legislice Release 0.7.0

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Oct 22, 2021

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Release v. 0.7.0.

Legislice is a utility for downloading the text of statutes and constitutional provisions, and then creating computable objects representing passages from those provisions.

CHAPTER

GUIDES

To access interactive versions of these guides in Jupyter Notebooks, you can download the Legislice repository on GitHub.

1.1 Downloading Legislation

Legislice is a utility for downloading the text of statutes and constitutional provisions, and then creating computable objects representing passages from those provisions. This guide will show how to get started.

Legislice depends on the AuthoritySpoke API as its source of legislative text. Currently the API serves the text of the United States Constitution, plus versions of the United States Code in effect since 2013. Provisions of the United States Code that were repealed prior to 2013 aren't yet available through the API, and neither are any regulations or any state law.

1.1.1 Using an API token

To get started, make an account on authorityspoke.com. Then go to the User Profile page, where you can find your API token. The token is a 40-character string of random letters and numbers. You'll be sending this token to AuthoritySpoke to validate each API request, and you should keep it secret as you would a password.

There are several ways for Python to access your API token. One way would be to simply define it as a Python string, like this:

>>> TOKEN = "YOU_COULD_PUT_YOUR_API_TOKEN_HERE"

However, a better option is to make your API token an **environment variable**, and then use Python to access that variable. Using a Python library called dotenv, you can define an environment variable in a file called .env in the root of your project directory. For instance, the contents of the file .env could look like this:

LEGISLICE_API_TOKEN=YOUR_API_TOKEN_GOES_HERE

By doing this, you can avoid having a copy of your API token in your Python working file or notebook. That makes it easier to avoid accidentally publishing the API token or sharing it with unauthorized people.

Here's an example of loading an API token from a $\tt.env$ file using dotenv.

```
>>> import os
>>> from dotenv import load_dotenv
>>> load_dotenv()
True
>>> TOKEN = os.getenv("LEGISLICE_API_TOKEN")
```

Now you can use the API token to create a Legislice *Client* object. This object holds your API token, so you can reuse the *Client* without re-entering your API token repeatedly.

```
>>> from legislice.download import Client
>>> client = Client(api_token=TOKEN)
```

1.1.2 Fetching a provision from the API

To download legislation using the *Client*, we must specify a path to the provision we want, and optionally we can specify the date of the version of the provision we want. If we don't specify a date, we'll be given the most recent version of the provision.

The path citation format is based on the section identifiers in the United States Legislative Markup standard, which is a United States government standard used by the Office of the Law Revision Counsel for publishing the United States Code. Similar to a URL path in a web address, the path format is a series of labels connected with forward slashes. The first part identifies the jurisdiction, the second part (if any) identifies the legislative code within that jurisdiction, the third part identifies the next-level division of the code such as a numbered title, and so on.

If we don't know the right citation for the provision we want, we can sign in to an AuthoritySpoke account and browse the directory of available provisions, where the links to each provision show the correct path for that provision. Or we can browse an HTML version of the API itself. If the error message "Authentication credentials were not provided" appears, that means we aren't signed in, and we might want to go back to the login page.

The *fetch()* method makes an API call to AuthoritySpoke, and returns JSON that is been converted to a Python dict. There are fields representing the content of the provision, the start_date when the provision went into effect, and more.

Here's an example of how to fetch the text of the Fourth Amendment using the Client.

```
>>> data = client.fetch(query="/us/const/amendment/IV")
>>> data
{ 'heading': 'AMENDMENT IV.',
'start_date': '1791-12-15',
'node': '/us/const/amendment/IV',
'text_version': {
    'id': 735706,
    'url': 'https://authorityspoke.com/api/v1/textversions/735706/',
    'content': 'The right of the people to be secure in their persons, houses, papers,
\rightarrow and effects, against unreasonable searches and seizures, shall not be violated, and no
\rightarrowWarrants shall issue, but upon probable cause, supported by Oath or affirmation, and
\rightarrow particularly describing the place to be searched, and the persons or things to be
→seized.'},
'url': 'https://authorityspoke.com/api/v1/us/const/amendment/IV/',
'end_date': None,
'children': [],
'citations': [],
'parent': 'https://authorityspoke.com/api/v1/us/const/amendment/'}
```

1.1.3 Loading an Enactment object

If all we needed was to get a JSON response from the API, we could have used a more general Python library like requests. Legislice also lets us load the JSON response as a *legislice.enactments.Enactment* object, which has methods for selecting some but not all of the provision's text. One way to load an *Enactment* is with the *Client*'s *read_from_json()* method.

```
>>> fourth_a = client.read_from_json(data)
>>> fourth_a.node
'/us/const/amendment/IV'
```

Instead of always using *fetch()* followed by *read_from_json()*, we can combine the two functions together with *read()*. In this example, we'll use *read()* to load a constitutional amendment that contains subsections, to show that the structure of the amendment is preserved in the resulting *Enactment* object.

>>> thirteenth_a = client.read(query="/us/const/amendment/XIII")

The string representation of this provision includes both the selected text (which is the full text of the amendment) as well as a citation to the provision with its effective date.

Currently the only supported citation format is the path-style citation used in United States Legislative Markup. Future versions of Legislice may support the ability to convert to traditional statute citation styles.

```
>>> str(thirteenth_a)
'/us/const/amendment/XIII (1865-12-18)'
```

The text of the Thirteenth Amendment is all within Section 1 and Section 2 of the amendment. You can use the Enactment.children property to get a list of provisions contained within an Enactment.

```
>>> len(thirteenth_a.children)
2
```

Then we can access each child provision as its own Enactment object from the children list. Remember that lists in Python start at index 0, so if we want Section 2, we'll find it at index 1 of the children list.

```
>>> str(thirteenth_a.children[1].text)
'Congress shall have power to enforce this article by appropriate legislation.'
```

1.1.4 Downloading prior versions of an Enactment

The API can be used to access specific provisions deeply nested within the United States Code, and also to access multiple date versions of the same provision. Here's a subsection of an appropriations statute as of 2015. We can use the end_date attribute to find when this version of the statute was displaced by a new version.

And here's the same provision as of 2020. Its content has changed.

The 2020 version of the statute has None in its end_date field because it's still in effect.

```
>>> str(new_grant_objective.end_date)
'None'
```

1.1.5 Exploring the structure of a legislative code

When we query the API for a provision at a path with less than four parts (e.g., when we query for an entire Title of the United States Code), the response doesn't include the full text of the provision's children. Instead, it only contains URLs that link to the child nodes. These URL links might help to automate the process of navigating the API and discovering the provisions we want. Here's an example that discovers the URLs for the articles of the US Constitution.

1.1.6 Downloading Enactments from cross-references

If an *Enactment* loaded from the API references other provisions, it may provide a list of *CrossReference* objects when we call its *cross_references()* method. You can pass one of these *CrossReference* objects to the *fetch()* or *read()* method of the download client to get the referenced *Enactment*.

```
>>> infringement_provision = client.read("/us/usc/t17/s109/b/4")
>>> str(infringement_provision.text)
'Any person who distributes a phonorecord or a copy of a computer program (including any.
\rightarrowtape, disk, or other medium embodying such program) in violation of paragraph (1) is
\rightarrowan infringer of copyright under section 501 of this title and is subject to the.
\rightarrowremedies set forth in sections 502, 503, 504, and 505. Such violation shall not be a
\rightarrow criminal offense under section 506 or cause such person to be subject to the criminal
→penalties set forth in section 2319 of title 18.'
>>> len(infringement_provision.cross_references())
2
>>> str(infringement_provision.cross_references()[0])
'CrossReference(target_uri="/us/usc/t17/s501", reference_text="section 501 of this title
→")'
>>> reference_to_title_18 = infringement_provision.cross_references()[1]
>>> referenced_enactment = client.read(reference_to_title_18)
>>> referenced_enactment.text[:239]
'Any person who violates section 506(a) (relating to criminal offenses) of title 17.
\rightarrow shall be punished as provided in subsections (b), (c), and (d) and such penalties
```

(continued from previous page)

An important caveat for this feature is that the return value of the *cross_references()* method will only be populated with internal links that have been marked up in the United States Legislative Markup XML published by the legislature. Unfortunately, some parts of the United States Code don't include any link markup when making references to other legislation.

1.1.7 Downloading Enactments from inbound citations

The method in the previous section finds and downloads Enactments cited by a known *Enactment*. But sometimes we want to discover provisions that cite *to* a particular provision. These "inbound" citations are not stored on the Python Enactment object. Instead, we have to go back to the download client and make an API request to get them, using the *citations_to()* method.

In this example, we'll get all the citations to the provision of the United States Code cited /us/usc/t17/s501 (in other words, Title 17, Section 501). This gives us all known provisions that cite to that node in the document tree, regardless of whether different text has been enacted at that node at different times.

```
>>> inbound_refs = client.citations_to("/us/usc/t17/s501")
>>> str(inbound_refs[0])
'InboundReference to /us/usc/t17/s501, from (/us/usc/t17/s109/b/4 2013-07-18)'
```

We can examine one of these InboundReference objects to see the text creating the citation.

>>> inbound_refs[0].content

'Any person who distributes a phonorecord or a copy of a computer program (including any. →tape, disk, or other medium embodying such program) in violation of paragraph (1) is. →an infringer of copyright under section 501 of this title and is subject to the. →remedies set forth in sections 502, 503, 504, and 505. Such violation shall not be a. →criminal offense under section 506 or cause such person to be subject to the criminal. →penalties set forth in section 2319 of title 18.'

But an *InboundReference* doesn't have all the same information as an *Enactment* object. Importantly, it doesn't have the text of any subsections nested inside the cited provision. We can use the download *Client* again to convert the InboundReference into an Enactment.

This Enactment happens not to have any child nodes nested within it, so its full text is the same as what we saw when we looked at the InboundReference's content attribute.

>>> citing_enactment.children
[]

Sometimes, an *InboundReference* has more than one citation and start date. That means that the citing text has been enacted in different places at different times. This can happen because the provisions of a legislative code have been reorganized and renumbered. Here's an example. We'll look for citations to Section 1301 of USC Title 2, which is a section containing definitions of terms that will be used throughout the rest of Title 2.

```
>>> refs_to_definitions = client.citations_to("/us/usc/t2/s1301")
>>> str(refs_to_definitions[0])
'InboundReference to /us/usc/t2/s1301, from (/us/usc/t2/s4579/a/4/A 2018-05-09) and 2_
__other locations'
```

The *citations_to()* method returns a list, and two of the InboundReferences in this list have been enacted in three different locations.

```
>>> str(refs_to_definitions[0].locations[0])
'(/us/usc/t2/s60c-5/a/2/A 2013-07-18)'
```

When we pass an InboundReference to *read()*, the download client makes an *Enactment* from the most recent location where the citing provision has been enacted.

```
>>> str(client.read(refs_to_definitions[0]))
'/us/usc/t2/s4579/a/4/A (2018-05-09)'
```

If we need the *Enactment* representing the statutory text before it was moved and renumbered, we can pass one of the *CitingProvisionLocation* objects to the *Client* instead. Note that the Enactment we get this way has the same content text, but a different citation node, an earlier start date, and an earlier end date.

>>> citing_enactment_before_renumbering.end_date
datetime.date(2014, 1, 16)

1.2 Comparing Enactments

This notebook will show how legislice provides convenient functions for comparing passages of legislative text.

As explained in the *Downloading Legislation* guide, begin by creating a *Client* to download and create *Enactment* objects.

```
>>> import os
>>> from dotenv import load_dotenv
>>> from legislice.download import Client
>>> load_dotenv()
True
>>> TOKEN = os.getenv("LEGISLICE_API_TOKEN")
>>> client = Client(api_token=TOKEN)
```

1.2.1 Features of an Enactment

Now let's load the Fourteenth Amendment. We can get its effective date as a Python datetime.date object.

```
>>> fourteenth_amendment = client.read(query="/us/const/amendment/XIV")
>>> fourteenth_amendment.start_date
datetime.date(1868, 7, 28)
```

We can also view its level, which is "constitution", as opposed to "statute" or "regulation".

```
>>> fourteenth_amendment.level
<CodeLevel.CONSTITUTION: 1>
```

And we can find out the node, or place in the document tree, for the Fourteenth Amendment itself as well at its subsections.

>>> fourteenth_amendment.node
'/us/const/amendment/XIV'

>>> fourteenth_amendment.children[0].node
'/us/const/amendment/XIV/1'

We can also isolate some parts of the node path, such as the jurisdiction and code the amendment comes from.

```
>>> fourteenth_amendment.jurisdiction
'us'
```

```
>>> fourteenth_amendment.code
'const'
```

1.2.2 Selecting text

When we use the text () method, we get all the enacted text in the Fourteenth Amendment, including all its subsections.

>>> fourteenth_amendment.text

'All persons born or naturalized in the United States, and subject to the jurisdiction. -thereof, are citizens of the United States and of the State wherein they reside. No. \rightarrow State shall make or enforce any law which shall abridge the privileges or immunities. →of citizens of the United States; nor shall any State deprive any person of life, \rightarrow liberty, or property, without due process of law; nor deny to any person within its \rightarrow jurisdiction the equal protection of the laws. Representatives shall be apportioned. \rightarrow among the several States according to their respective numbers, counting the whole -number of persons in each State, excluding Indians not taxed. But when the right to. \rightarrow vote at any election for the choice of electors for President and Vice President of \rightarrow the United States, Representatives in Congress, the Executive and Judicial officers of \rightarrow a State, or the members of the Legislature thereof, is denied to any of the male -inhabitants of such State, being twenty-one years of age, and citizens of the United_ \rightarrow States, or in any way abridged, except for participation in rebellion, or other crime, \rightarrow the basis of representation therein shall be reduced in the proportion which the. -number of such male citizens shall bear to the whole number of male citizens twenty- \rightarrow one years of age in such State. No person shall be a Senator or Representative in →Congress, or elector of President and Vice President, or hold any office, civil or -military, under the United States, or under any State, who, having previously taken an →oath, as a member of Congress, or as an officer of the United States, or ^{(Sontiguesenterbergesen} \rightarrow of any State legislature, or as an executive or judicial officer of any State, to 1.2. Comparing Enactments of the United States, shall have engaged in insurrection or 9 →rebellion against the same, or given aid or comfort to the enemies thereof. But →Congress may by a vote of two-thirds of each House, remove such disability. The \rightarrow validity of the public debt of the United States, authorized by law, including debts incurred for navment of nensions and hounties for services in sunpressing insurrection

However, we might want an *Enactment* object that only represents a part of the Fourteenth Amendment that's relevant to a particular case. We can use the *select()* method to limit the text of the provision that's considered "selected". One way to do this is with a series of strings that exactly match the text we want to select. Because we're selecting only some of the text, the output of the *selected_text()* method will be different.

The *select()* method returns a new *EnactmentPassage* object, which holds both the *Enactment* and a TextPositionSet indicating which text is selected. But if we want to select additional text without clearing the existing selection, we can use the EnactmentPassage's *select_more()* method. It's okay if the selection we pass in to *select_more()* overlaps with text we've already selected.

If we need to select a passage that occurs more than once in the Enactment, we can import the TextQuoteSelector class instead of using strings. With a TextQuoteSelector, we specify not just the exact phrase we want to select, but also a prefix or suffix that makes the phrase uniquely identifiable. In this example, the text being selected is the second instance of the phrase "twenty-one years of age" in the Fourteenth Amendment.

If we happen to know the start and end indices of the passage we want, then we can use a TextPositionSelector or TextPositionSet to select it, instead of specifying the exact text.

We can also use the method *child_passages()* to get a new *EnactmentPassage* with only the subsection of the Fourteenth Amendment that interests us. The citation stored in the node attribute is now different, but the text selector still remains in place, so we can still get the same selected text.

```
>>> public_debt_provision = amendment_passage.child_passages[3]
>>> public_debt_provision.node
'/us/const/amendment/XIV/4'
>>> public_debt_provision.selected_text()
'The validity of the public debt of the United States...shall not be questioned....'
```

1.2.3 Comparing Selected Text

Next, we'll create a new *EnactmentPassage* to compare by changing the selected text of the original *Enactment* to include all the text that was selected before, plus more.

Now we can compare the text selections in these two *EnactmentPassages*. The *implies()* method checks whether the Enactment on the left has all the text of the Enactment on the right. The *means()* method checks whether they both have the same text.

>>> fourteenth_amendment.implies(public_debt_provision)
True

We can also use Python's built-in "greater than or equal" operator as an alias for the implies () method.

>>> fourteenth_amendment >= public_debt_provision
True

Notice that Legislice is able to compare these two passages even though amendment is a text selection from the entire Fourteenth Amendment, while public_debt_provision is a text selection from only section 4 of the Fourteenth Amendment. We can verify this by checking the "node" attribute on each Enactment.

>>> fourteenth_amendment.node
'/us/const/amendment/XIV'

>>> public_debt_provision.node
'/us/const/amendment/XIV/4'

To determine whether two Enactments have the same text (and neither has any more than the other), use the *means()* method. Here's how we can check that the Fifth Amendment doesn't have identical text to the first section of the Fourteenth Amendment.

```
>>> fourteenth_amendment_section_1 = client.read(query="/us/const/amendment/XIV/1")
>>> fifth_amendment.means(fourteenth_amendment_section_1)
False
```

However, the Fifth Amendment and the first section of the Fourteenth Amendment both happen to contain the phrase "life, liberty, or property, without due process of law". If we select that same passage from both provisions, then we can use the *means()* method to verify that both text selections are identical.

```
>>> phrase = "life, liberty, or property, without due process of law"
>>> due_process_14 = fourteenth_amendment_section_1.select(phrase)
>>> due_process_5 = fifth_amendment.select(phrase)
>>> due_process_14.means(due_process_5)
True
```

There are many situations in real legal analysis where it's helpful to know if identical text has been enacted at different citations. It could mean that the identical section has been renumbered, or it could mean that a judicial interpretation of one Enactment is also relevant to the other Enactment. Legislice's *implies()* and *means()* methods can help to automate that analysis.

Since >= is an alias for *implies(*), we might expect to be able to use == as an alias for *means(*). Currently we can't do that, because overriding the equals function could interfere with Python's ability to determine what objects are identical, and could cause bugs that would be difficult to diagnose. However, we can use > as an alias that returns True only if *implies(*) would return True while *means(*) would return False.

1.2.4 Combining Enactment Passages

When we have two *EnactmentPassages* and either they are at the same node or one is a descendant of the other, we can combine them into a new *EnactmentPassages* using the addition sign. Here's an example from a copyright statute in the United States Code. The example shows that we can load section /us/usc/t17/s103, select some text from subsection b of that provision, and then add it to a separate Enactment representing the entirety of subsection /us/usc/t17/s103/a. Legislice combines the selected text from subsection a and subsection b in the correct order.

>>> combined_passage = s103_passage + s103a >>> combined_passage.selected_text()

'The subject matter of copyright as specified by section 102 includes compilations and --derivative works, but protection for a work employing preexisting material in which --copyright subsists does not extend to any part of the work in which such material has --been used unlawfully....The copyright in such work is independent of...any copyright --protection in the preexisting material.'

1.2.5 Enactment Groups

When we want to work with groups of Enactments that may or may not be nested inside one another, we can put them together in an *EnactmentGroup*. When we create a new EnactmentGroup or ___add___() two EnactmentGroups together, any overlapping *Enactments* inside will be combined into a single Enactment.

In this example, we create two EnactmentGroups called left and right, each containing two Enactments, and add them together. Because one of the Enactments in left overlaps with one of the Enactments in right, when we add left and right together those two Enactments will be combined into one. Thus the resulting EnactmentGroup will contain three Enactments instead of four.

```
>>> from legislice import EnactmentGroup
>>> first = client.read(query="/us/const/amendment/I")
>>> establishment_clause=first.select("Congress shall make no law respecting an_
→establishment of religion")
>>> speech_clause = first.select(["Congress shall make no law", "abridging the freedom_
\leftrightarrow of speech"])
>>> second = client.read(query="/us/const/amendment/II")
>>> arms_clause = second.select("the right of the people to keep and bear arms, shall_
\rightarrownot be infringed.")
>>> third = client.read(query="/us/const/amendment/III")
>>> left = EnactmentGroup(passages=[establishment_clause, arms_clause])
>>> right = EnactmentGroup(passages=[third, speech_clause])
>>> combined = left + right
>>> print(combined)
the group of Enactments:
  "Congress shall make no law respecting an establishment of religion...abridging the
→freedom of speech..." (/us/const/amendment/I 1791-12-15)
  "...the right of the people to keep and bear arms, shall not be infringed." (/us/const/
\rightarrow amendment/II 1791-12-15)
  "No soldier shall, in time of peace be quartered in any house, without the consent of
-- the Owner, nor in time of war, but in a manner to be prescribed by law." (/us/const/
→amendment/III 1791-12-15)
>>> len(combined)
3
```

1.2.6 Converting Enactments to JSON

When we want a representation of a legislative passage that's precise, machine-readable, and easy to share over the internet, we can use Legislice's JSON schema. Here's how to convert the Enactment object called combined_enactment, which was created in the example above, to JSON.

As explained in the section above, this JSON represents a selection of three nonconsecutive passages from the most recent version of section 103 of Title 17 of the United States Code. The schema's json() method returns a JSON string, while the dict() method returns a Python dictionary.

```
>>> combined.passages[0].json()
```

```
'{"enactment": {"node": "/us/const/amendment/I", "start_date": "1791-12-15", "heading":

→ "AMENDMENT I.", "text_version": {"content": "Congress shall make no law respecting an_

→ establishment of religion, or prohibiting the free exercise thereof; or abridging the_

→ freedom of speech, or of the press; or the right of the people peaceably to assemble,_

→ and to petition the Government for a redress of grievances.", "url": "https://

→ authorityspoke.com/api/v1/textversions/735703/", "id": 735703}, "end_date": null,

→ "first_published": "1788-06-21", "earliest_in_db": "1788-06-21", "anchors": []

→ "citations": [], "name": "", "children": []}, "selection": {"positions": [{"start": 0,"

→ "end": 66}, {"start": 113, "end": 144}], "quotes": []}'
```

1.2.7 Formatting Citations (Experimental)

Legislice has preliminary support for serializing citations for Enactment objects based on Citation Style Language JSON. The goal of this feature is to support compatibility with Jurism. Please open an issue in the Legislice repo if you have suggestions for how this feature should develop to support your use case.

This CSL-JSON format currently only identifies the cited provision down to the section level. Calling the *as_citation()* method on a subsection or deeper nested provision will produce the same citation data as its parent section.

CHAPTER

TWO

DEVELOPMENT UPDATES

2.1 Reporting Bugs and Issues

Your feedback is very valuable. If you discover a bug, if Legislice isn't behaving as expected, or if you want to suggest a new feature, please comment or open an issue on Legislice's GitHub issue tracker. For other comments please use the Twitter contact information below.

If you want to submit a pull request for either Legislice or AuthoritySpoke, please also submit the AuthoritySpoke contributor license agreement.

2.2 Current Updates

2.2.1 GitHub

You can find open issues and current changes to Legislice through its GitHub repo.

2.2.2 Twitter

On Twitter, you can follow @authorityspoke or @mcareyaus for project updates.

2.2.3 Changelog

0.7.0 (2021-10-21)

- replace Marshmallow schemas with Pydantic models
- add types module for type annotations of TypedDict API responses
- add MANIFEST.in (to include readme.md on Python Package Index)

0.6.0 (2021-09-20)

- add EnactmentPassage class
- select_from_text_positions_without_nesting doesn't accept RangeSet
- Enactment.limit_selection.start must be an int
- no separate LinkedEnactment class for Enactments with URL links as children
- remove BaseEnactment parent class

0.5.2 (2021-05-20)

- sort EnactmentGroups by level
- add California to KNOWN_CODES

0.5.1 (2021-05-08)

- separate schemas for YAML and JSON input
- flag determines if read_from_json uses text expansion
- change InboundReference to dataclass

0.5.0 (2021-03-26)

- add EnactmentGroup class
- drop Python 3.7 support
- import Citation and Client at top level of library
- Client.fetch_cross_reference no longer will ignore "date" param
- EnactmentGroup init method can accept None as "enactments" param
- remove "text expansion" module and functions
- remove ExpandableSchema class

0.4.1 (2020-12-31)

• fix bug: Client made API request requiring 301 redirect

0.4.0 (2020-12-29)

- add Citation class
- add Citation Style Language JSON serializer methods
- · remove mock Clients by migrating tests to pytest-vcr

0.3.1 (2020-12-12)

- order fields in serialized Enactment JSON output format for readability
- remove include_start and include_end from serialized Enactment JSON output
- fix bug: Enactment.select_all created zero length selectors

0.3.0 (2020-11-17)

- add CrossReference class as memo of cited Enactment to download
- add CitingProvisionLocation as memo of citing Enactment to download
- add cross_references attr to Enactment model
- add citations_to method to Client class
- · EnactmentSchema's content field is moved to a new nested model called TextVersionSchema
- · add ability to pass CitingProvisionLocation to Client.read
- add ability to pass InboundReference to Client.read

0.2.0 (2020-08-30)

- don't add ellipsis to selected_text for node with no text
- accept list of strings to generate anchorpoint TextPositionSet
- combine selected text passages within 3 characters of each other

0.1.1 (2020-08-23)

• initial release

CHAPTER

THREE

API DOCUMENTATION

3.1 Download Client

Downloader for legislative text.

citations_to(target)

Load an InboundReference object for each provision citing the target USLM provision URI.

Parameters target (Union[str, Enactment, CrossReference]) – a string URI for the cited node, an Enactment at the cited node, or a CrossReference to the cited node

Return type List[InboundReference]

Returns a list of InboundReferences to the cited node

fetch(query, date=")

Download legislative provision from string identifier or cross-reference.

Parameters

- **query** (Union[str, *CitingProvisionLocation*, *CrossReference*, *InboundReference*]) A cross-reference to the desired legislative provision, or a path to the desired legislation section using the United States Legislation Markup tree-like citation format.
- **date** (Union[date, str]) The date of the desired version of the provision to be downloaded. This is not needed if a *CrossReference* passed to the query param specifies a date. If no date is provided, the API will use the most recent date.

Return type RawEnactment

fetch_citations_to(target)

Query API for citations to a given target node, withoout loading them as InboundCitations.

Parameters target (Union[str, *Enactment*, *CrossReference*]) – a string URI for the cited node, an Enactment at the cited node, or a CrossReference to the cited node

Return type List[FetchedCitationDict]

Returns a list of dicts representing citations to the cited node

fetch_citing_provision(query)

Download legislative provision as Enactment from CitingProvisionLocation.

CitingProvisionLocations are found in the *locations* attribute of the *InboundReference* objects obtained when using the *citations_to* method.

Return type RawEnactment

fetch_cross_reference(query, date=")

Download legislative provision from cross-reference.

Parameters

- **query** (*CrossReference*) A cross-reference to the desired legislative provision. Found by calling the *cross_references()* method on an *Enactment* that contains one or more citations to other provisions.
- **date** (Union[date, str]) The date of the desired version of the provision to be downloaded. This is not needed if the *CrossReference* passed to the query param specifies a date. If no date is provided, the API will use the most recent date.

Return type RawEnactment

fetch_db_coverage(code_uri)

Document date range of provisions of a code of laws available in API database.

Return type PublicationCoverage

fetch_inbound_reference(query)

Download legislative provision from InboundReference.

Parameters query (*InboundReference*) – An InboundReference identifying a provision containing a citation.

Return type RawEnactment

Returns An Enactment representing the provision containing the citation (not the cited provision).

If the InboundReference has been enacted more than once, the latest one will be chosen.

fetch_uri(query, date=")

Fetch data about legislation at specified path and date from Client's assigned API root.

Parameters

- **query** (str) A path to the desired legislation section using the United States Legislation Markup tree-like citation format. Examples: "/us/const/amendment/IV", "/us/usc/t17/s103"
- **date** (Union[date, str]) A date when the desired version of the legislation was in effect. This does not need to be the "effective date" or the first date when the version was in effect. However, if you select a date when two versions of the provision were in effect at the same time, you will be given the version that became effective later.

Return type RawEnactment

get_db_coverage(uri)

Add data about the API's coverage date range to the Enactment to be loaded.

As a side effect, changes the Client's "coverage" attribute.

Parameters uri (str) – identifier for the Enactment to be created

Return type str

Returns identifier for the Code of the Enactment to be created

read(query, date=")

Fetch data from Client's assigned API root and builds Enactment or LinkedEnactment.

All text is selected by default.

Parameters

- **path** A path to the desired legislation section using the United States Legislation Markup tree-like citation format. Examples: "/us/const/amendment/IV", "/us/usc/t17/s103"
- date (Union[date, str]) A date when the desired version of the legislation was in effect. This does not need to be the "effective date" or the first date when the version was in effect. However, if you select a date when two versions of the provision were in effect at the same time, you will be given the version that became effective later.

Return type Enactment

read_from_json(data, use_text_expansion=True)

Create a new Enactment object using imported JSON data.

If fields are missing from the JSON, they will be fetched using the API key.

Return type Enactment

read_passage_from_json(data)

Create a new EnactmentPassage object using imported JSON data.

If fields are missing from the JSON, they will be fetched using the API key.

Return type EnactmentPassage

update_data_from_api_if_needed(data)

Update data from API with data from API coverage.

Parameters data (*RawEnactment*) – a dict representing the data from the API

Return type RawEnactment

Returns a dict representing the data from the API with updated data from API coverage

update_enactment_from_api(data)

Use API to fill in missing fields in a dict representing an Enactment.

Useful when the dict has missing data because it was created by a user.

Return type *RawEnactment*

update_entries_in_enactment_index(enactment_index)

Fill in missing fields in every entry in an EnactmentIndex.

Return type Mapping[str, RawEnactmentPassage]

uri_from_query(target)

Get a URI for the target object.

Return type str

url_from_enactment_path(*path*, *date=''*) Generate URL for API call for specified USLM path and date.

Return type str

legislice.download.normalize_path(path)

Make sure path starts but does not end with a slash.

Return type str

3.2 Enactments

class legislice.enactments.Enactment(**data)

Base class for Enactments.

Whether connected to subnodes by linking, or nesting.

Parameters

- node identifier for the site where the provision is codified
- **heading** full heading of the provision
- text_version full text content at this node, even if not all of it is cited
- **start_date** date when the text was enacted at the cited location
- **known_revision_date** whether the "start_date" field is known to be a date when the provision was revised in the code where it was publised. If False, then the Enactment refers to a time range when the text was codified, without asserting that the Enactment was not codified at earlier dates. This field is useful when working from incomplete legislative records.
- end_date date when the text was removed from the cited location
- first_published date when this Enactment's code was first published.
- **earliest_in_db** date of the earliest version of this Enactment in the database. Used to determine whether the start_date of the Enactment is a date when the Enactment was amended or first published.
- **anchors** a list of selectors representing the part of some other document (e.g. an Opinion) that references the Enactment. Unlike the selection field, it doesn't reference part of the Enactment itself. For use as a temporary place to store the anchors until they can be moved over to the citing document.
- **name** a user-assigned label for the object

as_citation()

Create Citation Style Language markup for the Enactment.

Return type Citation

property code

Get "code" part of node identifier.

property content: str

Get text for this version of the Enactment.

Return type str

convert_quotes_to_position(quotes)

Convert quote selector to the corresponding position selector for this Enactment.

Return type TextPositionSet

convert_selection_to_set(selection)

Create a TextPositionSet from a different selection method.

Return type TextPositionSet

cross_references()

Return all cross-references from this node and subnodes.

Return type List[CrossReference]

csl_json()

Serialize a citation to this provision in Citation Style Language JSON.

Experimental feature. This CSL-JSON format currently only identifies the cited provision down to the section level. A citation to a subsection or deeper nested provision will be the same as a citation to its parent section.

See https://citeproc-js.readthedocs.io/en/latest/csl-json/markup.html for a guide to this CSL-JSON format.

Return type str

get_identifier_part(index)

Get a part of the split node identifier, by number.

Return type Optional[str]

get_string(selection)

Use text selector to get corresponding string from Enactment.

Return type str

implies(other)

Test whether self has all the text passages of other.

Return type bool

property is_federal

Check if self is from a federal jurisdiction.

property jurisdiction

Get "sovereign" part of node identifier.

property known_revision_date: bool

Determine if Enactment's start_date reflects its last revision date.

If not, then the *start_date* merely reflects the earliest date that versions of the *Enactment*'s code exist in the database.

Return type bool

property level: *legislice.citations.CodeLevel* Get level of code for this Enactment, e.g. "statute" or "regulation".

Return type CodeLevel

limit_selection(selection, start=0, end=None)

Limit selection to the range defined by start and end points.

Return type TextPositionSet

limit_selection_to_current_node(selection)

Limit selection to the current node.

Return type TextPositionSet

make_selection(selection=True, start=0, end=None)
Make a TextPositionSet for specified text in this Enactment.

Return type TextPositionSet

make_selection_of_all_text()

Return a TextPositionSet of all text in this Enactment.

Return type TextPositionSet

make_selection_of_this_node()

Return a TextPositionSet of the text at this node, not child nodes.

Return type TextPositionSet

classmethod make_text_version_from_str(value)

Allow content to be used to populate text_version.

Return type Optional[TextVersion]

means(other)

Determine if self and other have identical text.

Return type bool

property nested_children

Get nested children attribute.

property padded_length

Get length of self's content plus one character for space before next section.

raise_error_for_extra_selector(selection)

Raise an error if any passed selectors begin after the end of the text passage.

Return type None

rangedict()

Return a RangeDict matching text spans to Enactment attributes.

Return type RangeDict

property section

Get "section" part of node identifier.

select(selection=True, start=0, end=None)

Select text from Enactment.

Return type EnactmentPassage

select_all()

Return a passage for this Enactment, including all subnodes.

Return type EnactmentPassage

property sovereign

Get "sovereign" part of node identifier.

property span_length: int

Return the length of the span of this Enactment.

Return type int

property text

Get all text including subnodes, regardless of which text is "selected".

text_sequence(include_nones=True)

Get a sequence of text passages for this provision and its subnodes.

Return type TextSequence

property title

Get "title" part of node identifier.

tree_selection()

Return set of selectors for selected text in this provision and its children.

Return type TextPositionSet

class legislice.enactments.EnactmentPassage(**data)

An Enactment with selectors indicating which text is being referenced.

as_quotes()

Return quote selectors for the selected text.

Return type List[TextQuoteSelector]

property child_passages: List[legislice.enactments.EnactmentPassage] Return a list of EnactmentPassages for this Enactment's children.

Return type List[EnactmentPassage]

clear_selection()

Deselect any Enactment text, including in child nodes.

Return type None

property code

Get "code" part of node identifier.

property end_date

Get the earliest end date of any provision version included in the passage.

implies(other)

Test whether self has all the text passages of other.

Return type bool

property is_federal

Check if self is from a federal jurisdiction.

property jurisdiction

Get "sovereign" part of node identifier.

property level: legislice.citations.CodeLevel

Get level of code for this Enactment, e.g. "statute" or "regulation".

Return type CodeLevel

limit_selection(start=0, end=None)

Limit selection to the range defined by start and end points.

Return type None

means(other)

Find whether meaning of self is equivalent to that of other.

Self must be neither broader nor narrower than other to return True.

Return type bool

Returns whether self and other represent the same text issued by the same sovereign in the same level of *Enactment*.

property node

Get the node that this Enactment is from.

property section

Get "section" part of node identifier.

select(selection=True, start=0, end=None)
Select text from Enactment.

Return type None

select_all()

Select all text of Enactment.

Return type None

select_more(selection) Select text, in addition to any previous selection.

Return type None

select_more_text_at_current_node(added_selection)

Select more text at this Enactment's node, not in child nodes.

Return type None

select_more_text_from_changed_version(other)

Select more text from a different text version at the same citation path.

Parameters other (*EnactmentPassage*) – An *Enactment* representing different text enacted at a different time, at the same *node* (or USLM path citation) as self. This Element's node attribute must be the same string as self's node attribute. It's not sufficient for *other* to have an Enactment listed in its _children attribute with the same node attribute, or for *other* to have the same node attribute as an ancestor of self.

Return type None

select_more_text_in_current_branch(added_selection)

Select more text within this Enactment's tree_selection, including child nodes.

Return type None

selected_text()

Return this provision's text that is within the ranges described by self.selection.

Based on creating an anchorpoint.textsequences.TextSequence from this Enactment's text content and the ranges in its selection attribute.

Return type str

property sovereign

Get "sovereign" part of node identifier.

property start_date

Get the latest start date of any provision version included in the passage.

property text

Get all text including subnodes, regardless of which text is "selected".

text_sequence(include_nones=True)

List the phrases in the Enactment selected by TextPositionSelectors.

Parameters include_nones (bool) – Whether the list of phrases should include *None* to indicate a block of unselected text

Return type TextSequence

property title

Get "title" part of node identifier.

class legislice.enactments.CrossReference(**data)

A legislative provision's citation to another provision.

Parameters

- **target_uri** the path to the target provision from the document root.
- target_url the URL to fetch the target provision from an API.
- **reference_text** The text in the citing provision that represents the cross-reference. Generally, this text identifies the target provision.
- target_node an identifier for the target URI in the API.

class legislice.enactments.**InboundReference**(**data)

A memo that a TextVersion has a citation to a specified target provision.

latest_location()

Get most recent location where the citing text has been enacted.

Return type CitingProvisionLocation

classmethod search_citations_for_reference_text(values)

Get reference_text field from nested "citations" model.

Return type InboundReferenceDict

class legislice.enactments.**CitingProvisionLocation**(***data*) Memo indicating where an Enactment can be downloaded.

Parameters

- **node** location of the citing provision in a legislative code
- **start_date** start date of the citing version of the provision
- heading heading text for the citing provision

legislice.enactments.consolidate_enactments(enactments)

Consolidate any overlapping *Enactments* in a list.

Parameters enactments (Sequence[Union[Enactment, EnactmentPassage]]) – a list of Enactments that may include overlapping legislative text within the same section

Return type List[*EnactmentPassage*]

Returns a list of Enactments without overlapping text

3.3 Citations

```
class legislice.citations.CodeLevel(value)
```

Identifier for the type of legislative code.

```
class legislice.citations.Citation(**data)
```

A citation style for referring to an *Enactment* in written text.

Intended for use with Citation Style Language (CSL).

static csl_date_format(revision_date)
Convert event date to Citation Style Language format.

Return type Dict[str, List[List[Union[str, int]]]]

csl_dict()

Return citation as a Citation Style Language object.

Return type Dict[str, Union[str, int, List[List[Union[str, int]]]]]

```
csl_json()
```

Return citation as Citation Style Language JSON.

Return type str

```
classmethod validate_code(obj)
Standardize the code name for the styled citation.
```

classmethod validate_section(*value*) Make sure the "section" part of the styled citation starts with the right abbreviation.

```
classmethod validate_volume(value)
Make sure the "title" identifier for the styled citation doesn't start with "t".
```

legislice.citations.identify_code(jurisdiction, code) Find code name and type based on USLM citation parts.

Return type Tuple[str, CodeLevel]

3.4 Enactment Groups

class legislice.groups.EnactmentGroup(**data)

Group of Enactments with comparison methods.

__add__(*other*) Combine two EnactmentGroups, consolidating any duplicate Enactments.

Return type EnactmentGroup

__ge__(other)

Test whether self implies other and self != other.

Return type bool

__gt__(*other*)

Test whether self implies other and self != other.

Return type bool

__hash__ = None

__iter__()

so dict(model) works

__repr__()

Return repr(self).

Return type str

```
__str__()
```

Return str(self).

classmethod consolidate_passages(obj)

Consolidate overlapping EnactmentPassages into fewer objects.

Return type List[EnactmentPassage]

implies(other)

Determine whether self includes all the text of another Enactment or EnactmentGroup.

Return type bool

```
classmethod sort_passages(obj)
```

Sort federal to state, constitutional to statute to regulation, and then alphabetically.

Return type List[EnactmentPassage]

3.5 Types

TypedDict data structures used for communicating between an API and Legislice.

class legislice.types.**CitingProvisionLocationDict**(**args*, ***kwargs*) Location of provision citing to the provision that is the subject of the API call.

Can occur as part of an FetchedCitationDict created by a call to the *citations_to* API endpoint.

- **class** legislice.types.**FetchedCitationDict**(**args*, ***kwargs*) Information about a statute that cites the subject of the API call.

Created by a call to the *citations_to* API endpoint.

Created by finding the relevant citation in a FetchedCitationDict, and then pulling the *reference* field from within the citation.

- **class** legislice.types.**PublicationCoverage**(**args*, ***kwargs*) Available dates for a publication covered in an API's database.
- class legislice.types.RawEnactment(*args, **kwargs)
 Data for creating an Enactment.
- **class** legislice.types.**RawEnactmentPassage**(**args*, ***kwargs*) Data for creating an EnactmentPassage.
- class legislice.types.RawPositionSelector(*args, **kwargs)
 Data for a TextPositionSelector.
- class legislice.types.RawQuoteSelector(*args, **kwargs)
 Data for a TextQuoteSelector.
- class legislice.types.RawSelectorSet(*args, **kwargs)
 Data for a set of Anchorpoint selectors.

Used in Legislice to specify the cited part of an Enactment.

CHAPTER

FOUR

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