit/32fd5a698b41b489b4643bcbe795e24a1e0db423>`_`)

- fix: use defusedxml whenever we load XML to prevent XEE attacks

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``72e0127` <https://github.com/madpah/serializable/commit/72e01279274246313170e5e7c9d32afec16edf7c>`_`)

- fix: use defusedxml whenever we load XML to prevent XEE attacks

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``de61deb` <https://github.com/madpah/serializable/commit/de61deb5c2447a656ca6a111194b2b0ceeab9278>`_`)

- fix: use defusedxml whenever we load XML to prevent XEE attacks

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``de26dc3` <https://github.com/madpah/serializable/commit/de26dc3d0eaab533dac9b1db40f0add56dd67754>`_`)

6.17.2 Unknown

- 0.11.1

Automatically generated by python-semantic-release (``0bdccc4`` <<https://github.com/madpah/serializable/commit/0bdccc4a1a4b7fb74f2ea54898e5c08d133f6490>>`_)

6.18 v0.11.0 (2023-03-03)

6.18.1 Ci

- ci: revert to plain semantic-release to workaround poetry not found error

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``d3f7847`` <<https://github.com/madpah/serializable/commit/d3f78474c6484d3e440e979603af89799bc27456>>`_)

6.18.2 Feature

- feat: disabled handling to avoid class attributes that clash with keywords and builtins

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``4439227`` <<https://github.com/madpah/serializable/commit/44392274628ddec4aaaeae89a8387d435e3cf002>>`_)

6.18.3 Unknown

- 0.11.0

Automatically generated by python-semantic-release (``90de3b8`` <<https://github.com/madpah/serializable/commit/90de3b89974aafd39b6b386e0647989c65845e67>>`_)

- define `commit_author`?

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``4fad001`` <<https://github.com/madpah/serializable/commit/4fad001f6c631e23af911bd78469ad1a1ed8d2f6>>`_)

- Merge branch 'main' of github.com:madpah/serializable (``fb46f04`` <<https://github.com/madpah/serializable/commit/fb46f0438ea81c62adc8bc360bee4b8a24816011>>`_)
- enable debug for release

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``2f4d626`` <<https://github.com/madpah/serializable/commit/2f4d6262a4038b7f3e4da3b0ffe10b6293bd2227>>`_)

- Merge pull request #4 from madpah/feat/allow-python-keywords

feat: disabled handling to avoid class attributes that clash with keywords and builtins (``2a33bc6`` <<https://github.com/madpah/serializable/commit/2a33bc606e95995ae812e62c9018481c3353962f>>`_)

- cleanup

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``0ff402e`` <<https://github.com/madpah/serializable/commit/0ff402eb99e0073fa03ae0e19b881e352fbca2c7>>`_)

6.19 v0.10.1 (2023-03-02)

6.19.1 Ci

- ci: use higher powered GH token for release

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``1ea12f8`` <<https://github.com/madpah/serializable/commit/1ea12f8da136e94c33136da7c3f4a8409abeb0ef>>`_)

- ci: attempt to resolve broken CI (<https://github.com/python-semantic-release/python-semantic-release/issues/560>)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``e6880ba`` <<https://github.com/madpah/serializable/commit/e6880ba4225fc85d48b61ee64f1adc1320cbc9ad>>`_)

6.19.2 Fix

- fix: handle empty XML elements during deserialization

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``f806f35`` <<https://github.com/madpah/serializable/commit/f806f3521f0afd8978f94f5ec355f47d9a538b91>>`_)

6.19.3 Unknown

- 0.10.1

Automatically generated by python-semantic-release (``69e5866`` <<https://github.com/madpah/serializable/commit/69e586630931c088381bfd687a00b83b55d360f8>>`_)

6.20 v0.10.0 (2023-02-21)

6.20.1 Chore

- chore: manual changelog

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``bc8300d`` <<https://github.com/madpah/serializable/commit/bc8300d323e6f7bfd7cc72a7b5ac89866f52cb38>>`_)

6.20.2 Feature

- feat: ability for custom `type_mapping` to take lower priority than `xml_array`

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``fc0bb22`` <<https://github.com/madpah/serializable/commit/fc0bb22f395498be42394af5f70addb9f63f0b3a>>`_)

6.20.3 Unknown

- 0.10.0

Automatically generated by python-semantic-release (``58d42ad`` <<https://github.com/madpah/serializable/commit/58d42ad0455495ad5998694cbd487866d682fed3>>`_)

- Merge pull request #3 from madpah/feat/recursive-parsing-differing-schemas

feat: `xml_array` has higher priority than `type_mapping`

feat: `handle ForwardRef types` (``664f947`` <<https://github.com/madpah/serializable/commit/664f947add279dad90ac9cf447a59059ab10d2cc>>`_)

- work to handle `ForwardRef` when we have cyclic references in models

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``a66e700`` <<https://github.com/madpah/serializable/commit/a66e700eeb5a80447522b8112ecdeff0345f0608>>`_)

- remove comment

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``6898b40`` <<https://github.com/madpah/serializable/commit/6898b40b6d55c70ade6e87de4a3cd4b8ce10a028>>`_)

- added test to prove <https://github.com/CycloneDX/specification/issues/146> for <https://github.com/CycloneDX/cyclonedx-python-lib/pull/290>

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``2cfc44d`` <<https://github.com/madpah/serializable/commit/2cfc44ddc22d3ec5dc860d21297ab76b50102a74>>`_)

6.21 v0.9.3 (2023-01-27)

6.21.1 Fix

- fix: deserializing JSON with custom JSON name was incorrect

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``7d4aefc`` <<https://github.com/madpah/serializable/commit/7d4aefc98dfe39ae614227601369e9fd25c12faa>>`_)

6.21.2 Unknown

- 0.9.3

Automatically generated by python-semantic-release (``ccd610f`` <<https://github.com/madpah/serializable/commit/ccd610f7897e78478da7855095cf02580617340e>>`_)

- better logging for deserialization errors

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``a77452d`` <<https://github.com/madpah/serializable/commit/a77452d38e416aca59ef212379710c044885c383>>`_)

- added more logging

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``1f80c4b`` <<https://github.com/madpah/serializable/commit/1f80c4bb2390cbc5ebef87a8f32cc925f28bbde8>>`_)

- code style

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``8ca9e44`` <<https://github.com/madpah/serializable/commit/8ca9e44c479b35f0e599296b5e462dc87d9bf366>>`_)

6.22 v0.9.2 (2023-01-27)

6.22.1 Fix

- fix: nested array of Enum values in `from_json()` failed

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``ea4d76a` <https://github.com/madpah/serializable/commit/ea4d76a64c8c97f7cb0b16687f300c362dfe7623>`_`)

- fix: output better errors when deserializing JSON and we hit errors

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``1699c5b` <https://github.com/madpah/serializable/commit/1699c5b96bb6a8d4f034b29a6fe0521e3d650d53>`_`)

6.22.2 Unknown

- 0.9.2

Automatically generated by python-semantic-release (``435126c` <https://github.com/madpah/serializable/commit/435126c92032548944fe59243aa5935312ca7bfa>`_`)

6.23 v0.9.1 (2023-01-26)

6.23.1 Fix

- fix: nested array of Enum values in `from_xml()` failed

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``393a425` <https://github.com/madpah/serializable/commit/393a4256abb69228a9e6c2fc76b508e370a39d93>`_`)

6.23.2 Unknown

- 0.9.1

Automatically generated by python-semantic-release (``f4e018b` <https://github.com/madpah/serializable/commit/f4e018bf109c597ea70ce3a53a9d139aad926d2c>`_`)

- doc: added to docs to cover latest features and Views

fix: aligned View definition in unit tests with proper practice Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c7c66f7` <https://github.com/madpah/serializable/commit/c7c66f719b93a9fc2c3929db67d0f7ae0665be7a>`_`)

6.24 v0.9.0 (2023-01-24)

6.24.1 Chore

- chore: silence mypy B027 forever

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``4112b7e` <https://github.com/madpah/serializable/commit/4112b7e604375130b3e43e65fc203264eead050c>`_`)

- chore: typing

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``ac67f09` <https://github.com/madpah/serializable/commit/ac67f090b16ec8fac5adb6d429c069751ff3bd69>`_`)

- chore: updated CI to test on Py 3.11

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``daa6c07` <https://github.com/madpah/serializable/commit/daa6c0797ef9c564509f0adbc57857c59ff93539>`_`)

- chore: updated CI to test on Py 3.11

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c73dcde` <https://github.com/madpah/serializable/commit/c73dcdef9ca9b6d8ef3e1bff63cb751c1513143e>`_`)

- chore: fixed GitHub badge in README

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``e7895b7` <https://github.com/madpah/serializable/commit/e7895b7d637534f5792247916f9ef34c335721c4>`_`)

6.24.2 Ci

- ci: bump setup-poetry to v8 to gain support for Python 3.11

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``a5c4e25` <https://github.com/madpah/serializable/commit/a5c4e25afdfae8997f288023e7e2b9968cc161d1>`_`)

6.24.3 Feature

- feat: bring library to BETA state

feat: add support for Python 3.11 Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c6c36d9` <https://github.com/madpah/serializable/commit/c6c36d911ae401af477bcc98633f10a87140d0a4>`_`)

6.24.4 Unknown

- 0.9.0

Automatically generated by python-semantic-release (``f5cb856` <https://github.com/madpah/serializable/commit/f5cb85629d6398956a4a1379e44bbd9a1f67d079>`_`)

- Merge pull request #2 from madpah/feat/support-py311

feat: bring library to BETA state & add support Python 3.11 (``33c6756` <https://github.com/madpah/serializable/commit/33c6756d145a15c9d62216acc11568838bf0d1a0>`_`)

6.25 v0.8.2 (2023-01-23)

6.25.1 Fix

- fix: typing for `@serializable.view` was incorrect

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``756032b` <https://github.com/madpah/serializable/commit/756032b543a2fedac1bb61f57796eea438c0f9a7>`_`)

- fix: typing for `@serializable.serializable_enum` decorator was incorrect

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``84e7826` <https://github.com/madpah/serializable/commit/84e78262276833f507d4e8a1ce11d4a82733f395>`_`)

6.25.2 Unknown

- 0.8.2

Automatically generated by python-semantic-release (``3332ed9` <https://github.com/madpah/serializable/commit/3332ed98ae9c9bfae40df743ad4c0ea83eac038b>`_`)

- Merge pull request #1 from madpah/fix/typing

fix: typing only (``1860d4d` <https://github.com/madpah/serializable/commit/1860d4df369c8cf9cea917c025bb191fcd242f29>`_`)

- spacing

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``fdd5c8a` <https://github.com/madpah/serializable/commit/fdd5c8a344c3ace70170c91272074cbf6d0ebd01>`_`)

6.26 v0.8.1 (2023-01-23)

6.26.1 Chore

- chore: typing and import ordering

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``dd815c3` <https://github.com/madpah/serializable/commit/dd815c38b8e613abc0bdd65036782142c450198c>`_`)

6.26.2 Fix

- fix: Specific None value per View - support for XML was missing

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``5742861` <https://github.com/madpah/serializable/commit/5742861728d1b371bc0a819fed0b12e9da5829e1>`_`)

6.26.3 Unknown

- 0.8.1

Automatically generated by python-semantic-release (``c6d9db8` <https://github.com/madpah/serializable/commit/c6d9db8665e8d2c368004d3167d450c5f2f93c28>`_`)

6.27 v0.8.0 (2023-01-20)

6.27.1 Chore

- chore: remove poetry install from build command

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``b90da79` <https://github.com/madpah/serializable/commit/b90da79a5d90515cf7debf31da2bfd7482b81d04>`_`)

6.27.2 Feature

- feat: support for specific None values for Properties by View

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``a80ee35` <https://github.com/madpah/serializable/commit/a80ee3551c5e23f9c0491f48c3f98022317ddd99>`_`)

6.27.3 Fix

- fix: minor typing and styling

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``b728c4c` <https://github.com/madpah/serializable/commit/b728c4c995076cd18317c878c6f5900c6b266425>`_`)

- fix: minor typing and styling

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``b2ebcfb` <https://github.com/madpah/serializable/commit/b2ebcfb53cd640eb70a51a9f637db24e0d7b367e>`_`)

6.27.4 Unknown

- 0.8.0

Automatically generated by python-semantic-release (``4ccdfc9` <https://github.com/madpah/serializable/commit/4ccdfc98b2275efc744de0188152fcdcc560e00f>`_`)

6.28 v0.7.3 (2022-09-22)

6.28.1 Fix

- fix: None value for JSON is now None (null) fix: typing and coding standards

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``8b7f973` <https://github.com/madpah/serializable/commit/8b7f973cd96c861c4490c50553c880e88ebf33dc>`_`)

6.28.2 Unknown

- 0.7.3

Automatically generated by python-semantic-release (``8060db3` <https://github.com/madpah/serializable/commit/8060db392f47868bd61bcc333fad51cefd9d2e9f>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``84f957b` <https://github.com/madpah/serializable/commit/84f957b815b2c641218bf7a5d422fa66e787b343>`_`)

6.29 v0.7.2 (2022-09-22)

6.29.1 Fix

- fix: missing namespace for empty XML elements

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``f3659ab` <https://github.com/madpah/serializable/commit/f3659ab9ea651dcd65168aa22fa838d35ee189d5>`_`)

6.29.2 Unknown

- 0.7.2

Automatically generated by python-semantic-release (``08698d1` <https://github.com/madpah/serializable/commit/08698d10b9b0350458fb079b1ee38e5c118588d7>`_`)

6.30 v0.7.1 (2022-09-15)

6.30.1 Fix

- fix: support forced inclusion of array properties by using `@serializable.include_none`

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``7ad0ecf` <https://github.com/madpah/serializable/commit/7ad0ecf08c5f56de4584f4f081bfc0f667d2f477>`_`)

- fix: support for deserializing to objects from a primitive value

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``12f9f97` <https://github.com/madpah/serializable/commit/12f9f9711a5fd924898a0afb50a24c8d360ab3ff>`_`)

6.30.2 Unknown

- 0.7.1

Automatically generated by python-semantic-release (``01743f2` <https://github.com/madpah/serializable/commit/01743f27db48bb6e896531f1708d11a53571284a>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``eb82dbc` <https://github.com/madpah/serializable/commit/eb82dbc20d558a242620649a6ea8ea8df912283a>`_`)

6.31 v0.7.0 (2022-09-14)

6.31.1 Feature

- feat: support for including None values, restricted to certain Views as required

fix: tests, imports and formatting Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'614068a' <https://github.com/madpah/serializable/commit/614068a4955f99d8fce5da341a1fd74a6772b775>`_)`)

6.31.2 Unknown

- 0.7.0

Automatically generated by python-semantic-release (`'4a007c0' <https://github.com/madpah/serializable/commit/4a007c0b3b2f22c4d26851267390909a01e8adf5>`_)`)

6.32 v0.6.0 (2022-09-14)

6.32.1 Feature

- feat: implement views for serialization to JSON and XML

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'db57ef1' <https://github.com/madpah/serializable/commit/db57ef13fa89cc47db074bd9be4b48232842df07>`_)`)

6.32.2 Fix

- fix: support for Decimal in JSON serialization

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'cc2c20f' <https://github.com/madpah/serializable/commit/cc2c20fe8bce46e4854cb0eccc6702459cd2f99a>`_)`)

- fix: better serialization to JSON

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'e8b37f2' <https://github.com/madpah/serializable/commit/e8b37f2ee4246794c6c0e295bcd532cd58d5e52d>`_)`)

6.32.3 Unknown

- 0.6.0

Automatically generated by python-semantic-release (`'da20686' <https://github.com/madpah/serializable/commit/da20686207f0ca95f7da29cb07f27ecc018b5134>`_)`)

- Merge branch 'main' of github.com:madpah/serializable (`'86492e1' <https://github.com/madpah/serializable/commit/86492e1ff51f6ecd5dde28faf054777db13fe5b1>`_)`)

6.33 v0.5.0 (2022-09-12)

6.33.1 Feature

- feat: support for string formatting of values

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``99b8f3e` <https://github.com/madpah/serializable/commit/99b8f3e7ab84f087a87b330928fc598c96a0e682>`_`)

- feat: support string formatting for values

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``3fefe22` <https://github.com/madpah/serializable/commit/3fefe2294130b80f05e219bd655514a0956f7f93>`_`)

- feat: support for custom Enum implementations

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c3622fc` <https://github.com/madpah/serializable/commit/c3622fcb0019de794b1cbd3ad6333b6044d8392a>`_`)

6.33.2 Unknown

- 0.5.0

Automatically generated by python-semantic-release (``0ede79d` <https://github.com/madpah/serializable/commit/0ede79daabcf3ce3c6364e8abc27f321db654a90>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``5a896c4` <https://github.com/madpah/serializable/commit/5a896c4f3162569e4e938cb4dd1e69275078f8ee>`_`)

- import order

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``a2a2ef8` <https://github.com/madpah/serializable/commit/a2a2ef86e2c9fe860453f755201507266c36daed>`_`)

6.34 v0.4.0 (2022-09-06)

6.34.1 Chore

- chore: increase logging to debug GH Actions

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``6111fbe` <https://github.com/madpah/serializable/commit/6111fbe5730e5923ca74732c8fda85f5e0fbd712>`_`)

6.34.2 Feature

- feat: add support for defining XML element ordering with `@serializable.xml_sequence()` decorator

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c1442ae` <https://github.com/madpah/serializable/commit/c1442aeb1776243922fbba6b5174db5a54f71920>`_`)

6.34.3 Fix

- fix: removed unused dependencies

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``448a3c9`` <<https://github.com/madpah/serializable/commit/448a3c9f0de897cf1ee6d7c46af377c2f389730d>>`_)

- fix: handle python builtins and keywords during `as_xml()` for element names

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``3bbfb1b`` <<https://github.com/madpah/serializable/commit/3bbfb1b4a7808f4cedd3b2b15f31aaaf8e35d60a>>`_)

- fix: handle python builtins and keywords during `as_xml()` for attributes

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``8d6a96b`` <<https://github.com/madpah/serializable/commit/8d6a96b0850d4993c96cbc7d532d848ba9c5e8b3>>`_)

6.34.4 Unknown

- 0.4.0

Automatically generated by python-semantic-release (``3034bd1`` <<https://github.com/madpah/serializable/commit/3034bd1f817e2cc24c10da4c7d0a1d68120f1fee>>`_)

- python < 3.8 typing

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``339e53c`` <<https://github.com/madpah/serializable/commit/339e53cbec9a441ef9ef6ecea9f037c9085b6855>>`_)

- removed unused import

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``8462634`` <<https://github.com/madpah/serializable/commit/84626342df1dd5d9aea8d4c469431a0b19cf0bb3>>`_)

- updated release CI

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``f4cf0fa`` <<https://github.com/madpah/serializable/commit/f4cf0fa4d6a9f3349647caeb94d18b97bc836606>>`_)

- typing

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``0f9cf68`` <<https://github.com/madpah/serializable/commit/0f9cf68db3e676a9e16124c371359ec60e2fc304>>`_)

- cleanup

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``95a864a`` <<https://github.com/madpah/serializable/commit/95a864a1f9c67ec073308fdc3e97b82ce81b5392>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``8eb8704`` <<https://github.com/madpah/serializable/commit/8eb8704f7b14767897093183020b71f6672f86c4>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``8705180`` <<https://github.com/madpah/serializable/commit/87051801d6718c2eb4dd380e91bc30b9684a6386>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``fe3f56a`` <<https://github.com/madpah/serializable/commit/fe3f56a26a20be4f6ccd3ae100300c947bdecf70>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'4e7a19f'` <<https://github.com/madpah/serializable/commit/4e7a19fc54c2e51f6b963a4e9d758d0d8824413c>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'7d268db'` <<https://github.com/madpah/serializable/commit/7d268dbad701604946877ef8e3947f8b14210f7e>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'02caa9e'` <<https://github.com/madpah/serializable/commit/02caa9e35d3ac3a3b961b09cb9665e9f27ab1371>>`_)

- test alternative poetry installation in CI

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'210d41d'` <<https://github.com/madpah/serializable/commit/210d41d39418cd58af62b2672233e743dbd4372f>>`_)

- force poetry cache clear

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'731d7ae'` <<https://github.com/madpah/serializable/commit/731d7ae51ac7bd1225af7d3c757042cac9f3ac9c>>`_)

- bump poetry to 1.1.12

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'90b8a92'` <<https://github.com/madpah/serializable/commit/90b8a92327741c5b8b91a7fb1ef1356febe53944>>`_)

- typing

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'3427f4b'` <<https://github.com/madpah/serializable/commit/3427f4b5b136183b524cda871fb49f9ab78a20a7>>`_)

- doc: added docs for `xml_sequence()` decorator

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'d2211c9'` <<https://github.com/madpah/serializable/commit/d2211c90b65e27510711d90daf1b001f3e7c81e2>>`_)

- Merge branch 'main' of github.com:madpah/serializable (`'6520862'` <<https://github.com/madpah/serializable/commit/652086249f399f8592fc89ee6fcb33ebdbe6973d>>`_)

- namespacing for XML output

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'2e32f08'` <<https://github.com/madpah/serializable/commit/2e32f084552bee69ad815466741d66fee96ff2e1>>`_)

6.35 v0.3.9 (2022-08-24)

6.35.1 Fix

- fix: support declaration of XML NS in `as_xml()` call

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'19b2b70'` <<https://github.com/madpah/serializable/commit/19b2b7048fdd7048d62f618987c13f2d3a457726>>`_)

6.35.2 Unknown

- 0.3.9

Automatically generated by python-semantic-release (``3269921` <https://github.com/madpah/serializable/commit/32699214554b0ec5d4b592f2ab70d6ae923c9e9c>`_`)

6.36 v0.3.8 (2022-08-24)

6.36.1 Fix

- fix: deserialization of XML boolean values

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``799d477` <https://github.com/madpah/serializable/commit/799d4773d858fdf8597bef905302a373ca150db8>`_`)

6.36.2 Unknown

- 0.3.8

Automatically generated by python-semantic-release (``dbf545c` <https://github.com/madpah/serializable/commit/dbf545cb4a51a10125a4104771ecca11e484ac53>`_`)

6.37 v0.3.7 (2022-08-23)

6.37.1 Fix

- fix: fixed deferred parsing for Properties

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``833e29b` <https://github.com/madpah/serializable/commit/833e29b8391c85931b12c98f87a2faf3a68d388e>`_`)

6.37.2 Unknown

- 0.3.7

Automatically generated by python-semantic-release (``1628f28` <https://github.com/madpah/serializable/commit/1628f2870c8de2643c74550cbe34c09d84b419d7>`_`)

6.38 v0.3.6 (2022-08-23)

6.38.1 Fix

- fix: support for cyclic dependencies

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``911626c` <https://github.com/madpah/serializable/commit/911626c88fb260049fdf2931f6ea1b0b05d7166a>`_`)

6.38.2 Unknown

- 0.3.6

Automatically generated by python-semantic-release (``54607f1` <https://github.com/madpah/serializable/commit/54607f1ac9e64e7cd8762699fd7f1567ac9c8d83>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``a54d5cf` <https://github.com/madpah/serializable/commit/a54d5cf3a68959f006340e88fc2f095558a70b1a>`_`)

6.39 v0.3.5 (2022-08-22)

6.39.1 Fix

- fix: support for non-primitive types when XmlSerializationType == FLAT

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``7eff15b` <https://github.com/madpah/serializable/commit/7eff15bbb8d20760418071c005d65d2623b44eab>`_`)

6.39.2 Unknown

- 0.3.5

Automatically generated by python-semantic-release (``d7e03d1` <https://github.com/madpah/serializable/commit/d7e03d13522d983ab79e4fa114f5deb4d43a7db9>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``6ec8c38` <https://github.com/madpah/serializable/commit/6ec8c38219e392ecab25d9eee7b67b05cc3b85f2>`_`)

6.40 v0.3.4 (2022-08-22)

6.40.1 Fix

- fix: support ENUM in XML Attributes

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``f2f0922` <https://github.com/madpah/serializable/commit/f2f0922f2d0280185f6fc7f96408d6647588c8d2>`_`)

6.40.2 Unknown

- 0.3.4

Automatically generated by python-semantic-release (``adae34c` <https://github.com/madpah/serializable/commit/adae34c2c7be2ab920335d038cc4f9a80dbb128f>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``8995505` <https://github.com/madpah/serializable/commit/899550591954f4236bbeb53191d6ad47cdf8779d>`_`)
- code styling

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``7ec0197` <https://github.com/madpah/serializable/commit/7ec01978b2b581b0fbeb610b0707d4d6aa42ec1a>`_`)

6.41 v0.3.3 (2022-08-19)

6.41.1 Fix

- fix: handle Array types where the concrete type is quoted in its definition

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'b6db879'` <<https://github.com/madpah/serializable/commit/b6db879d72822ada74a41362594b009f09349da9>>`_)

6.41.2 Unknown

- 0.3.3

Automatically generated by python-semantic-release (`'f0c463b'` <<https://github.com/madpah/serializable/commit/f0c463b45061b05e060df526185c3b374f49fda2>>`_)

- Merge branch 'main' of github.com:madpah/serializable (`'ea0aa86'` <<https://github.com/madpah/serializable/commit/ea0aa86cbb7b8504e52dcabc8f781af81326d82>>`_)

6.42 v0.3.2 (2022-08-19)

6.42.1 Fix

- fix: work to support `sortedcontainers` as a return type for Properties

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'805a3f7'` <<https://github.com/madpah/serializable/commit/805a3f7a10e41f63b132ac0bb234497d5d39fe2b>>`_)

6.42.2 Unknown

- 0.3.2

Automatically generated by python-semantic-release (`'f86da94'` <<https://github.com/madpah/serializable/commit/f86da944467b0d8ff571f3ca2e924b50e388bb4c>>`_)

- Merge branch 'main' of github.com:madpah/serializable (`'cf9234e'` <<https://github.com/madpah/serializable/commit/cf9234e65c55b3d1814c36c7b3c2dcfb9b4ae1d5>>`_)

6.43 v0.3.1 (2022-08-19)

6.43.1 Fix

- fix: better support for Properties that have a Class type that is not a Serializable Class (e.g. UUID)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (`'95d407b'` <<https://github.com/madpah/serializable/commit/95d407b4456d8f106cf54ceb650cbde1aab69457>>`_)

6.43.2 Unknown

- 0.3.1

Automatically generated by python-semantic-release (``53d96bd`` <<https://github.com/madpah/serializable/commit/53d96bd515bf4bafa1216bc6041e25b8f7ddec7>>`\_`)

6.44 v0.3.0 (2022-08-19)

6.44.1 Feature

- feat: support ignoring elements/properties during deserialization

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``6319d1f`` <<https://github.com/madpah/serializable/commit/6319d1f9e632a941b1d79a63083c1ecb194105be>>`\_`)

6.44.2 Unknown

- 0.3.0

Automatically generated by python-semantic-release (``a286b88`` <<https://github.com/madpah/serializable/commit/a286b88a5a9cb17eaa4f04c94f9c0c148e9e7052>>`\_`)

6.45 v0.2.3 (2022-08-19)

6.45.1 Chore

- chore: address isort and flake8 errors

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``0ceb5a2`` <<https://github.com/madpah/serializable/commit/0ceb5a2291a17580296f1bbab133ef22a22bd103>>`\_`)

6.45.2 Fix

- fix: update helpers to be properly typed

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``d924dc2`` <<https://github.com/madpah/serializable/commit/d924dc2d3b5f02c61ff6ac36fa10fa6adaac7022>>`\_`)

6.45.3 Unknown

- 0.2.3

Automatically generated by python-semantic-release (``f632d2f`` <<https://github.com/madpah/serializable/commit/f632d2f10b7b5fb6cbdad038eaacaf73c2c9bbb7>>`\_`)

- Merge branch 'main' of github.com:madpah/serializable (``5d6564d`` <<https://github.com/madpah/serializable/commit/5d6564d787f8b269b86f3a5c4f055c62c38fd676>>`\_`)

6.46 v0.2.2 (2022-08-19)

6.46.1 Fix

- fix: change to helpers to address typing issues

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``1c32ba1` <https://github.com/madpah/serializable/commit/1c32ba143504a605a77df4908422a95d0bd07edf>`_`)

- fix: remove / from method signature so we work on Python < 3.8

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c45864c` <https://github.com/madpah/serializable/commit/c45864cd6c90ed38d8cedd944adcfe43b32326b2>`_`)

6.46.2 Unknown

- 0.2.2

Automatically generated by python-semantic-release (``60045d8` <https://github.com/madpah/serializable/commit/60045d8342357b0a3ffe6b2a22abc9068f0d140c>`_`)

6.47 v0.2.1 (2022-08-18)

6.47.1 Fix

- fix: update to work on python < 3.10

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``91df8cb` <https://github.com/madpah/serializable/commit/91df8cbb718db15ea182888aa796db32b8015004>`_`)

6.47.2 Unknown

- 0.2.1

Automatically generated by python-semantic-release (``4afc403` <https://github.com/madpah/serializable/commit/4afc4035f5dda5e6387963abb8d1332aa90dbd2c>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``dbc5039` <https://github.com/madpah/serializable/commit/dbc50397638e4a738443c6a3b5b809d64d962ddf>`_`)

6.48 v0.2.0 (2022-08-18)

6.48.1 Feature

- feat: library re-write to utilise decorators

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``957fca7` <https://github.com/madpah/serializable/commit/957fca757d89dc1b8ef9b13357a5a9380dbe94ff>`_`)

6.48.2 Unknown

- 0.2.0

Automatically generated by python-semantic-release (``5bff0a8` <https://github.com/madpah/serializable/commit/5bff0a88ecc4c135ec60eafcc592f55157e1b103>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``b14e2c9` <https://github.com/madpah/serializable/commit/b14e2c9f8da270318fe1fddf242c82570027729d>`_`)
- doc changes to reflect move to use of decorators

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``9f1b4ca` <https://github.com/madpah/serializable/commit/9f1b4ca17ee57f8a55ae211d78daed29c0068584>`_`)

- typing

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``d3633ed` <https://github.com/madpah/serializable/commit/d3633ed1fc09b72ea222a51b4a852dd7db52a0bf>`_`)

- typing

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``3480d71` <https://github.com/madpah/serializable/commit/3480d7126e063cef5746522479b381eba8cca818>`_`)

- removed `print()` calls - added logger

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``1deee5e` <https://github.com/madpah/serializable/commit/1deee5ec611a3c31f63a66be762caac70625472f>`_`)

- removed dead code

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``375b367` <https://github.com/madpah/serializable/commit/375b367e8705b5b6d0b5e4ac0c506776eb9da001>`_`)

- wip: all unit tests passing for JSON and XML after migrating to use of decorators

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``d4ab8f4` <https://github.com/madpah/serializable/commit/d4ab8f413b1f2bbf79e5a66ea353407f9dc15944>`_`)

- wip - JSON serialization and deserialization unit tests passing using decorators

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``291b37d` <https://github.com/madpah/serializable/commit/291b37da7d3f414750d555797f24378158eae4c4>`_`)

- wip - move to using Decorators to annotate classes to affect serialization/deserialization

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``05d6e5a` <https://github.com/madpah/serializable/commit/05d6e5a68630e4af09e81a02d5aca4a55391871a>`_`)

6.49 v0.1.7 (2022-08-15)

6.49.1 Fix

- fix: support for Objects that when represented in XML may just be simple elements with attributes

Signed-off-by: Paul Horton <paul.horton@owasp.org>; (``1369d7d` <https://github.com/madpah/serializable/commit/1369d7d755d9e50273b72e2fdd7d2967442e5bde>`_`)

6.49.2 Unknown

- 0.1.7

Automatically generated by python-semantic-release (``291a2b3` <https://github.com/madpah/serializable/commit/291a2b3822e2f5c0e4b1ed7c90b3205147f74704>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``9c34c2f` <https://github.com/madpah/serializable/commit/9c34c2fe5d4dd96e04b54949b2b3bbd088ac9ca1>`_`)

6.50 v0.1.6 (2022-08-15)

6.50.1 Fix

- fix: temporarily add Any as part of AnySerializable type

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``d3e9beb` <https://github.com/madpah/serializable/commit/d3e9bebd7b8dc78d4eb36447ad0b1ee46e2745e0>`_`)

6.50.2 Unknown

- 0.1.6

Automatically generated by python-semantic-release (``77cc49b` <https://github.com/madpah/serializable/commit/77cc49bd1ad9fae4bed17eaf47659d584a3cec3f>`_`)

6.51 v0.1.5 (2022-08-13)

6.51.1 Fix

- fix: direct support for Python Enum

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``50148cc` <https://github.com/madpah/serializable/commit/50148cc98a26e4e51479b491acb58451ea5b42b6>`_`)

6.51.2 Unknown

- 0.1.5

Automatically generated by python-semantic-release (``532d0d1` <https://github.com/madpah/serializable/commit/532d0d1eb613d0c62e881cd898e5f5195a506b17>`_`)

6.52 v0.1.4 (2022-08-13)

6.52.1 Fix

- fix: added missing `py.typed` marker

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``ee3169f` <https://github.com/madpah/serializable/commit/ee3169f466353a88922174b40f5b29cb98998be9>`_`)

6.52.2 Unknown

- 0.1.4

Automatically generated by python-semantic-release (``02c2c30` <https://github.com/madpah/serializable/commit/02c2c3019de4939138c92d070ffdadb86d9dc7f4>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``5219023` <https://github.com/madpah/serializable/commit/5219023246373e5e98663d46736c2299fc77b548>`_`)

6.53 v0.1.3 (2022-08-12)

6.53.1 Fix

- fix: added helpers for serializing XML dates and times (`xsd.date`, `xsd.datetime`)

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c309834` <https://github.com/madpah/serializable/commit/c3098346abf445876d99ecb768d7a4a08b12a291>`_`)

6.53.2 Unknown

- 0.1.3

Automatically generated by python-semantic-release (``9c6de39` <https://github.com/madpah/serializable/commit/9c6de399dd9ea70b2136a8aa0797a3bd3ffbc881>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``986286f` <https://github.com/madpah/serializable/commit/986286f9723b9a2154b0e3d9d5d7d14f64f65c8a>`_`)

6.54 v0.1.2 (2022-08-12)

6.54.1 Fix

- fix: support for properties whose value is an `Type[SerializableObject]` but are not `List` or `Set`

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``bf6773c` <https://github.com/madpah/serializable/commit/bf6773c40f3f45dbe2821fdbe785b369f0b3b71c>`_`)

6.54.2 Unknown

- 0.1.2

Automatically generated by python-semantic-release (``7ca1b6f` <https://github.com/madpah/serializable/commit/7ca1b6f92061c8cd73d8554c764dc4b39c2b6364>`_`)

- Merge branch 'main' of github.com:madpah/serializable (``bdb75e0` <https://github.com/madpah/serializable/commit/bdb75e0961cc17b11abb37dd984af16c0623d18f>`_`)

6.55 v0.1.1 (2022-08-11)

6.55.1 Fix

- fix: handle nested objects that are not list or set

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``4bc5252` <https://github.com/madpah/serializable/commit/4bc525258d0ee655beabace18e41323b4b67ae1b>`_`)

6.55.2 Unknown

- 0.1.1

Automatically generated by python-semantic-release (``fc77999` <https://github.com/madpah/serializable/commit/fc77999d8ab8c8ac2f6273f64387f95104551e56>`_`)

6.56 v0.1.0 (2022-08-10)

6.56.1 Chore

- chore: corrected GitHub repo name

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``3dd770c` <https://github.com/madpah/serializable/commit/3dd770c3be7c1316fc292942f74e58e4df04158c>`_`)

- chore: corrected GitHub repo name

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``4d009b7` <https://github.com/madpah/serializable/commit/4d009b71b48badac55ac37994e3d4521d320270a>`_`)

6.56.2 Feature

- feat: first alpha release

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``c95a772` <https://github.com/madpah/serializable/commit/c95a7724186b6e45554624b5238c719d172ffc9f>`_`)

- feat: first working draft of library for (de-)serialization to/from JSON and XML

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``7af4f9c` <https://github.com/madpah/serializable/commit/7af4f9c4a100f1ce10502ecef228f42ea61e9c22>`_`)

6.56.3 Unknown

- 0.1.0

Automatically generated by python-semantic-release (``701a522` <https://github.com/madpah/serializable/commit/701a522410783677087a0da682f899f4fbd4368d>`_`)

- doc: fixed doc config and added first pass documentation

Signed-off-by: Paul Horton <paul.horton@owasp.org> (``38705a1` <https://github.com/madpah/serializable/commit/38705a1156d04a5ae5fc96c6cd691e1d1a0e2ead>`_`)

- Initial commit (``70ca2a5` <https://github.com/madpah/serializable/commit/70ca2a5d8d4042c969e1120e5604ea37878ac5c3>`_`)

API REFERENCE

This page contains auto-generated API reference documentation¹.

7.1 serializable

7.1.1 Submodules

`serializable.formatters`

Module Contents

Classes

<i>BaseNameFormatter</i>	Helper class that provides a standard way to create an ABC using
<i>CamelCasePropertyNameFormatter</i>	Helper class that provides a standard way to create an ABC using
<i>KebabCasePropertyNameFormatter</i>	Helper class that provides a standard way to create an ABC using
<i>SnakeCasePropertyNameFormatter</i>	Helper class that provides a standard way to create an ABC using
<i>CurrentFormatter</i>	

class `serializable.formatters.BaseNameFormatter`

Bases: `abc.ABC`

Helper class that provides a standard way to create an ABC using inheritance.

abstract classmethod `encode(property_name: str) → str`

abstract classmethod `decode(property_name: str) → str`

classmethod `decode_as_class_name(name: str) → str`

classmethod `decode_handle_python_builtins_and_keywords(name: str) → str`

¹ Created with `sphinx-autoapi`

```
classmethod encode_handle_python_builtins_and_keywords(name: str) → str
```

```
class serializable.formatters.CamelCasePropertyNameFormatter
```

Bases: [BaseNameFormatter](#)

Helper class that provides a standard way to create an ABC using inheritance.

```
classmethod encode(property_name: str) → str
```

```
classmethod decode(property_name: str) → str
```

```
classmethod decode_as_class_name(name: str) → str
```

```
classmethod decode_handle_python_builtins_and_keywords(name: str) → str
```

```
classmethod encode_handle_python_builtins_and_keywords(name: str) → str
```

```
class serializable.formatters.KebabCasePropertyNameFormatter
```

Bases: [BaseNameFormatter](#)

Helper class that provides a standard way to create an ABC using inheritance.

```
classmethod encode(property_name: str) → str
```

```
classmethod decode(property_name: str) → str
```

```
classmethod decode_as_class_name(name: str) → str
```

```
classmethod decode_handle_python_builtins_and_keywords(name: str) → str
```

```
classmethod encode_handle_python_builtins_and_keywords(name: str) → str
```

```
class serializable.formatters.SnakeCasePropertyNameFormatter
```

Bases: [BaseNameFormatter](#)

Helper class that provides a standard way to create an ABC using inheritance.

```
classmethod encode(property_name: str) → str
```

```
classmethod decode(property_name: str) → str
```

```
classmethod decode_as_class_name(name: str) → str
```

```
classmethod decode_handle_python_builtins_and_keywords(name: str) → str
```

```
classmethod encode_handle_python_builtins_and_keywords(name: str) → str
```

```
class serializable.formatters.CurrentFormatter
```

```
formatter: Type[BaseNameFormatter]
```

[serializable.helpers](#)

Module Contents

Classes

<i>BaseHelper</i>	Base Helper.
<i>Iso8601Date</i>	Base Helper.
<i>XsdDate</i>	Base Helper.
<i>XsdDateTime</i>	Base Helper.

class serializable.helpers.BaseHelper

Base Helper.

Inherit from this class and implement/override the needed functions!

This class does not provide any functionality, it is more like a Protocol with some fallback implementations.

abstract classmethod **serialize**(*o: Any*) → Any | str

general purpose serializer

abstract classmethod **deserialize**(*o: Any*) → Any

general purpose deserializer

classmethod **json_normalize**(*o: Any, *, view: Type[serializable.ViewType] | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any | None

json specific normalizer

classmethod **json_serialize**(*o: Any*) → str | Any

json specific serializer

classmethod **json_denormalize**(*o: Any, *, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any

json specific denormalizer

Parameters

- **tCls** – the class that was desired to denormalize to
- **pCls** – the parent class - as context

classmethod **json_deserialize**(*o: Any*) → Any

json specific deserializer

classmethod **xml_normalize**(*o: Any, *, element_name: str, view: Type[serializable.ViewType] | None, xmlns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → xml.etree.ElementTree.Element | Any | None

xml specific normalizer

classmethod **xml_serialize**(*o: Any*) → str | Any

xml specific serializer

classmethod **xml_denormalize**(*o: xml.etree.ElementTree.Element, *, default_ns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any

xml specific denormalizer

classmethod **xml_deserialize**(*o: str | Any*) → Any
xml specific deserializer

class serializable.helpers.Iso8601Date

Bases: [BaseHelper](#)

Base Helper.

Inherit from this class and implement/override the needed functions!

This class does not provide any functionality, it is more like a Protocol with some fallback implementations.

classmethod **serialize**(*o: Any*) → str
general purpose serializer

classmethod **deserialize**(*o: Any*) → datetime.date
general purpose deserializer

classmethod **json_normalize**(*o: Any, *, view: Type[serializable.ViewType] | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any | None
json specific normalizer

classmethod **json_serialize**(*o: Any*) → str | Any
json specific serializer

classmethod **json_denormalize**(*o: Any, *, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any
json specific denormalizer

Parameters

- **tCls** – the class that was desired to denormalize to
- **pCls** – the parent class - as context

classmethod **json_deserialize**(*o: Any*) → Any
json specific deserializer

classmethod **xml_normalize**(*o: Any, *, element_name: str, view: Type[serializable.ViewType] | None, xmlns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → xml.etree.ElementTree.Element | Any | None
xml specific normalizer

classmethod **xml_serialize**(*o: Any*) → str | Any
xml specific serializer

classmethod **xml_denormalize**(*o: xml.etree.ElementTree.Element, *, default_ns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any
xml specific denormalizer

classmethod **xml_deserialize**(*o: str | Any*) → Any
xml specific deserializer

class serializable.helpers.XsdDateBases: [BaseHelper](#)

Base Helper.

Inherit from this class and implement/override the needed functions!

This class does not provide any functionality, it is more like a Protocol with some fallback implementations.

classmethod **serialize**(*o: Any*) → str

general purpose serializer

classmethod **deserialize**(*o: Any*) → datetime.date

general purpose deserializer

classmethod **json_normalize**(*o: Any, *, view: Type[serializable.ViewType] | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any | None

json specific normalizer

classmethod **json_serialize**(*o: Any*) → str | Any

json specific serializer

classmethod **json_denormalize**(*o: Any, *, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any

json specific denormalizer

Parameters

- **tCls** – the class that was desired to denormalize to
- **pCls** – the parent class - as context

classmethod **json_deserialize**(*o: Any*) → Any

json specific deserializer

classmethod **xml_normalize**(*o: Any, *, element_name: str, view: Type[serializable.ViewType] | None, xmlns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → xml.etree.ElementTree.Element | Any | None

xml specific normalizer

classmethod **xml_serialize**(*o: Any*) → str | Any

xml specific serializer

classmethod **xml_denormalize**(*o: xml.etree.ElementTree.Element, *, default_ns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any*) → Any

xml specific denormalizer

classmethod **xml_deserialize**(*o: str | Any*) → Any

xml specific deserializer

class serializable.helpers.XsdDateTimeBases: [BaseHelper](#)

Base Helper.

Inherit from this class and implement/override the needed functions!

This class does not provide any functionality, it is more like a Protocol with some fallback implementations.

classmethod `serialize(o: Any) → str`

general purpose serializer

classmethod `deserialize(o: Any) → datetime.datetime`

general purpose deserializer

classmethod `json_normalize(o: Any, *, view: Type[serializable.ViewType] | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any) → Any | None`

json specific normalizer

classmethod `json_serialize(o: Any) → str | Any`

json specific serializer

classmethod `json_denormalize(o: Any, *, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any) → Any`

json specific denormalizer

Parameters

- **tCls** – the class that was desired to denormalize to
- **pCls** – the parent class - as context

classmethod `json_deserialize(o: Any) → Any`

json specific deserializer

classmethod `xml_normalize(o: Any, *, element_name: str, view: Type[serializable.ViewType] | None, xmlns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any) → xml.etree.ElementTree.Element | Any | None`

xml specific normalizer

classmethod `xml_serialize(o: Any) → str | Any`

xml specific serializer

classmethod `xml_denormalize(o: xml.etree.ElementTree.Element, *, default_ns: str | None, prop_info: serializable.ObjectMetadataLibrary.SerializableProperty, ctx: Type[Any], **kwargs: Any) → Any`

xml specific denormalizer

classmethod `xml_deserialize(o: str | Any) → Any`

xml specific deserializer

7.1.2 Package Contents

Classes

<i>ViewType</i>	Base of all views.
<i>SerializationType</i>	Enum to define the different formats supported for serialization and deserialization.
<i>XmlArraySerializationType</i>	Enum to differentiate how array-type properties (think Iterables) are serialized.
<i>ObjectMetadataLibrary</i>	namespace-like

Functions

<i>serializable_enum(...)</i>	Decorator
<i>serializable_class(...)</i>	Decorator used to tell serializable that a class is to be included in (de-)serialization.
<i>type_mapping</i> (→ Callable[[_F], _F])	Decorator
<i>include_none</i> (→ Callable[[_F], _F])	Decorator
<i>json_name</i> (→ Callable[[_F], _F])	Decorator
<i>string_format</i> (→ Callable[[_F], _F])	Decorator
<i>view</i> (→ Callable[[_F], _F])	Decorator
<i>xml_attribute</i> (→ Callable[[_F], _F])	Decorator
<i>xml_array</i> (→ Callable[[_F], _F])	Decorator
<i>xml_name</i> (→ Callable[[_F], _F])	Decorator
<i>xml_sequence</i> (→ Callable[[_F], _F])	Decorator

Attributes

<i>logger</i>	The logger. The thing that captures all this package has to say.
---------------	--

`serializable.logger`

The logger. The thing that captures all this package has to say. Feel free to modify its level and attach handlers to it.

`class serializable.ViewType`

Base of all views.

`class serializable.SerializationType`

Bases: `str`, `enum.Enum`

Enum to define the different formats supported for serialization and deserialization.

JSON = 'JSON'

XML = 'XML'

`capitalize()`

Return a capitalized version of the string.

More specifically, make the first character have upper case and the rest lower case.

casefold()

Return a version of the string suitable for caseless comparisons.

center()

Return a centered string of length width.

Padding is done using the specified fill character (default is a space).

count()

S.count(sub[, start[, end]]) -> int

Return the number of non-overlapping occurrences of substring sub in string S[start:end]. Optional arguments start and end are interpreted as in slice notation.

encode()

Encode the string using the codec registered for encoding.

encoding

The encoding in which to encode the string.

errors

The error handling scheme to use for encoding errors. The default is 'strict' meaning that encoding errors raise a UnicodeEncodeError. Other possible values are 'ignore', 'replace' and 'xmlcharrefreplace' as well as any other name registered with codecs.register_error that can handle UnicodeEncodeErrors.

endswith()

S.endswith(suffix[, start[, end]]) -> bool

Return True if S ends with the specified suffix, False otherwise. With optional start, test S beginning at that position. With optional end, stop comparing S at that position. suffix can also be a tuple of strings to try.

expandtabs()

Return a copy where all tab characters are expanded using spaces.

If tabsize is not given, a tab size of 8 characters is assumed.

find()

S.find(sub[, start[, end]]) -> int

Return the lowest index in S where substring sub is found, such that sub is contained within S[start:end]. Optional arguments start and end are interpreted as in slice notation.

Return -1 on failure.

format()

S.format(*args, **kwargs) -> str

Return a formatted version of S, using substitutions from args and kwargs. The substitutions are identified by braces ('{' and '}').

format_map()

S.format_map(mapping) -> str

Return a formatted version of S, using substitutions from mapping. The substitutions are identified by braces ('{' and '}').

index()

S.index(sub[, start[, end]]) -> int

Return the lowest index in S where substring sub is found, such that sub is contained within S[start:end]. Optional arguments start and end are interpreted as in slice notation.

Raises ValueError when the substring is not found.

isalnum()

Return True if the string is an alpha-numeric string, False otherwise.

A string is alpha-numeric if all characters in the string are alpha-numeric and there is at least one character in the string.

isalpha()

Return True if the string is an alphabetic string, False otherwise.

A string is alphabetic if all characters in the string are alphabetic and there is at least one character in the string.

isascii()

Return True if all characters in the string are ASCII, False otherwise.

ASCII characters have code points in the range U+0000-U+007F. Empty string is ASCII too.

isdecimal()

Return True if the string is a decimal string, False otherwise.

A string is a decimal string if all characters in the string are decimal and there is at least one character in the string.

isdigit()

Return True if the string is a digit string, False otherwise.

A string is a digit string if all characters in the string are digits and there is at least one character in the string.

isidentifier()

Return True if the string is a valid Python identifier, False otherwise.

Call keyword.iskeyword(s) to test whether string s is a reserved identifier, such as “def” or “class”.

islower()

Return True if the string is a lowercase string, False otherwise.

A string is lowercase if all cased characters in the string are lowercase and there is at least one cased character in the string.

isnumeric()

Return True if the string is a numeric string, False otherwise.

A string is numeric if all characters in the string are numeric and there is at least one character in the string.

isprintable()

Return True if the string is printable, False otherwise.

A string is printable if all of its characters are considered printable in repr() or if it is empty.

isspace()

Return True if the string is a whitespace string, False otherwise.

A string is whitespace if all characters in the string are whitespace and there is at least one character in the string.

istitle()

Return True if the string is a title-cased string, False otherwise.

In a title-cased string, upper- and title-case characters may only follow uncased characters and lowercase characters only cased ones.

isupper()

Return True if the string is an uppercase string, False otherwise.

A string is uppercase if all cased characters in the string are uppercase and there is at least one cased character in the string.

join()

Concatenate any number of strings.

The string whose method is called is inserted in between each given string. The result is returned as a new string.

Example: `'.'.join(['ab', 'pq', 'rs']) -> 'ab.pq.rs'`

ljust()

Return a left-justified string of length width.

Padding is done using the specified fill character (default is a space).

lower()

Return a copy of the string converted to lowercase.

lstrip()

Return a copy of the string with leading whitespace removed.

If chars is given and not None, remove characters in chars instead.

partition()

Partition the string into three parts using the given separator.

This will search for the separator in the string. If the separator is found, returns a 3-tuple containing the part before the separator, the separator itself, and the part after it.

If the separator is not found, returns a 3-tuple containing the original string and two empty strings.

removeprefix()

Return a str with the given prefix string removed if present.

If the string starts with the prefix string, return `string[len(prefix):]`. Otherwise, return a copy of the original string.

removesuffix()

Return a str with the given suffix string removed if present.

If the string ends with the suffix string and that suffix is not empty, return `string[:-len(suffix)]`. Otherwise, return a copy of the original string.

replace()

Return a copy with all occurrences of substring old replaced by new.

count

Maximum number of occurrences to replace. -1 (the default value) means replace all occurrences.

If the optional argument count is given, only the first count occurrences are replaced.

rfind()

`S.rfind(sub[, start[, end]]) -> int`

Return the highest index in S where substring sub is found, such that sub is contained within `S[start:end]`. Optional arguments start and end are interpreted as in slice notation.

Return -1 on failure.

rindex()

S.rindex(sub[, start[, end]]) -> int

Return the highest index in S where substring sub is found, such that sub is contained within S[start:end]. Optional arguments start and end are interpreted as in slice notation.

Raises ValueError when the substring is not found.

rjust()

Return a right-justified string of length width.

Padding is done using the specified fill character (default is a space).

rpartition()

Partition the string into three parts using the given separator.

This will search for the separator in the string, starting at the end. If the separator is found, returns a 3-tuple containing the part before the separator, the separator itself, and the part after it.

If the separator is not found, returns a 3-tuple containing two empty strings and the original string.

rsplit()

Return a list of the substrings in the string, using sep as the separator string.

sep

The separator used to split the string.

When set to None (the default value), will split on any whitespace character (including n r t f and spaces) and will discard empty strings from the result.

maxsplit

Maximum number of splits (starting from the left). -1 (the default value) means no limit.

Splitting starts at the end of the string and works to the front.

rstrip()

Return a copy of the string with trailing whitespace removed.

If chars is given and not None, remove characters in chars instead.

split()

Return a list of the substrings in the string, using sep as the separator string.

sep

The separator used to split the string.

When set to None (the default value), will split on any whitespace character (including n r t f and spaces) and will discard empty strings from the result.

maxsplit

Maximum number of splits (starting from the left). -1 (the default value) means no limit.

Note, str.split() is mainly useful for data that has been intentionally delimited. With natural text that includes punctuation, consider using the regular expression module.

splitlines()

Return a list of the lines in the string, breaking at line boundaries.

Line breaks are not included in the resulting list unless keepends is given and true.

startswith()

S.startswith(prefix[, start[, end]]) -> bool

Return True if S starts with the specified prefix, False otherwise. With optional start, test S beginning at that position. With optional end, stop comparing S at that position. prefix can also be a tuple of strings to try.

strip()

Return a copy of the string with leading and trailing whitespace removed.

If chars is given and not None, remove characters in chars instead.

swapcase()

Convert uppercase characters to lowercase and lowercase characters to uppercase.

title()

Return a version of the string where each word is titlecased.

More specifically, words start with uppercased characters and all remaining cased characters have lower case.

translate()

Replace each character in the string using the given translation table.

table

Translation table, which must be a mapping of Unicode ordinals to Unicode ordinals, strings, or None.

The table must implement lookup/indexing via `__getitem__`, for instance a dictionary or list. If this operation raises `LookupError`, the character is left untouched. Characters mapped to None are deleted.

upper()

Return a copy of the string converted to uppercase.

zfill()

Pad a numeric string with zeros on the left, to fill a field of the given width.

The string is never truncated.

name()

The name of the Enum member.

value()

The value of the Enum member.

class serializable.**XmlArraySerializationType**(*args, **kwargs)

Bases: `enum.Enum`

Enum to differentiate how array-type properties (think Iterables) are serialized.

Given a Warehouse has a property boxes that returns *List[Box]*:

FLAT would allow for XML looking like:

```
`` <warehouse>
    <box>..box 1..</box> <box>..box 2..</box>
</warehouse> ``
```

NESTED would allow for XML looking like:

```
`` <warehouse>
```

```

    <boxes>
      <box>..box 1..</box> <box>..box 2..</box>

    </boxes>
  </warehouse> ``

```

FLAT = 1

NESTED = 2

name()

The name of the Enum member.

value()

The value of the Enum member.

class serializable.ObjectMetadataLibrary

namespace-like

The core Class in `serializable` that is used to record all metadata about classes that you annotate for serialization and deserialization.

```

class SerializableClass(* , klass: type, custom_name: str | None = None, serialization_types:
    Iterable[SerializationType] | None = None, ignore_during_deserialization:
    Iterable[str] | None = None)

```

Internal model class used to represent metadata we hold about Classes that are being included in (de-)serialization.

property name: str

property klass: type

property custom_name: str | None

property serialization_types: Iterable[SerializationType]

property ignore_during_deserialization: Set[str]

```

class SerializableProperty(* , prop_name: str, prop_type: Any, custom_names:
    Dict[SerializationType, str], custom_type: Any | None = None,
    include_none_config: Set[Tuple[Type[ViewType], Any]] | None = None,
    is_xml_attribute: bool = False, string_format_: str | None = None, views:
    Iterable[Type[ViewType]] | None = None, xml_array_config:
    Tuple[XmlArraySerializationType, str] | None = None, xml_sequence_: int
    | None = None)

```

Internal model class used to represent metadata we hold about Properties that are being included in (de-)serialization.

property name: str

property custom_names: Dict[SerializationType, str]

property type_: Any

property concrete_type: Any

property custom_type: Any | None

```
property include_none: bool
property include_none_views: Set[Tuple[Type[ViewType], Any]]
property is_xml_attribute: bool
property string_format: str | None
property views: Set[Type[ViewType]]
property xml_array_config: Tuple[XmlArraySerializationType, str] | None
property is_array: bool
property is_enum: bool
property is_optional: bool
property xml_sequence: int
custom_name(serialization_type: SerializationType) → str | None
include_none_for_view(view_: Type[ViewType]) → bool
get_none_value_for_view(view_: Type[ViewType] | None) → Any
get_none_value(view_: Type[ViewType] | None = None) → Any
is_helper_type() → bool
is_primitive_type() → bool
parse_type_deferred() → None

custom_enum_klasses: Set[Type[enum.Enum]]
klass_mappings: Dict[str, ObjectMetadataLibrary]
klass_property_mappings: Dict[str, Dict[str, ObjectMetadataLibrary]]
classmethod defer_property_type_parsing(prop: ObjectMetadataLibrary, klasses: Iterable[str]) →
    None
classmethod is_klass_serializable(klass: Any) → bool
classmethod is_property(o: Any) → bool
classmethod register_enum(klass: Type[_E]) → Type[_E]
classmethod register_klass(klass: Type[_T], custom_name: str | None, serialization_types:
    Iterable[SerializationType], ignore_during_deserialization: Iterable[str] |
    None = None) → Type[_T] | Type[_JsonSerializable] |
    Type[_XmlSerializable]
classmethod register_custom_json_property_name(qual_name: str, json_property_name: str) →
    None
classmethod register_custom_string_format(qual_name: str, string_format: str) → None
```

```

classmethod register_custom_xml_property_name(qual_name: str, xml_property_name: str) →
    None

classmethod register_klass_view(klass: Type[_T], view_: Type[ViewType]) → Type[_T]

classmethod register_property_include_none(qual_name: str, view_: Type[ViewType] | None =
    None, none_value: Any | None = None) → None

classmethod register_property_view(qual_name: str, view_: Type[ViewType]) → None

classmethod register_xml_property_array_config(qual_name: str, array_type:
    XmlArraySerializationType, child_name: str) →
    None

classmethod register_xml_property_attribute(qual_name: str) → None

classmethod register_xml_property_sequence(qual_name: str, sequence: int) → None

classmethod register_property_type_mapping(qual_name: str, mapped_type: type) → None

serializable.serializable_enum(cls: Literal[None] = None) → Callable[[Type[_E]], Type[_E]]
serializable.serializable_enum(cls: Type[_E]) → Type[_E]
Decorator

serializable.serializable_class(cls: Literal[None] = None, *, name: str | None = ..., serialization_types:
    Iterable[SerializationType] | None = ..., ignore_during_deserialization:
    Iterable[str] | None = ...) → Callable[[Type[_T]], Type[_T] |
    Type[_JsonSerializable] | Type[_XmlSerializable]]

serializable.serializable_class(cls: Type[_T], *, name: str | None = ..., serialization_types:
    Iterable[SerializationType] | None = ..., ignore_during_deserialization:
    Iterable[str] | None = ...) → Type[_T] | Type[_JsonSerializable] |
    Type[_XmlSerializable]

```

Decorator used to tell serializable that a class is to be included in (de-)serialization.

Parameters

- **cls** – Class
- **name** – Alternative name to use for this Class
- **serialization_types** – Serialization Types that are to be supported for this class.
- **ignore_during_deserialization** – List of properties/elements to ignore during deserialization

Returns

```

serializable.type_mapping(type_: type) → Callable[[_F], _F]
Decorator

serializable.include_none(view_: Type[ViewType] | None = None, none_value: Any | None = None) →
    Callable[[_F], _F]
Decorator

serializable.json_name(name: str) → Callable[[_F], _F]
Decorator

serializable.string_format(format_: str) → Callable[[_F], _F]
Decorator

```

`serializable.view(view_: Type[ViewType]) → Callable[[_F], _F]`

Decorator

`serializable.xml_attribute() → Callable[[_F], _F]`

Decorator

`serializable.xml_array(array_type: XmlArraySerializationType, child_name: str) → Callable[[_F], _F]`

Decorator

`serializable.xml_name(name: str) → Callable[[_F], _F]`

Decorator

`serializable.xml_sequence(sequence: int) → Callable[[_F], _F]`

Decorator

PYTHON MODULE INDEX

S

`serializable`, [65](#)

`serializable.formatters`, [65](#)

`serializable.helpers`, [66](#)

INDEX

B

`BaseHelper` (class in `serializable.helpers`), 67

`BaseNameFormatter` (class in `serializable.formatters`), 65

C

`CamelCasePropertyNameFormatter` (class in `serializable.formatters`), 66

`capitalize()` (`serializable.SerializationType` method), 71

`casefold()` (`serializable.SerializationType` method), 71

`center()` (`serializable.SerializationType` method), 72

`concrete_type` (`serializable.ObjectMetadataLibrary.SerializableProperty` property), 77

`count()` (`serializable.SerializationType` method), 72

`CurrentFormatter` (class in `serializable.formatters`), 66

`custom_enum_klasses` (`serializable.ObjectMetadataLibrary` attribute), 78

`custom_name` (`serializable.ObjectMetadataLibrary.SerializableClass` property), 77

`custom_name()` (`serializable.ObjectMetadataLibrary.SerializableProperty` method), 78

`custom_names` (`serializable.ObjectMetadataLibrary.SerializableProperty` property), 77

`custom_type` (`serializable.ObjectMetadataLibrary.SerializableProperty` property), 77

D

`decode()` (`serializable.formatters.BaseNameFormatter` class method), 65

`decode()` (`serializable.formatters.CamelCasePropertyNameFormatter` class method), 66

`decode()` (`serializable.formatters.KebabCasePropertyNameFormatter` class method), 66

`decode()` (`serializable.formatters.SnakeCasePropertyNameFormatter` class method), 66

`decode_as_class_name()` (`serializable.formatters.BaseNameFormatter` class method), 65

`decode_as_class_name()` (`serializable.formatters.CamelCasePropertyNameFormatter` class method), 66

`decode_as_class_name()` (`serializable.formatters.KebabCasePropertyNameFormatter` class method), 66

`decode_as_class_name()` (`serializable.formatters.SnakeCasePropertyNameFormatter` class method), 66

`decode_handle_python_builtins_and_keywords()` (`serializable.formatters.BaseNameFormatter` class method), 65

`decode_handle_python_builtins_and_keywords()` (`serializable.formatters.CamelCasePropertyNameFormatter` class method), 66

`decode_handle_python_builtins_and_keywords()` (`serializable.formatters.KebabCasePropertyNameFormatter` class method), 66

`decode_handle_python_builtins_and_keywords()` (`serializable.formatters.SnakeCasePropertyNameFormatter` class method), 66

`defer_property_type_parsing()` (`serializable.ObjectMetadataLibrary` class method), 78

`deserialize()` (`serializable.helpers.BaseHelper` class method), 67

`deserialize()` (`serializable.helpers.Iso8601Date` class method), 68

`deserialize()` (`serializable.helpers.XsdDate` class method), 69

`deserialize()` (`serializable.helpers.XsdDateTime` class method), 70

E

`encode()` (`serializable.formatters.BaseNameFormatter` class method), 65

`encode()` (`serializable.formatters.CamelCasePropertyNameFormatter` class method), 66

`encode()` (`serializable.formatters.KebabCasePropertyNameFormatter`

class method), 66
 encode() (serializable.formatters.SnakeCasePropertyNameFormatter property), 78
 class method), 66
 encode() (serializable.SerializationType method), 72
 encode_handle_python_builtins_and_keywords() (serializable.formatters.BaseNameFormatter class method), 65
 encode_handle_python_builtins_and_keywords() (serializable.formatters.CamelCasePropertyNameFormatter class method), 66
 encode_handle_python_builtins_and_keywords() (serializable.formatters.KebabCasePropertyNameFormatter class method), 66
 encode_handle_python_builtins_and_keywords() (serializable.formatters.SnakeCasePropertyNameFormatter class method), 66
 endswith() (serializable.SerializationType method), 72
 expandtabs() (serializable.SerializationType method), 72
F
 find() (serializable.SerializationType method), 72
 FLAT (serializable.XmlArraySerializationType attribute), 77
 format() (serializable.SerializationType method), 72
 format_map() (serializable.SerializationType method), 72
 formatter (serializable.formatters.CurrentFormatter attribute), 66
G
 get_none_value() (serializable.ObjectMetadataLibrary.SerializableProperty method), 78
 get_none_value_for_view() (serializable.ObjectMetadataLibrary.SerializableProperty method), 78
I
 ignore_during_deserialization (serializable.ObjectMetadataLibrary.SerializableClass property), 77
 include_none (serializable.ObjectMetadataLibrary.SerializableProperty property), 77
 include_none() (in module serializable), 79
 include_none_for_view() (serializable.ObjectMetadataLibrary.SerializableProperty method), 78
 include_none_views (serializable.ObjectMetadataLibrary.SerializableProperty property), 78
 index() (serializable.SerializationType method), 72
 is_array (serializable.ObjectMetadataLibrary.SerializableProperty property), 78
 is_enum (serializable.ObjectMetadataLibrary.SerializableProperty property), 78
 is_helper_type() (serializable.ObjectMetadataLibrary.SerializableProperty method), 78
 is_klass_serializable() (serializable.ObjectMetadataLibrary class method), 78
 is_optional (serializable.ObjectMetadataLibrary.SerializableProperty property), 78
 is_primitive_type() (serializable.ObjectMetadataLibrary.SerializableProperty method), 78
 is_property() (serializable.ObjectMetadataLibrary class method), 78
 is_xml_attribute (serializable.ObjectMetadataLibrary.SerializableProperty property), 78
 isalnum() (serializable.SerializationType method), 73
 isalpha() (serializable.SerializationType method), 73
 isascii() (serializable.SerializationType method), 73
 isdecimal() (serializable.SerializationType method), 73
 isdigit() (serializable.SerializationType method), 73
 isidentifier() (serializable.SerializationType method), 73
 islower() (serializable.SerializationType method), 73
 isnumeric() (serializable.SerializationType method), 73
 Iso8601Date (class in serializable.helpers), 68
 isprintable() (serializable.SerializationType method), 73
 isspace() (serializable.SerializationType method), 73
 istitle() (serializable.SerializationType method), 73
 isupper() (serializable.SerializationType method), 73
J
 join() (serializable.SerializationType method), 74
 JSON (serializable.SerializationType attribute), 71
 json_denormalize() (serializable.helpers.BaseHelper class method), 67
 json_denormalize() (serializable.helpers.Iso8601Date class method), 68
 json_denormalize() (serializable.helpers.XsdDate class method), 69
 json_denormalize() (serializable.helpers.XsdDateTime class method), 70
 json_deserialize() (serializable.helpers.BaseHelper class method), 67

[json_deserialize\(\)](#) (*serializable.helpers.Iso8601Date class method*), 68
[json_deserialize\(\)](#) (*serializable.helpers.XsdDate class method*), 69
[json_deserialize\(\)](#) (*serializable.helpers.XsdDateTime class method*), 70
[json_name\(\)](#) (*in module serializable*), 79
[json_normalize\(\)](#) (*serializable.helpers.BaseHelper class method*), 67
[json_normalize\(\)](#) (*serializable.helpers.Iso8601Date class method*), 68
[json_normalize\(\)](#) (*serializable.helpers.XsdDate class method*), 69
[json_normalize\(\)](#) (*serializable.helpers.XsdDateTime class method*), 70
[json_serialize\(\)](#) (*serializable.helpers.BaseHelper class method*), 67
[json_serialize\(\)](#) (*serializable.helpers.Iso8601Date class method*), 68
[json_serialize\(\)](#) (*serializable.helpers.XsdDate class method*), 69
[json_serialize\(\)](#) (*serializable.helpers.XsdDateTime class method*), 70

K

[KebabCasePropertyNameFormatter](#) (*class in serializable.formatters*), 66
[klass](#) (*serializable.ObjectMetadataLibrary.SerializableClass property*), 77
[klass_mappings](#) (*serializable.ObjectMetadataLibrary attribute*), 78
[klass_property_mappings](#) (*serializable.ObjectMetadataLibrary attribute*), 78

L

[ljust\(\)](#) (*serializable.SerializationType method*), 74
[logger](#) (*in module serializable*), 71
[lower\(\)](#) (*serializable.SerializationType method*), 74
[lstrip\(\)](#) (*serializable.SerializationType method*), 74

M

[module](#)
 [serializable](#), 65
 [serializable.formatters](#), 65
 [serializable.helpers](#), 66

N

[name](#) (*serializable.ObjectMetadataLibrary.SerializableClass property*), 77
[name](#) (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 77
[name\(\)](#) (*serializable.SerializationType method*), 76
[name\(\)](#) (*serializable.XmlArraySerializationType method*), 77
[NESTED](#) (*serializable.XmlArraySerializationType attribute*), 77

O

[ObjectMetadataLibrary](#) (*class in serializable*), 77
[ObjectMetadataLibrary.SerializableClass](#) (*class in serializable*), 77
[ObjectMetadataLibrary.SerializableProperty](#) (*class in serializable*), 77

P

[parse_type_deferred\(\)](#) (*serializable.ObjectMetadataLibrary.SerializableProperty method*), 78
[partition\(\)](#) (*serializable.SerializationType method*), 74

R

[register_custom_json_property_name\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 78
[register_custom_string_format\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 78
[register_custom_xml_property_name\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 78
[register_enum\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 78
[register_klass\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 78
[register_klass_view\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_property_include_none\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_property_type_mapping\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_property_view\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_xml_property_array_config\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_xml_property_attribute\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79
[register_xml_property_sequence\(\)](#) (*serializable.ObjectMetadataLibrary class method*), 79

- `removeprefix()` (*serializable.SerializationType method*), 74
- `removesuffix()` (*serializable.SerializationType method*), 74
- `replace()` (*serializable.SerializationType method*), 74
- `rfind()` (*serializable.SerializationType method*), 74
- `rindex()` (*serializable.SerializationType method*), 74
- `rjust()` (*serializable.SerializationType method*), 75
- `rpartition()` (*serializable.SerializationType method*), 75
- `rsplit()` (*serializable.SerializationType method*), 75
- `rstrip()` (*serializable.SerializationType method*), 75
- S**
- `serializable`
 - module, 65
- `serializable.formatters`
 - module, 65
- `serializable.helpers`
 - module, 66
- `serializable_class()` (*in module serializable*), 79
- `serializable_enum()` (*in module serializable*), 79
- `serialization_types` (*serializable.ObjectMetadataLibrary.SerializableClass property*), 77
- `SerializationType` (*class in serializable*), 71
- `serialize()` (*serializable.helpers.BaseHelper class method*), 67
- `serialize()` (*serializable.helpers.Iso8601Date class method*), 68
- `serialize()` (*serializable.helpers.XsdDate class method*), 69
- `serialize()` (*serializable.helpers.XsdDateTime class method*), 70
- `SnakeCasePropertyNameFormatter` (*class in serializable.formatters*), 66
- `split()` (*serializable.SerializationType method*), 75
- `splitlines()` (*serializable.SerializationType method*), 75
- `startswith()` (*serializable.SerializationType method*), 75
- `string_format` (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 78
- `string_format()` (*in module serializable*), 79
- `strip()` (*serializable.SerializationType method*), 76
- `swapcase()` (*serializable.SerializationType method*), 76
- T**
- `title()` (*serializable.SerializationType method*), 76
- `translate()` (*serializable.SerializationType method*), 76
- `type_` (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 77
- `type_mapping()` (*in module serializable*), 79
- U**
- `upper()` (*serializable.SerializationType method*), 76
- V**
- `value()` (*serializable.SerializationType method*), 76
- `value()` (*serializable.XmlArraySerializationType method*), 77
- `view()` (*in module serializable*), 79
- `views` (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 78
- `ViewType` (*class in serializable*), 71
- X**
- `XML` (*serializable.SerializationType attribute*), 71
- `xml_array()` (*in module serializable*), 80
- `xml_array_config` (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 78
- `xml_attribute()` (*in module serializable*), 80
- `xml_denormalize()` (*serializable.helpers.BaseHelper class method*), 67
- `xml_denormalize()` (*serializable.helpers.Iso8601Date class method*), 68
- `xml_denormalize()` (*serializable.helpers.XsdDate class method*), 69
- `xml_denormalize()` (*serializable.helpers.XsdDateTime class method*), 70
- `xml_deserialize()` (*serializable.helpers.BaseHelper class method*), 67
- `xml_deserialize()` (*serializable.helpers.Iso8601Date class method*), 68
- `xml_deserialize()` (*serializable.helpers.XsdDate class method*), 69
- `xml_deserialize()` (*serializable.helpers.XsdDateTime class method*), 70
- `xml_name()` (*in module serializable*), 80
- `xml_normalize()` (*serializable.helpers.BaseHelper class method*), 67
- `xml_normalize()` (*serializable.helpers.Iso8601Date class method*), 68
- `xml_normalize()` (*serializable.helpers.XsdDate class method*), 69
- `xml_normalize()` (*serializable.helpers.XsdDateTime class method*), 70
- `xml_name()` (*in module serializable*), 80
- `xml_sequence` (*serializable.ObjectMetadataLibrary.SerializableProperty property*), 78
- `xml_sequence()` (*in module serializable*), 80
- `xml_serialize()` (*serializable.helpers.BaseHelper class method*), 67
- `xml_serialize()` (*serializable.helpers.Iso8601Date class method*), 68

`xml_serialize()` (*serializable.helpers.XsdDate* class method), [69](#)

`xml_serialize()` (*serializable.helpers.XsdDateTime* class method), [70](#)

`XmlArraySerializationType` (class in *serializable*), [76](#)

`XsdDate` (class in *serializable.helpers*), [68](#)

`XsdDateTime` (class in *serializable.helpers*), [69](#)

Z

`zfill()` (*serializable.SerializationType* method), [76](#)