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Unofficial Python API client for Notion.so

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jamalex Merge branch 'master' of github.com:jamalex/notion-py Latest commit `56b7a90` on 4 Jan

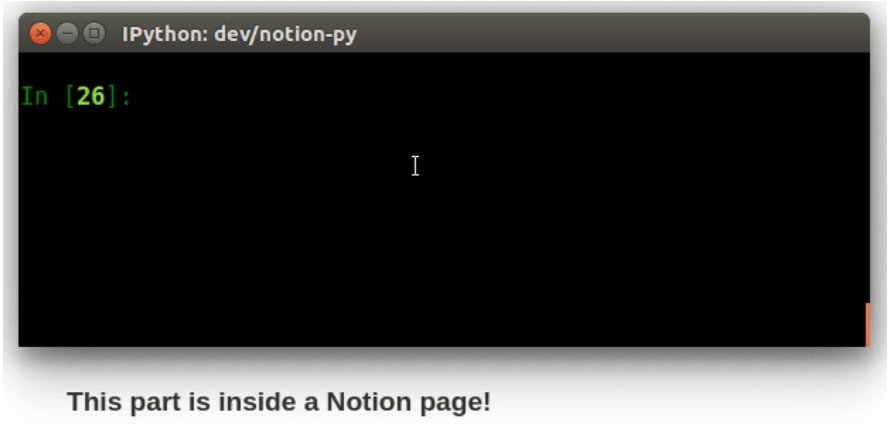
notion	Disable caching and monitoring by default.	4 months ago
.gitignore	gitignore	8 months ago
LICENSE	Packaging for PyPI as 0.0.2	17 months ago
MANIFEST.in	Fix packaging and make Python3-compliant (removing unused websockets)	17 months ago
Makefile	Bump version	17 months ago
README.md	Update README.md	4 months ago
ezgif-3-a935fdcb7415.gif	Add files via upload	15 months ago
requirements.txt	Added "NotionDate" object, some caching, quick fixes, and version bump	16 months ago
run_smoke_test.py	Run black.	8 months ago
setup.py	Bump to version 0.0.25	4 months ago

README.md

notion-py

Unofficial Python 3 client for Notion.so API v3.

- Object-oriented interface (mapping database tables to Python classes/attributes)
- Automatic conversion between internal Notion formats and appropriate Python objects
- Local cache of data in a unified data store *(Note: disk cache now disabled by default; to enable, add `enable_caching=True` when initializing `NotionClient`)*
- Real-time reactive two-way data binding (changing Python object -> live updating of Notion UI, and vice-versa) *(Note: Notion->Python automatic updating is currently broken and hence disabled by default; call `my_block.refresh()` to update, in the meantime, while monitoring is being fixed)*
- Callback system for responding to changes in Notion (e.g. for triggering actions, updating another API, etc)



Read more about Notion and Notion-py on Jamie's blog

Usage

Quickstart

Note: the latest version of **notion-py** requires Python 3.5 or greater.

```
pip install notion
```

```
from notion.client import NotionClient

# Obtain the `token_v2` value by inspecting your browser cookies on a logged-in session on Notion.so
client = NotionClient(token_v2="<token_v2>")

# Replace this URL with the URL of the page you want to edit
page = client.get_block("https://www.notion.so/myorg/Test-c0d20a71c0944985ae96e661ccc99821")

print("The old title is:", page.title)

# Note: You can use Markdown! We convert on-the-fly to Notion's internal formatted text data structure.
page.title = "The title has now changed, and has *live-updated* in the browser!"
```

Concepts and notes

- We map tables in the Notion database into Python classes (subclassing `Record`), with each instance of a class representing a particular record. Some fields from the records (like `title` in the example above) have been mapped to model properties, allowing for easy, instantaneous read/write of the record. Other fields can be read with the `get` method, and written with the `set` method, but then you'll need to make sure to match the internal structures exactly.
- The tables we currently support are **block** (via `Block` class and its subclasses, corresponding to different `type` of blocks), **space** (via `Space` class), **collection** (via `Collection` class), **collection_view** (via `CollectionView` and subclasses), and **notion_user** (via `User` class).
- Data for all tables are stored in a central `RecordStore`, with the `Record` instances not storing state internally, but always referring to the data in the central `RecordStore`. Many API operations return updating versions of a large number of associated records, which we use to update the store, so the data in `Record` instances may sometimes update without being explicitly requested. You can also call the `refresh` method on a `Record` to trigger an update, or pass `force_update` to methods like `get`.
- The API doesn't have strong validation of most data, so be careful to maintain the structures Notion is expecting. You can view the full internal structure of a record by calling `myrecord.get()` with no arguments.

- When you call `client.get_block`, you can pass in either an ID, or the URL of a page. Note that pages themselves are just `blocks`, as are all the chunks of content on the page. You can get the URL for a block within a page by clicking "Copy Link" in the context menu for the block, and pass that URL into `get_block` as well.

Updating records

We keep a local cache of all data that passes through. When you reference an attribute on a `Record`, we first look to that cache to retrieve the value. If it doesn't find it, it retrieves it from the server. You can also manually refresh the data for a `Record` by calling the `refresh` method on it. By default (unless we instantiate `NotionClient` with `monitor=False`), we also subscribe to long-polling updates for any instantiated `Record`, so the local cache data for these `Records` should be automatically live-updated shortly after any data changes on the server. The long-polling happens in a background daemon thread.

Example: Traversing the block tree

```
for child in page.children:
    print(child.title)

print("Parent of {} is {}".format(page.id, page.parent.id))
```

Example: Adding a new node

```
from notion.block import TodoBlock

newchild = page.children.add_new(TodoBlock, title="Something to get done")
newchild.checked = True
```

Example: Deleting nodes

```
# soft-delete
page.remove()

# hard-delete
page.remove(permanently=True)
```

Example: Create an embedded content type (iframe, video, etc)

```
from notion.block import VideoBlock

video = page.children.add_new(VideoBlock, width=200)
# sets "property.source" to the URL, and "format.display_source" to the embedly-converted URL
video.set_source_url("https://www.youtube.com/watch?v=oHg5SJYRHA0")
```

Example: Create a new embedded collection view block

```
collection = client.get_collection(COLLECTION_ID) # get an existing collection
cvb = page.children.add_new(CollectionViewBlock, collection=collection)
view = cvb.views.add_new(view_type="table")

# now the filters and format options on the view can bet set as desired.
#
# for example:
#   view.set("query", ...)
#   view.set("format.board_groups", ...)
```

```
#   view.set("format.board_properties", ...)
```

Example: Moving blocks around

```
# move my block to after the video
my_block.move_to(video, "after")

# move my block to the end of otherblock's children
my_block.move_to(otherblock, "last-child")

# (you can also use "before" and "first-child")
```

Example: Subscribing to updates

(Note: Notion->Python automatic updating is currently broken and hence disabled by default; call `my_block.refresh()` to update, in the meantime, while monitoring is being fixed)

We can "watch" a `Record` so that we get a callback whenever it changes. Combined with the live-updating of records based on long-polling, this allows for a "reactive" design, where actions in our local application can be triggered in response to interactions with the Notion interface.

```
# define a callback (note: all arguments are optional, just include the ones you care about)
def my_callback(record, difference):
    print("The record's title is now:" record.title)
    print("Here's what was changed:")
    print(difference)

# move my block to after the video
my_block.add_callback(my_callback)
```

Example: Working with databases, aka "collections" (tables, boards, etc)

Here's how things fit together:

- Main container block: `CollectionViewBlock` (inline) / `CollectionViewPageBlock` (full-page)
  - `Collection` (holds the schema, and is parent to the database rows themselves)
    - `CollectionRowBlock`
    - `CollectionRowBlock`
    - ... (more database records)
  - `CollectionView` (holds filters/sort/etc about each specific view)

Note: For convenience, we automatically map the database "columns" (aka properties), based on the schema defined in the `Collection`, into getter/setter attributes on the `CollectionRowBlock` instances. The attribute name is a "slugified" version of the name of the column. So if you have a column named "Estimated value", you can read and write it via `myrowblock.estimated_value`. Some basic validation may be conducted, and it will be converted into the appropriate internal format. For columns of type "Person", we expect a `User` instance, or a list of them, and for a "Relation" we expect a singular/list of instances of a subclass of `Block`.

```
# Access a database using the URL of the database page or the inline block
cv = client.get_collection_view("https://www.notion.so/myorg/8511b9fc522249f79b90768b832599cc?v=8dee2a54f6b64cb296c83328

# List all the records with "Bob" in them
for row in cv.collection.get_rows(search="Bob"):
    print("We estimate the value of '{}' at {}".format(row.name, row.estimated_value))

# Add a new record
```

```
row = cv.collection.add_row()
row.name = "Just some data"
row.is_confirmed = True
row.estimated_value = 399
row.files = ["https://www.birdlife.org/sites/default/files/styles/1600/public/slide.jpg"]
row.person = client.current_user
row.tags = ["A", "C"]
row.where_to = "https://learningequality.org"

# Run a filtered/sorted query using a view's default parameters
result = cv.default_query().execute()
for row in result:
    print(row)

# Run an "aggregation" query
aggregate_params = [{
    "property": "estimated_value",
    "aggregation_type": "sum",
    "id": "total_value",
}]
result = cv.build_query(aggregate=aggregate_params).execute()
print("Total estimated value:", result.get_aggregate("total_value"))

# Run a "filtered" query
filter_params = [{
    "property": "assigned_to",
    "comparator": "enum_contains",
    "value": client.current_user,
}]
result = cv.build_query(filter=filter_params).execute()
print("Things assigned to me:", result)

# Run a "sorted" query
sort_params = [{
    "direction": "descending",
    "property": "estimated_value",
}]
result = cv.build_query(sort=sort_params).execute()
print("Sorted results, showing most valuable first:", result)
```

Note: You can combine `filter`, `aggregate`, and `sort`. See more examples of queries by setting up complex views in Notion, and then inspecting `cv.get("query")`

You can also see more examples in action in the smoke test runner. Run it using:

```
python run_smoke_test.py
```

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Related Projects

- md2notion: import Markdown files to Notion
- notion-export-ics: Export Notion Databases to ICS calendar files

TODO

- Cloning pages hierarchically
- Debounce cache-saving?

- Support inline "user" and "page" links, and reminders, in markdown conversion
- Utilities to support updating/creating collection schemas
- Utilities to support updating/creating collection_view queries
- Support for easily managing page permissions
- Websocket support for live block cache updating
- "Render full page to markdown" mode
- "Import page from html" mode