iatikit Documentation

Andy Lulham

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Contents

iatikit is a toolkit for using IATI data. It includes a query language wrapper around XPath, to make dealing with disparate IATI versions easier.

The name was inspired by Open Contracting's ocdskit.

CHAPTER 1

Contents:

1.1 Getting started

1.1.1 Installation

iatikit is tested for pythons 3.6, 3.7 and 3.8.

You can install iatikit using `pip`:

```
pip install iatikit
```

If you're on Windows, we recommend using Jupyter Notebook, which you can get by installing Anaconda.

Once Jupyter is installed, you can run the following inside a Notebook to install iatikit:

```
import sys

!{sys.executable} -m pip install --upgrade iatikit
```

1.1.2 Setup

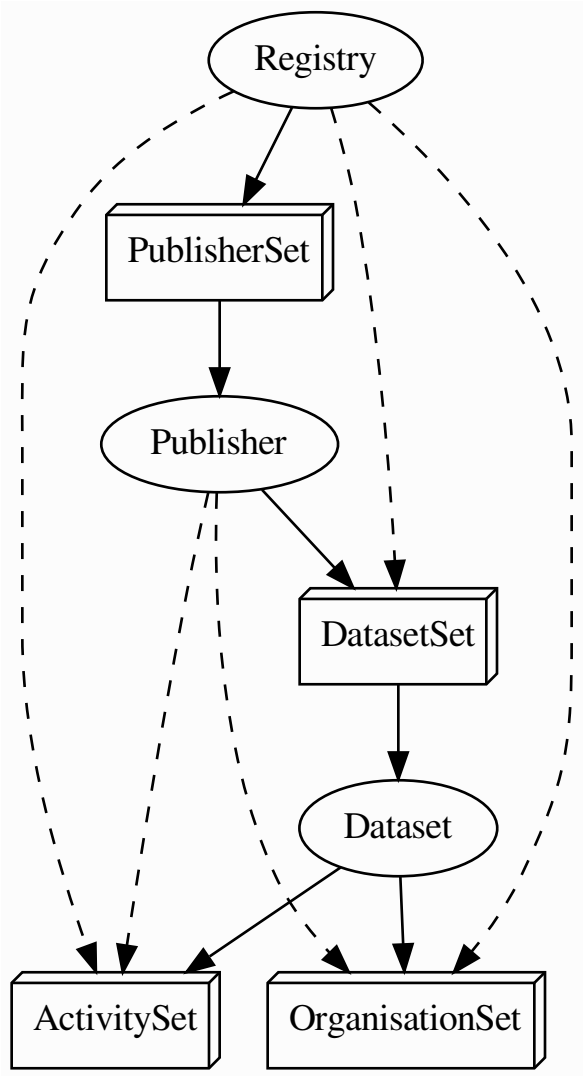
Once iatikit is installed, you'll need to fetch a recent version of all IATI data from the registry, as well as the latest codelists and schemas.

```
import iatikit

# download all schemas and codelists
iatikit.download.standard()

# download all XML in the registry
iatikit.download.data()
```

1.2 Usage

1.2.1 Data structure

iatikit uses a model that reflects IATI architecture.



The solid arrows show the main links between data types. The dotted arrows show additional links that iatikit provides.

The *registry* contains a list of *publishers*. Each *publisher* has zero or more *datasets*. Each *dataset* contains zero or more *activities*, or zero or more *organisations*.

1.2.2 Data operations

To construct a new *Registry* object, use:

```
import iatikit

registry = iatikit.data()
```

If no data can be found, a `NoDataError` is raised. If data is found to be "stale" (i.e. more than 7 days old) a warning is shown.

1.3 Examples

1.3.1 Count datasets and publishers on the registry

```
import iatikit

registry = iatikit.data()

publishers = registry.publishers
total_publishers = len(publishers)
total_datasets = sum([len(pub.datasets) for pub in publishers])
print('There are {:,} publishers and {:,} datasets on the registry'.format(
    total_publishers, total_datasets))

# There are 855 publishers and 6,682 datasets on the registry
```

1.3.2 Count datasets for a publisher

```
import iatikit

registry = iatikit.data()

usaid = registry.publishers.find(name='usaid')
print('USAID has {:,} datasets.'.format(len(usaid.datasets)))

# USAID has 177 datasets.
```

1.3.3 Find an activity by its identifier

```
import iatikit

registry = iatikit.data()
iati_identifier = 'GB-1-201724-151'

dfid = registry.publishers.find(name='dfid')
act = dfid.activities.where(
    iati_identifier=iati_identifier
).first()
```

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```
print(act)

# <Activity (GB-1-201724-151)>
```

1.3.4 Find activities that include an element

```
import iatikit

registry = iatikit.data()

mcc = registry.publishers.find(name='millenniumchallenge')
total_with_locations = len(mcc.activities.where(location__exists=True))
total_activities = len(mcc.activities)
print('{:,} of {:,} MCC activities have location data.'.format(
    total_with_locations, total_activities))

# 279 of 3,038 MCC activities have location data.
```

1.3.5 List all publishers by date of first publication

```
from datetime import datetime
import iatikit

registry = iatikit.data()

publishers = sorted(
    [(min([d.metadata.get('metadata_created')
           for d in p.datasets]
          ), p.metadata.get('title'))
     for p in registry.publishers])

for idx, tup in enumerate(publishers):
    print('{order}: {name} ({date})'.format(
        order=(idx + 1),
        name=tup[1],
        date=datetime.strptime(tup[0], '%Y-%m-%dT%H:%M:%S.%f').date()
    ))

# 1: UK - Department for International Development (DFID) (2011-01-29)
# 2: The William and Flora Hewlett Foundation (2011-03-31)
# 3: The World Bank (2011-05-14)
# ...
```

1.3.6 More complicated activity filters

```
import iatikit

registry = iatikit.data()

dfid = registry.publishers.find(name='dfid')
```

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```
sector_category = iatikit.sector(311, 2)  # Agriculture

ag_acts = dfid.activities.where(
    actual_start__lte='2017-12-31',  # started before 2018
    actual_end__gte='2017-01-01',  # ended after 2016
    sector__in=sector_category,
)
print('DFID had {:,} agricultural activities running during 2017.'.format(
    len(ag_acts)))

# DFID had 180 agricultural activities running during 2017.
```

1.4 Reference

1.4.1 iatikit

iatikit.**data**(*path=None*)

Helper function for constructing a Registry object.

1.4.2 Registry

class iatikit.data.registry.**Registry**(*path=None*)

Class representing the IATI registry.

activities

Return an iterator of all IATI activities on the registry.

datasets

Return an iterator of all IATI datasets on the registry.

last_updated

Return the datetime when the local cache was last updated.

organisations

Return an iterator of all IATI organisations on the registry.

publishers

Return an iterator of all publishers on the registry.

1.4.3 PublisherSet

class iatikit.data.publisher.**PublisherSet**(*data_path*, *metadata_path*, ***kwargs*)

Class representing a grouping of `Publisher` objects.

Objects in this grouping can be filtered and iterated over. Queries are only constructed and run when needed, so they can be efficient.

all()

Return a list of all items in this set.

count()

The number of items in this set.

Equivalent to `len(self)`.

filter(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

Alias of `where(**kwargs)`.

find(***kwargs*)
Return the first matching item from the set, according to the filters provided in `kwargs`.

If no matching item is found, an `IndexError` is raised.

first()
Return the first item in this set.

Raises an `IndexError` if the set contains zero items.

Equivalent to `self[0]`.

get(*item*, *default=None*)
Return an item from the set, according to the primary key.

If no matching item is found, `default` is returned.

where(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

1.4.4 Publisher

class iatikit.data.publisher.**Publisher**(*data_path*, *metadata_path*, *metadata_filepath*)
Class representing an IATI publisher.

activities
Return an iterator of all activities for this publisher.

datasets
Return an iterator of all datasets for this publisher.

metadata
Return a dictionary of registry metadata for this publisher.

name
Return the "registry name" or "shortname" of this publisher, derived from the filepath.

organisations
Return an iterator of all organisations for this publisher.

show()
Open a new browser tab to the iatiregistry.org page for this publisher.

1.4.5 DatasetSet

class iatikit.data.dataset.**DatasetSet**(*data_path*, *metadata_path*, ***kwargs*)
Class representing a grouping of `Dataset` objects.

Objects in this grouping can be filtered and iterated over. Queries are only constructed and run when needed, so they can be efficient.

all()
Return a list of all items in this set.

count()
The number of items in this set.

Equivalent to `len(self)`.

filter(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

Alias of `where(**kwargs)`.

find(***kwargs*)
Return the first matching item from the set, according to the filters provided in `kwargs`.

If no matching item is found, an `IndexError` is raised.

first()
Return the first item in this set.

Raises an `IndexError` if the set contains zero items.

Equivalent to `self[0]`.

get(*item*, *default=None*)
Return an item from the set, according to the primary key.

If no matching item is found, `default` is returned.

where(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

1.4.6 Dataset

class iatikit.data.dataset.**Dataset**(*data_path*, *metadata_path=None*)
Class representing an IATI dataset.

activities
Return an iterator of all activities in this dataset.

etree
Return the XML of this dataset, as an lxml element tree.

filetype
Return the filetype according to the metadata (i.e. "activity" or "organisation").

If it can't be found in the metadata, revert to using the XML root node.

Returns None if the filetype can't be determined.

metadata
Return a dictionary of registry metadata for this dataset.

name
Return the name of this dataset, derived from the filename.

organisations
Return an iterator of all organisations in this dataset.

raw_xml
Return the raw, unparsed XML of this dataset, as a byte-string.

root
Return the name of the XML root node.

schema
Get the XSD Schema for this dataset.

show()
Open a new browser tab to the iatiregistry.org page for this dataset.

validate_codelists()
Validate dataset against the relevant IATI codelists.

validate_iati()
Validate dataset against the relevant IATI schema.

validate_xml()
Check whether the XML in this dataset can be parsed.

version
Return the IATI version according to the XML root node.

Return "1.01" if the version can't be determined.

xml
Return the parsed XML of this dataset, as a byte-string.

1.4.7 ActivitySet

class iatikit.data.activity.**ActivitySet**(*datasets*, ***kwargs*)
Class representing a grouping of `Activity` objects.

Objects in this grouping can be filtered and iterated over. Queries are only constructed and run when needed, so they can be efficient.

all()
Return a list of all items in this set.

count()
The number of items in this set.

Equivalent to `len(self)`.

filter(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

Alias of `where(**kwargs)`.

find(***kwargs*)
Return the first matching item from the set, according to the filters provided in `kwargs`.

If no matching item is found, an `IndexError` is raised.

first()
Return the first item in this set.

Raises an `IndexError` if the set contains zero items.

Equivalent to `self[0]`.

get(*item*, *default=None*)
Return an item from the set, according to the primary key.

If no matching item is found, `default` is returned.

where(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

1.4.8 Activity

class iatikit.data.activity.**Activity**(*etree*, *dataset=None*, *schema=None*)
Class representing an IATI activity.

actual_end
Return the actual end date for this activity, as a python `date`.

actual_start
Return the actual start date for this activity, as a python `date`.

description
Return a list of descriptions for this activity.

end
Return the actual end date for this activity, if present. Otherwise, return the planned end.

humanitarian
Return True if the humanitarian flag is set for this activity.

iati_identifier
Return the iati-identifier for this activity, or `None` if it isn't provided.

id
Alias of `iati_identifier`.

location
Return a list of locations for this activity.

planned_end
Return the planned end date for this activity, as a python `date`.

planned_start
Return the planned start date for this activity, as a python `date`.

sector
Return a list of sectors for this activity.

show()
Open a new browser tab to the d-portal.org page for this dataset.

start
Return the actual start date for this activity, if present. Otherwise, return the planned start.

title
Return a list of titles for this activity.

xml
Return the raw XML of this activity, as a byte-string.

1.4.9 OrganisationSet

class iatikit.data.organisation.**OrganisationSet**(*datasets*, ***kwargs*)
Class representing a grouping of `Organisation` objects.

Objects in this grouping can be filtered and iterated over. Queries are only constructed and run when needed, so they can be efficient.

all()
Return a list of all items in this set.

count()
The number of items in this set.

Equivalent to `len(self)`.

filter(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

Alias of `where(**kwargs)`.

find(***kwargs*)
Return the first matching item from the set, according to the filters provided in `kwargs`.

If no matching item is found, an `IndexError` is raised.

first()
Return the first item in this set.

Raises an `IndexError` if the set contains zero items.

Equivalent to `self[0]`.

get(*item*, *default=None*)
Return an item from the set, according to the primary key.

If no matching item is found, `default` is returned.

where(***kwargs*)
Return a new set, with the filters provided in `**kwargs`.

1.4.10 Organisation

class iatikit.data.organisation.**Organisation**(*etree*, *dataset=None*, *schema=None*)
Class representing an IATI organisation.

id
Alias of `org_identifier`.

org_identifier
Return the org-identifier for this organisation, or `None` if it isn't provided.

show()
Open a new browser tab to the d-portal.org page for this organisation.

xml
Return the raw XML of this organisation, as a byte-string.

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