



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?

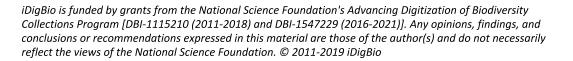
- Errrr, what's a web API?
- I've heard about web APIs before
- 3. Pretty good
- 4. I program against APIs on a daily basis















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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/

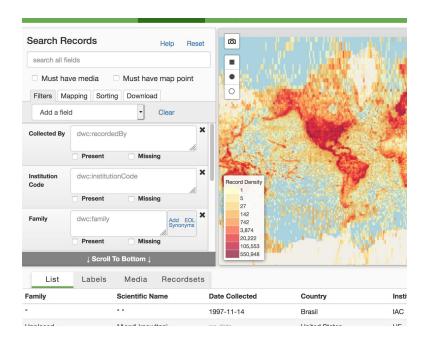
National Park Service:

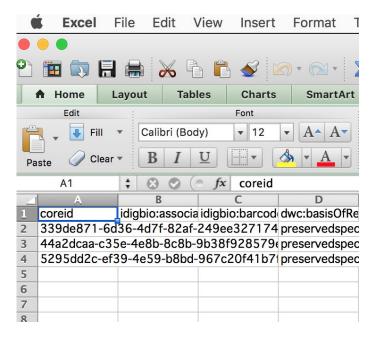
https://developer.nps.gov/api/v1/alerts





A point of comparison...









Talking With an API

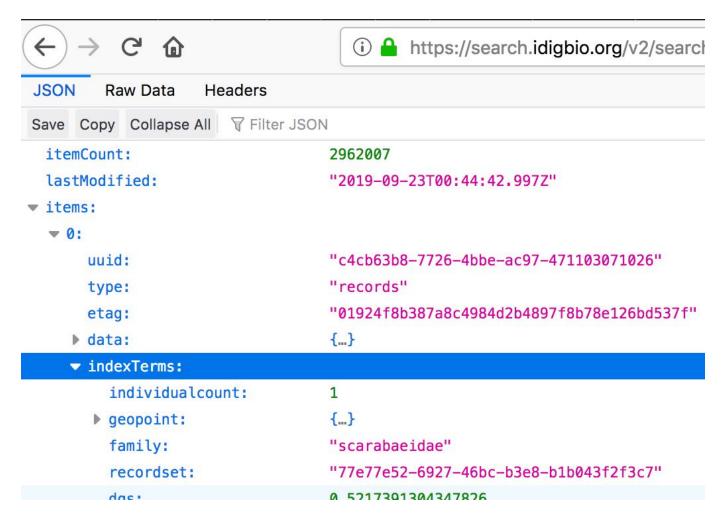
What is a request?

A human or a computer makes a <u>request</u> 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..."







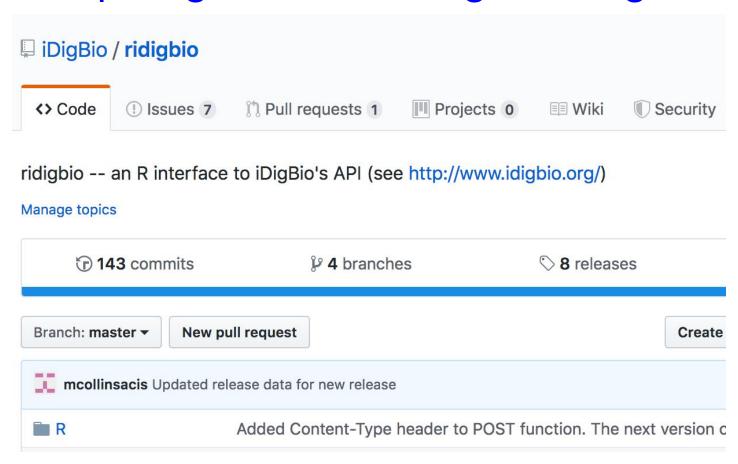
https://search.idigbio.org/v2/search/records?rq={%22stateprovince%22:%22Florida%22}&limit=1000





R + iDigBio = ridigbio

https://github.com/iDigBio/ridigbio





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:

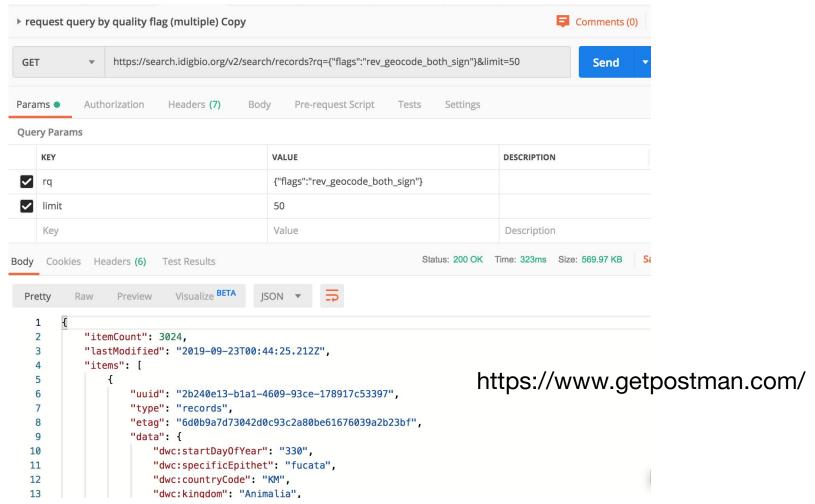
 https://www.idigbio.org/wiki/index.php/ID igBio Download API





Helpful Tools

Postman: build, run, save, share API queries





A Few Other Thoughts

Don't re-invent the wheel:

- Check the API documentation
 - https://github.com/iDigBio/idigbio-search-api/wiki
- 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-nationa
 l-parks
- https://github.com/ekrimmel/idigbio-api-dq-geo
- You can find more links in the project READMEs





Thank you!





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