Consuming the iDigBio API in R

A technical exploration of iDigBio’s API offerings and R

Please take a text poll to help us guide this session!

Text an answer number (1-4) to: (928) 232-1975

How would you rate your basic understanding of what a web API is?
1. Errrr, what's a web API?
2. I've heard about web APIs before
3. Pretty good
4. I program against APIs on a daily basis
Consuming the iDigBio API in R

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Today’s Session

• A few very brief slides
• Examples:
  – questions answered via API + R
  – Overview of methods and packages
• Discussion, Q&A
Briefly: What is an API?

Application Programming Interface
● An organization has a system...
● That they would like to allow others to interact with...
● And so they make it available on the web via an “endpoint”
● Some will require an account, others won’t
Endpoint: Odd Name, Same Thing

Endpoint:
- An *endpoint* is a web address for the API

For instance, iDigBio:
- https://search.idigbio.org/v2/search/
- https://search.idigbio.org/v2/mapping/

National Park Service:
- https://developer.nps.gov/api/v1/alerts
A point of comparison...
Talking With an API

What is a request?

A human or a computer makes a request to the API
- Asking for an interaction
- “Please search for these terms and return the results…”
- “Please download this file…”
- “Please count how many results match my query…”
itemCount: 2962007
lastModified: "2019-09-23T00:44:42.997Z"

items:

0:
  uuid: "c4cb63b8-7726-4bbe-ac97-471103071026"
  type: "records"
  etag: "01924f8b387a8c4984d2b4897f8b78e126bd537f"
  data: {}

indexTerms:
  individualcount: 1
  geopoint: {}
  family: "scarabaeidae"
  recordset: "77e77e52-6927-46bc-b3e8-b1b043f2f3c7"
  id: 45217391343472825

https://search.idigbio.org/v2/search/records?rq=%7B%22stateprovince%22:%22Florida%22%7D&limit=1000
R + iDigBio = ridigbio

https://github.com/iDigBio/ridigbio

ridigbio -- an R interface to iDigBio's API (see http://www.idigbio.org/)

Manage topics

143 commits
4 branches
8 releases

Branch: master
New pull request

mcollinsacis Updated release data for new release

R

Added Content-Type header to POST function. The next version c
https://github.com/iDigBio/idigbio-search-api/wiki

- How to access all the endpoints
  - Search, media, mapping
  - Summaries (top-n)
- Examples!
- Also a list of fields, or:
- Get request to:
  - https://search.idigbio.org/v2/meta/fields/records
(Example #1)
(Example #2)
APIs at iDigBio

Search API (previously covered)

Download API:

Helpful Tools

Postman: build, run, save, share API queries

https://www.getpostman.com/
A Few Other Thoughts

Don’t re-invent the wheel:

• Check the API documentation

• Email data@idigbio.org*
A Few Other Thoughts

How to learn more?

- Software and Data Carpentries
  - https://carpentries.org/
- Hadley Wickham’s books online:
  - http://hadley.nz/
- Your community!
A Few Other Thoughts

Links to the projects shown today

- [https://github.com/roncanepa/idigbio-results-in-national-parks](https://github.com/roncanepa/idigbio-results-in-national-parks)
- [https://github.com/ekrimmel/idigbio-api-dq-geo](https://github.com/ekrimmel/idigbio-api-dq-geo)
- You can find more links in the project READMEs
Thank you!

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vimeo.com/idigbio
idigbio.org/rss-feed.xml
webcal://www.idigbio.org/events-calendar/export.ics

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