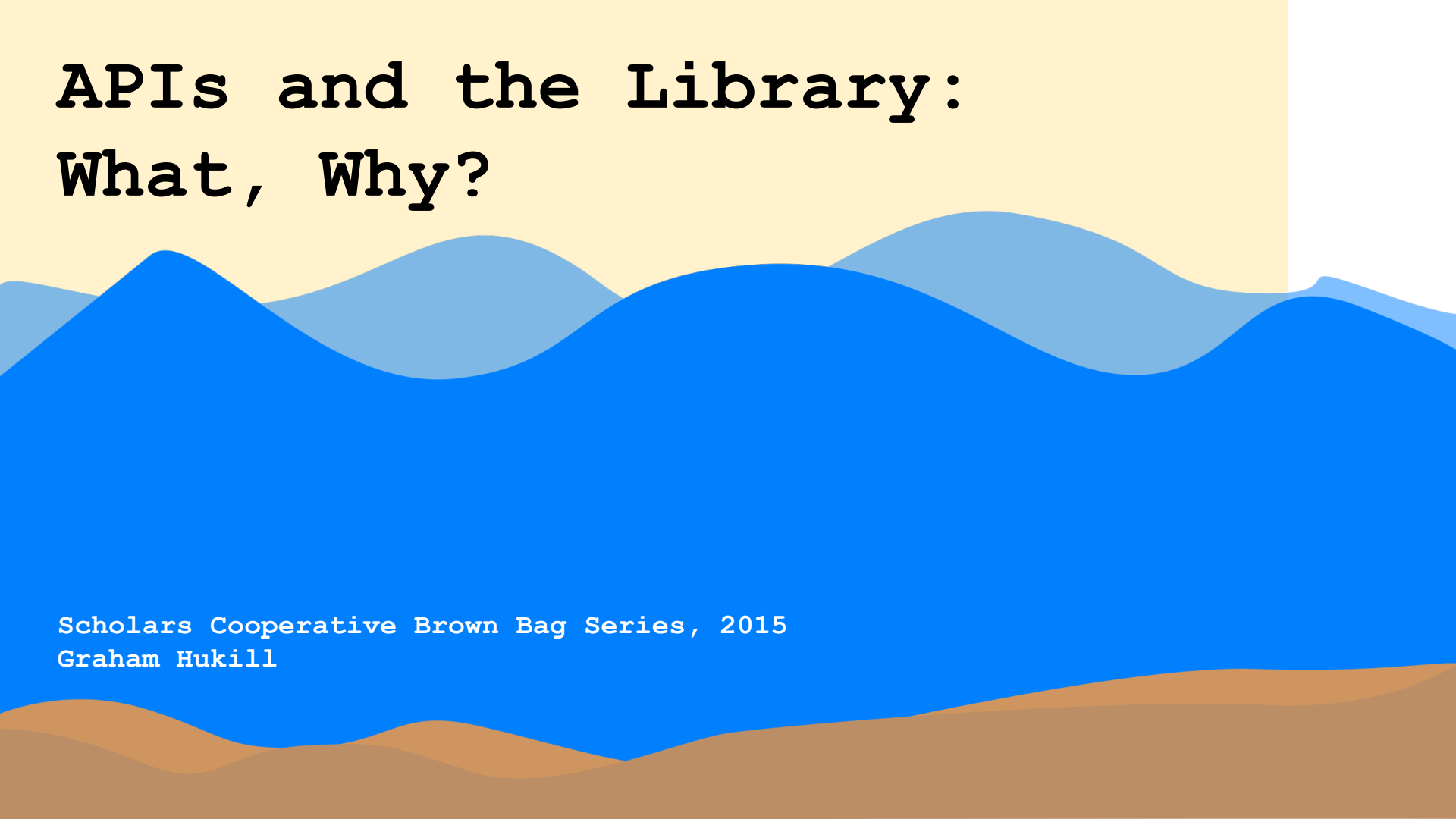


APIs and the Library: What, Why?

The background features a stylized landscape with a yellow sky on the right side, transitioning into a blue area with several overlapping, wavy shapes in shades of blue and light blue. At the bottom, there are wavy shapes in shades of brown and tan, suggesting a ground or water surface.

Scholars Cooperative Brown Bag Series, 2015
Graham Hukill

What do Librarians do?

I'm going to get myself in trouble here.

What do Librarians do?

I'm going to get myself in trouble here.

Libraries used to be all about books.

Responsibilities have diversified,

but the essence remains the same:

organizing and providing access to information.

APIs facilitate just that.

Technical Definition

API = “Application Programming Interface”

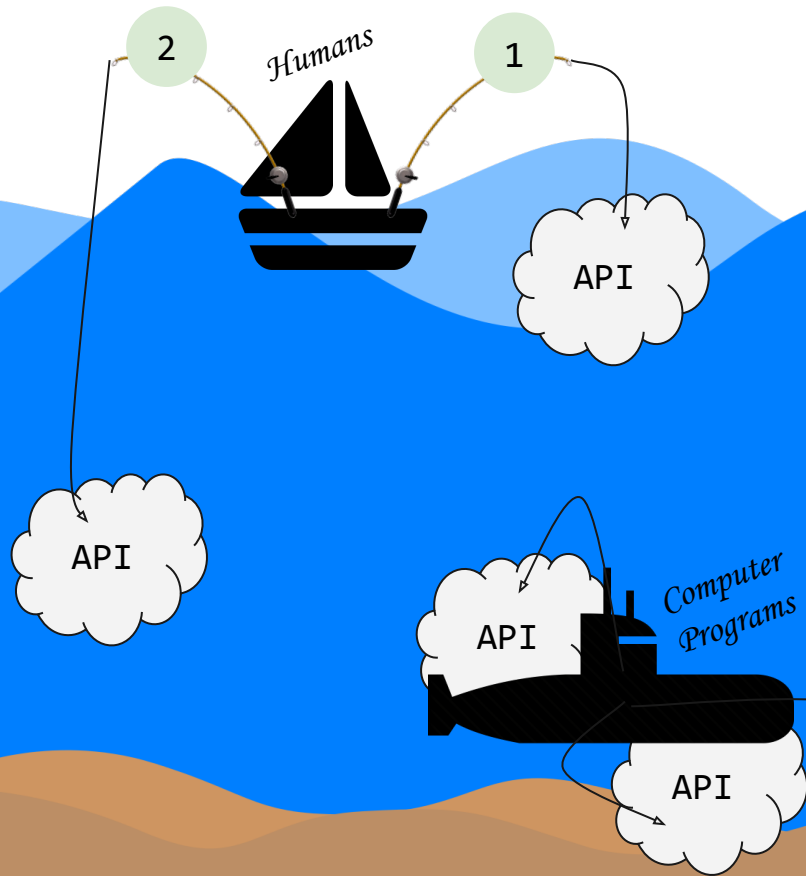
“The API is a technical gateway enabling the automated exchange of information between software systems.”

(Burton & Jackson, 2015)

My Definition

A datasource I can request information from, via HTTP (aka the Internet), in a predictable and understandable fashion.

the API waters

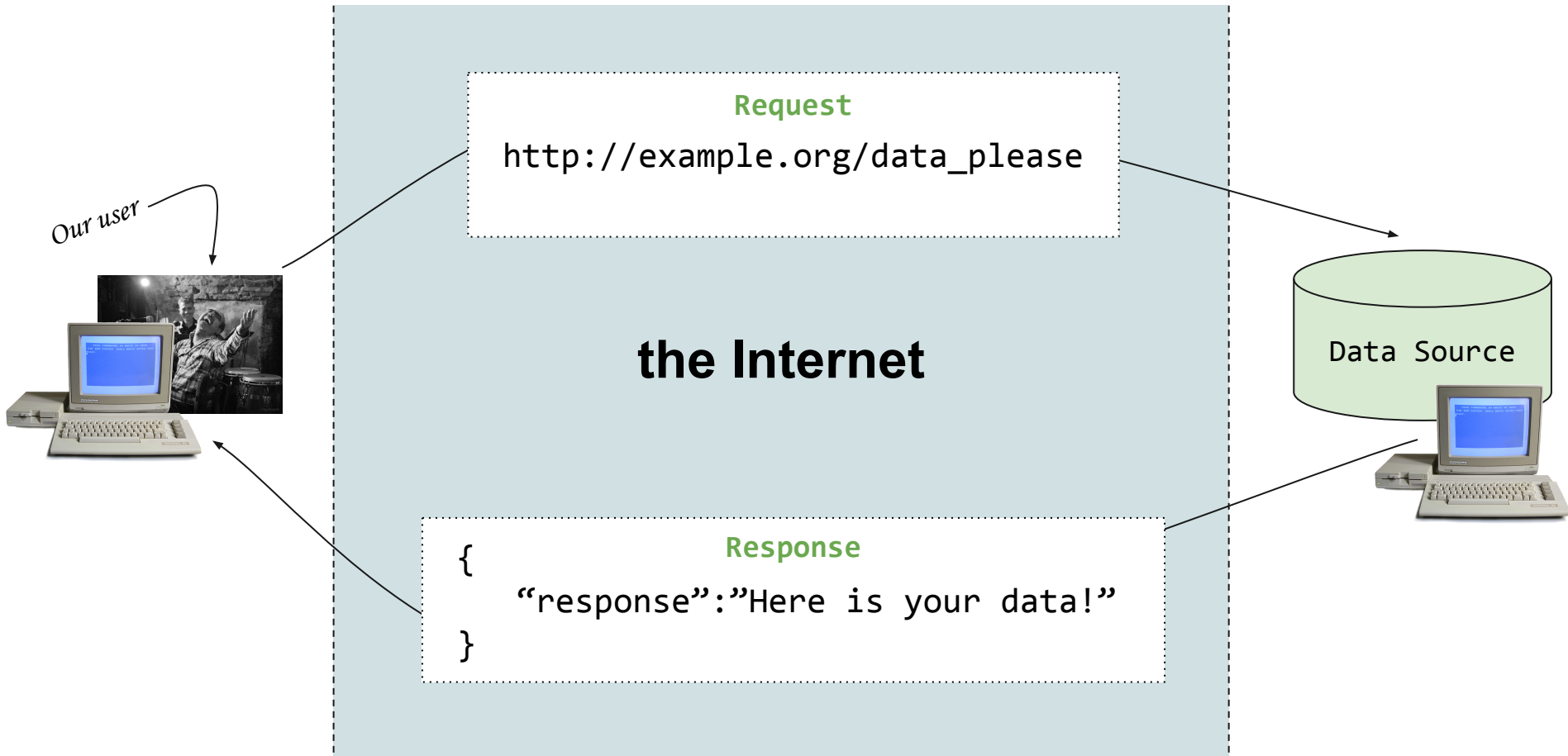


Request: "I would like a dataset about worms in Nashville"

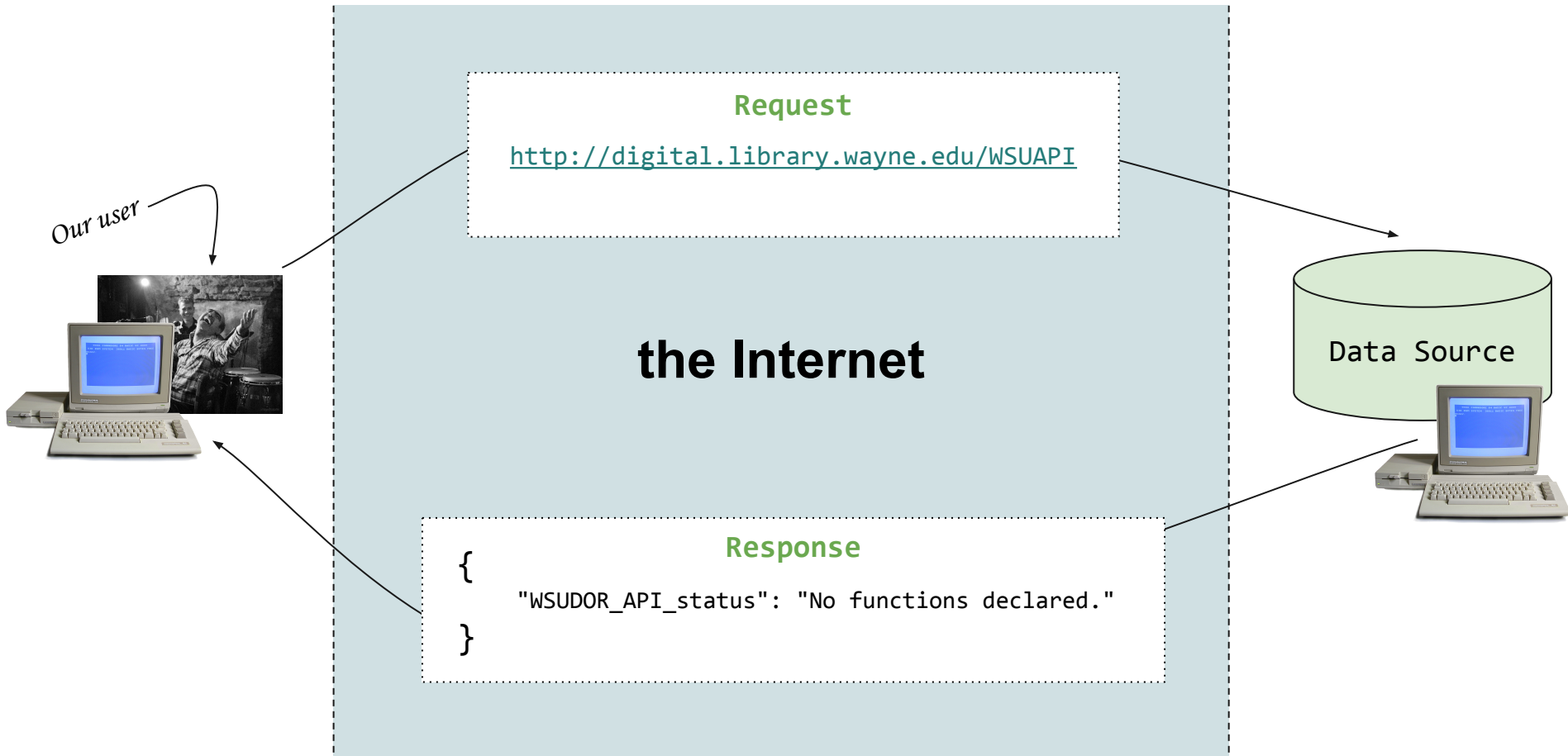
- 1 Query an API: "worms Nashville", returns an ID
- 2 Use an API to retrieve that dataset by that ID, returns a dataset

“Pull the information
where we need it.”

HTTP Request / Response Cycle



HTTP Request / Response Cycle

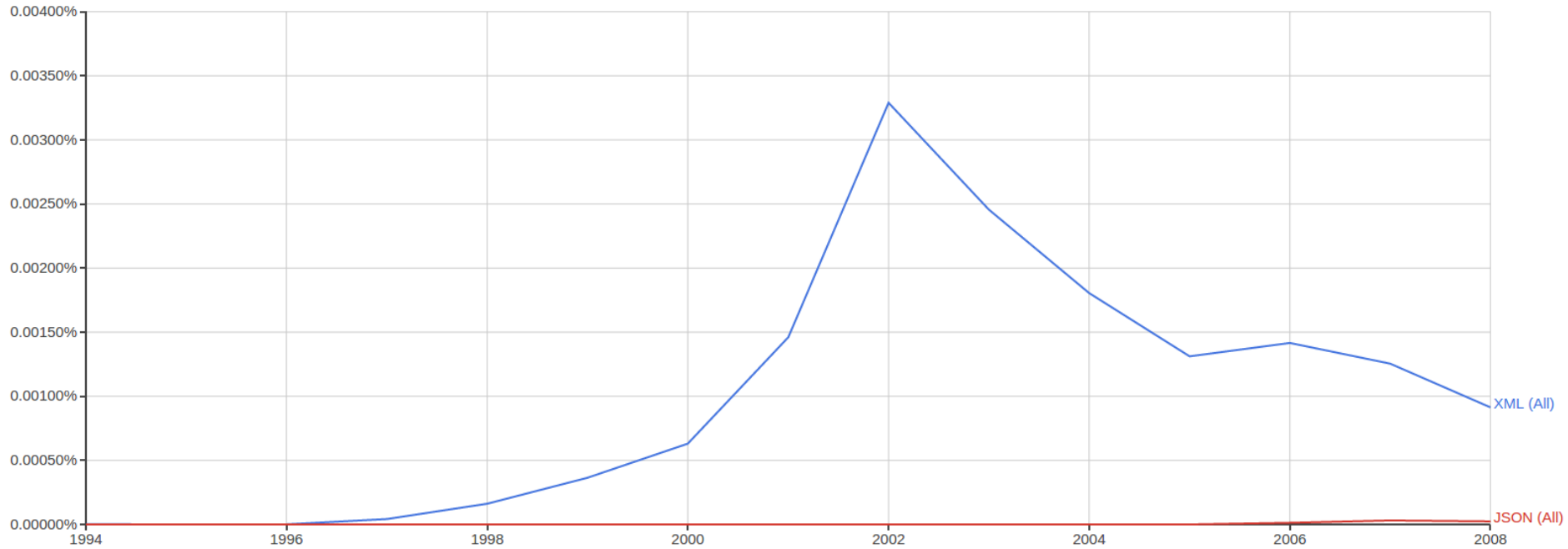


JSON = “JavaScript
Object Notation”



```
{
  "firstName": "John",
  "lastName": "Smith",
  "isAlive": true,
  "age": 25,
  "address": {
    "streetAddress": "21 2nd Street",
    "city": "New York",
    "state": "NY",
    "postalCode": "10021-3100"
  },
  "phoneNumbers": [
    {
      "type": "home",
      "number": "212 555-1234"
    },
    {
      "type": "office",
      "number": "646 555-4567"
    }
  ],
  "children": [],
  "spouse": null
}
```

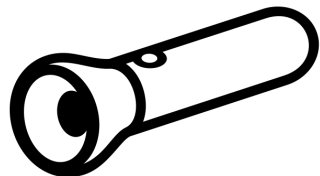
JSON



APIs and the Library

We use APIs in two interesting ways in libraries...

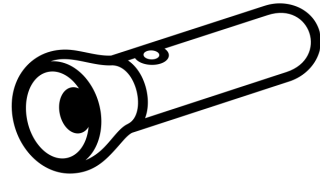
Discovery



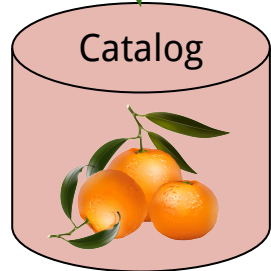
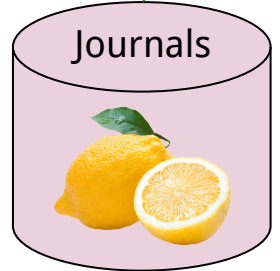
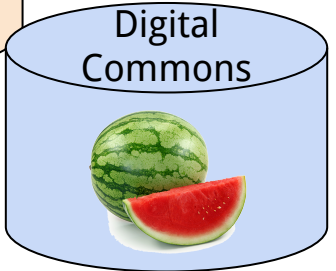
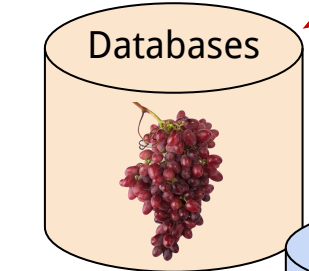
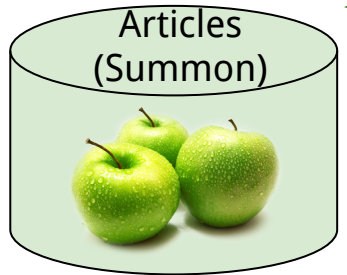
Access



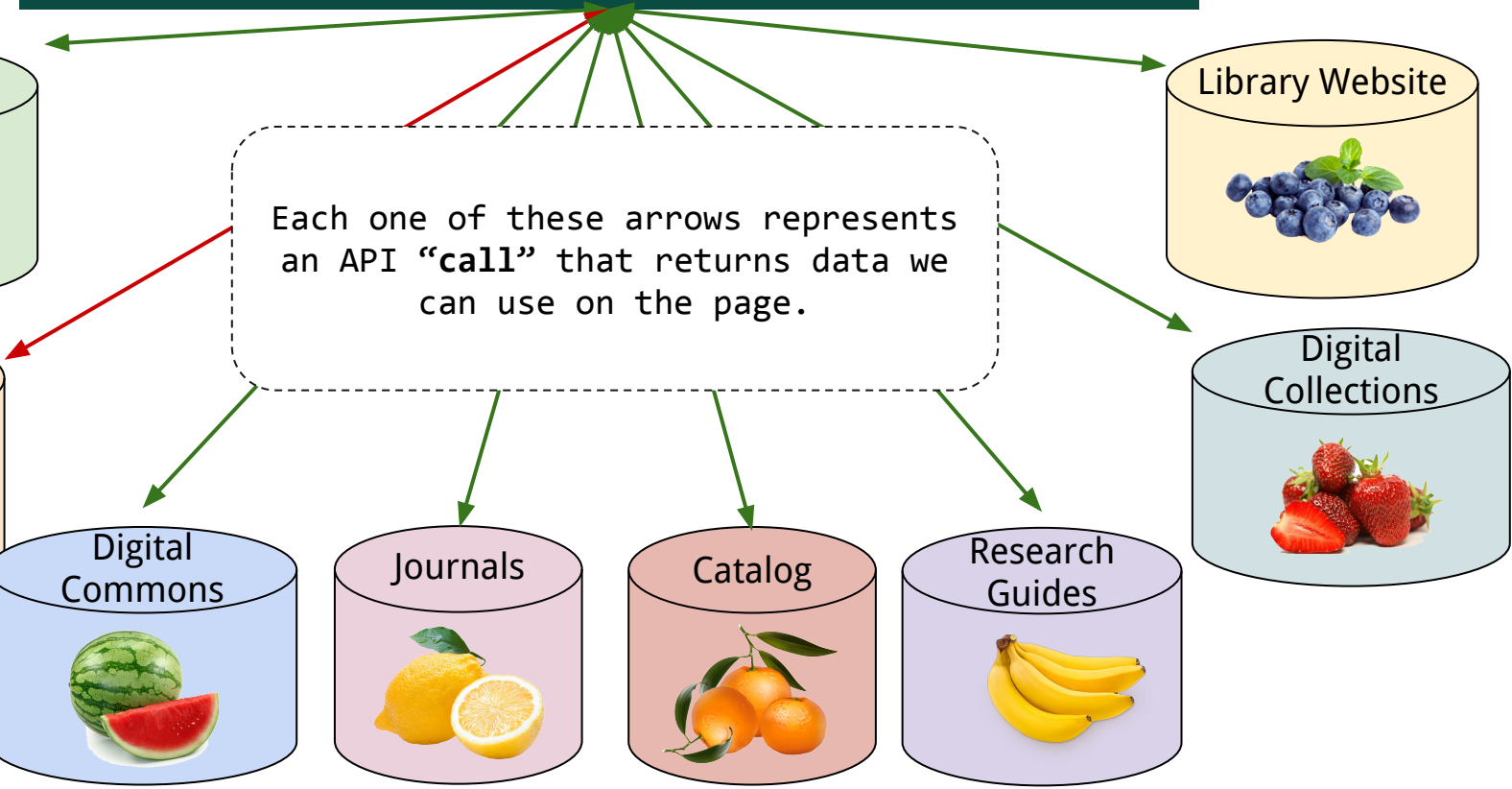
Discovery



QuickSearch



Each one of these arrows represents an API "call" that returns data we can use on the page.





Articles

Detroit Jazz Festival Names 2012 Detroit Jazz Festival Lineup

Date: 04/20/2012
Entertainment Close-up

Comcast Cablevision/Detroit: Detroit Jazz Jewels. (Beacon 2002 Awards)

Date: 03/18/2002
Multichannel News, 23(11)

Valade's heart beats for Detroit jazz

Date: 06/04/2012
Crain's Detroit Business, 28(23)

[View more results... \(4738\)](#)

Databases

No Database results were found. Please try another search in Databases

DigitalCommons@WayneState

Urban Jazz: International Style

One may not think of Torino, Italy, and Detroit as having much in common. But according to Chris Col...

Christopher Collins, Director

The Windows on the Arts was a program that involved a wide variety of culture, art, and activities. ...

Jim Ruffner

The Windows on the Arts was a program that involved a wide variety of culture, art, and activities. ...

[View more results...](#)

Books and Media

King, B.B.; Jazz Musician; Performing at Montreux Detroit Jazz Festival

[See on Shelf](#) [➔](#)
AVAIL. ONLINE
Virtual Motor City Collection
Libraries Digital Image Collections

King, B.B.; Jazz Musician; Performing at Montreux Detroit Jazz Festival

[See on Shelf](#) [➔](#)
AVAIL. ONLINE
Virtual Motor City Collection
Libraries Digital Image Collections

King, B.B.; Jazz Musician; Performing at Montreux Detroit Jazz Festival

[See on Shelf](#) [➔](#)
AVAIL. ONLINE
Virtual Motor City Collection
Libraries Digital Image Collections

[View more results... \(54\)](#)

Journals

Feels like jazz! : arts & poetry date book.

Change.

[View more results... \(2\)](#)

Research Guides

Casa Corridor Culture: In and Around Wayne State, 1960s-1980s

Subject of the Month

A monthly display in the Purdy/Kresge Library featuring resources on specific thematic subjects.

Detroit Research and Exploration

This guide is developed for people who want to know more about or who are researching topics relating to the City of Detroit.

[View more results](#)

WSU Site Search

Department Of Music - J.C. Heard **Jazz Week** at Wayne

*Beginning in 2007, the Wayne State University Department of Music embarked on a long-term partnership with the **Detroit Jazz Festival**. One result of this ...*

Department Of Music - **Jazz Studies Program**

*One of the oldest jazz studies degree programs in the country, Wayne State's ... Eddie Daniels and WSU Big Band Kurt Elling at **Detroit Jazz Fest** John Cooper ...*

Professor Collins announces **Detroit Jazz Fest** lineup... - CFPCA ...

*Hometown heroes, Apollo Theater tribute on tap for **Detroit Jazz Festival** by Mark Stryker. History-making elder statesmen, leading progressive and mainstream ...*

[View more results...](#)

Digital Collections

Detroit Focus Quarterly Volume 6 Number 4 [Issue]



Detroit Focus Quarterly Volume 8 Numbers 1 and 2 [Issue]



Detroit Focus Quarterly Volume 10 Number 1 [WSUebook]



[View more results... \(20\)](#)

QuickSearch

UNIVERSITY LIBRARIES

detroit jazz

RESOURCES SERVICES LIBRARIES

Articles

Detroit Jazz Festival Names 2012 Detroit Jazz Festival Lineup
Date: 04/20/2012
Entertainment Close-up

Comcast Cablevision/Detroit: Detroit Jazz Jewels. (Beacon 2002 Awards)
Date: 03/18/2002
Multichannel News, 23(11)

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Date: 06/04/2012
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View more results...(4738)

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DigitalCommons@WayneState

Urban Jazz: International Style
One may not think of Torino, Italy, and Detroit as having much in common. But according to Chris Col...

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The Windows on the Arts was a program that involved a wide variety of culture, art, and activities. ...

Jim Ruffner
The Windows on the Arts was a program that involved a wide variety of culture, art, and activities. ...

View more results...

```
"IsScholarly": [
  "false"
],
"ID": [
  "FETCH-LOGICAL-g591-a4420080c128d20ebd2ab0ed0d175b54239211ff902ce0846ac8c48e83b1bc13"
],
"PublicationTitle": [
  "Crain's Detroit Business"
],
"GeographicLocations_xml": [
  {
    "name": "Michigan"
  }
],
"Issue": [
  "23"
],
"Discipline": [
  "Law"
],
"PublicationYear": [
  "2012"
],
"Audience": [
  "Trade",
  "General"
],
"SubjectTerms": [
  "Music festivals",
  "Jazz music",
  "Festivals"
],
"MergedId": [
  "FETCHMERGED-LOGICAL-g591-a4420080c128d20ebd2ab0ed0d175b54239211ff902ce0846ac8c48e83b1bc13"
],
"PublicationDecade": [
  "2010"
],
"ContentType": [
  "Journal Article"
],
"Title": [
  "Valade's heart beats for Detroit jazz"
],
]
```

data from API
(JSON format)

Ask-A-Librarian

Detroit Jazz Festival.

Kurt Elling at Detroit

musicians, leading

View more results...(20)

QuickSearch : Catalog

```
{"title":[" Code biology : a new science of life \\/ Marcello Barbieri.", " The biology and ecology of giant kelp forests \\/ David R. Schiel & Michael S. Foster.", " Electromagnetic fields in biology and medicine [electronic resource] \\/ Marko S. Markov."],"lc":["ELECTRONIC BOOKS-DDA","ELECTRONIC BOOKS-DDA","ELECTRONIC BOOK-ELECTRICALENGINEERINGnetBASE"],"bibNum":["b5022463","b5062284","b5063817"],"bookTotal":3,"bookTotalComplete":14419,"location":["Libraries Electronic Books","Libraries Electronic Books","Libraries Electronic Books"],"status":["AVAIL. ONLINE","AVAIL. ONLINE","AVAIL. ONLINE"],"showStackView":["yes","yes","yes"]}
```

QuickSearch : Summon

That is well and good, but this is what an actual API response often looks like...



...as you can see, API responses are mostly created by computers, for computers.

QuickSearch : LibGuides

```
<div id="libGuideWidget">
  <div id="api_search_guides_iid692">
    <ul>
      <li><a href="http://guides.lib.wayne.edu/biochemistryandmolecularbiology" target="_blank">Shiffman -
Biochemistry and Molecular Biology</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description"></div>
        </div>
      </li>
      <li><a href="http://guides.lib.wayne.edu/biologicalsciences" target="_blank">Biological Sciences</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description">This Guide will assist Biological Sciences faculty
and students in locating library resources and websites in Biology.</div>
        </div>
      </li>
      <li>
        <a href="http://guides.lib.wayne.edu/reference_tools" target="_blank">Reference Tools</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description">Quick reference information.</div>
        </div>
      </li>
    </ul>
  </div>
</div>
```

- [Shiffman - Biochemistry and Molecular Biology](http://guides.lib.wayne.edu/biochemistryandmolecularbiology)
- [Biological Sciences](http://guides.lib.wayne.edu/biologicalsciences)
This Guide will assist Biological Sciences faculty and students in locating library resources and websites in Biology.
- [Reference Tools](http://guides.lib.wayne.edu/reference_tools)
Quick reference information.

QuickSearch : LibGuides

```
<div id="libGuideWidget">
  <div id="api_search_guides_iid692">
    <ul>
      <li><a href="http://guides.lib.wayne.edu/biochemistryandmolecularbiology" target="_blank">Shiffman - Biochemistry and Molecular Biology</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description"></div>
        </div>
      </li>
      <li><a href="http://guides.lib.wayne.edu/biologicalsciences" target="_blank">Biological Sciences</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description">This Guide will assist Biological Sciences faculty and students in locating library resources and websites in Biology.</div>
        </div>
      </li>
      <li>
        <a href="http://guides.lib.wayne.edu/reference_tools" target="_blank">Reference Tools</a>
        <div class="s-lg-guide-list-info">
          <div class="s-lg-guide-list-description">Quick reference information.</div>
        </div>
      </li>
    </ul>
  </div>
</div>
```

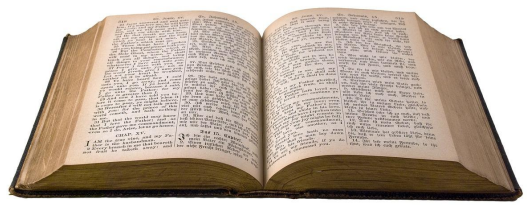
- [Shiffman - Biochemistry and Molecular Biology](#)
- [Biological Sciences](#)
This Guide will assist Biological Sciences faculty and students in locating library resources and websites in Biology.
- [Reference Tools](#)
Quick reference information.

Access



Flow of Information

For quite some time...



Words



Knowledge



Fairly recently...



Words



Knowledge



Flow of Information

Even more recently...

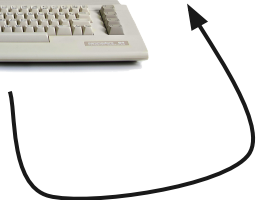


Data



Knowledge

Interpretation & Analysis



Example

Weather data in Metric...



“24° C, 15 m/s from NE”

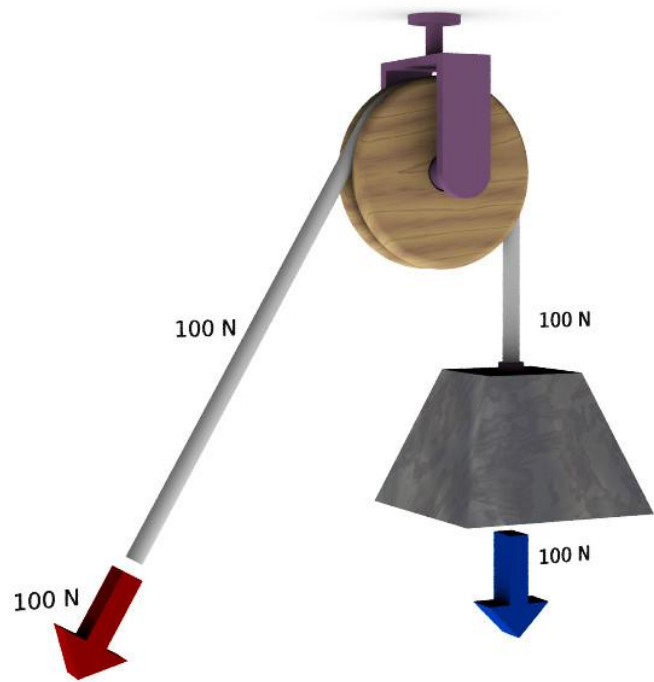


“75.2° F, 33.6 mph from NE”

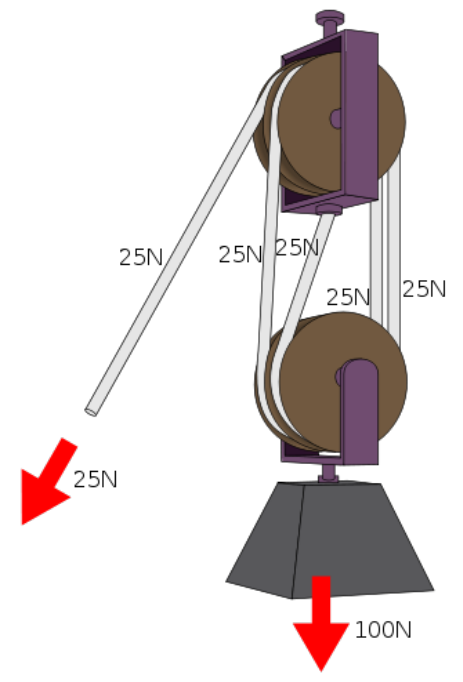


Metric to Imperial
Conversion

Mediation



Simple Pulley
(Unmediated Information Consuming)



Compound Pulley
(Mediated Information Consuming)

Analysis



Full-Text Search Results

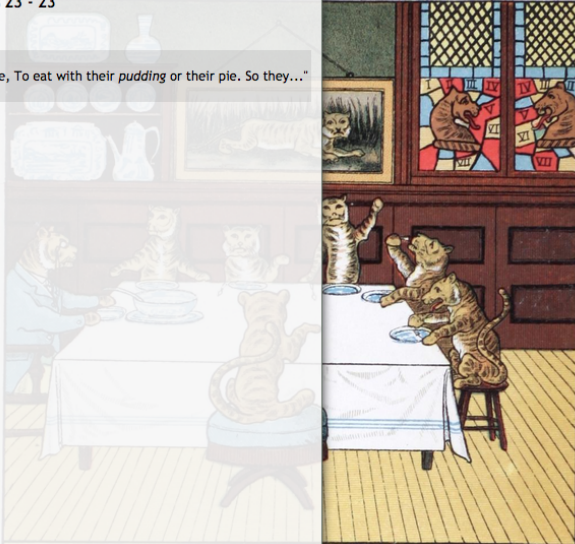
Search results for: "pudding"

Found on 1 pages.

Displaying pages 23 - 23

page: 23

... hadn't any sauce, To eat with their *pudding* or their pie. So they..."



THE SEVEN LITTLE TIGERS AND THE AGED COOK.

Seven little Tigers they sat them in a row,
Their seven little dinners for to eat,
And each of the troop had a little plate of soup,
The effect of which was singularly neat.



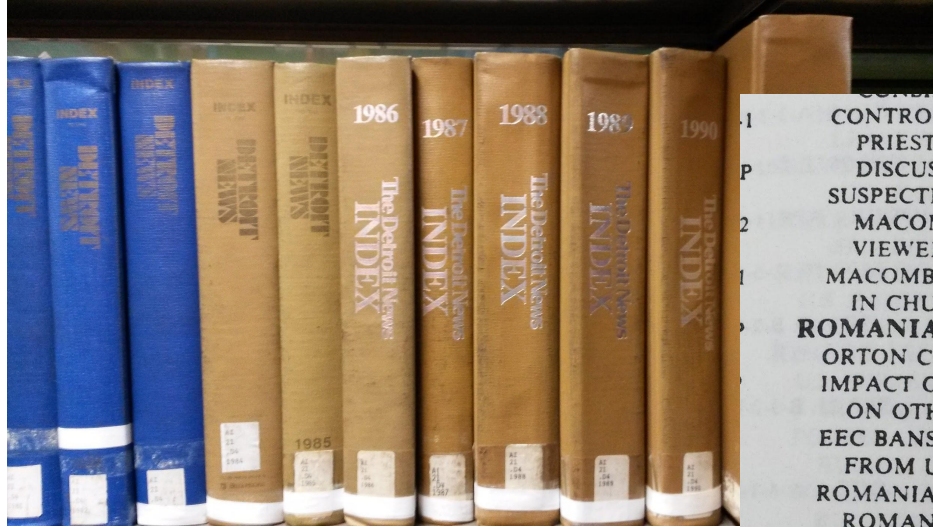
They were feeling rather cross, for they hadn't any
sauce,
To eat with their **pudding** or their pie.
So they rumpled up their hair in a spasm of despair,
And vowed that the aged cook should die.

The Question

When will librarians feel comfortable suggesting APIs as scholarly and useful information sources to users?

Perhaps we are closer than we think...

Our users have been interpreting data for a long time

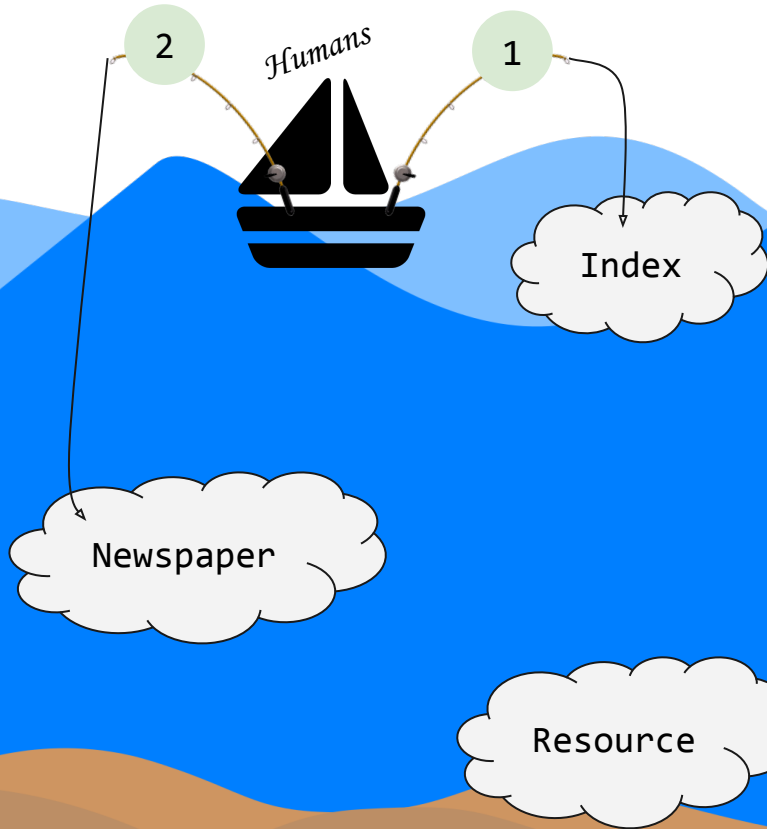


CONTRIBUTOR SALE OF SEMINARY
CONTROVERSIAL NOVELS BY CATHOLIC
PRIEST ANDREW GREELEY
DISCUSSED
SUSPECTED ARSON FIRES AT TWO
MACOMB COUNTY CHURCHES
VIEWED
MACOMB CTY POLICE SEEK SUSPECTS
IN CHURCH ARSON CASES
ROMANIA
ORTON COLUMN ON ROMANIA
IMPACT OF SOVIET NUCLEAR DISASTER
ON OTHER COUNTRIES DISCUSSED
EEC BANS ALL FRESH FOOD IMPORTS
FROM USSR & EAST BLOCK
ROMANIAN GOVT ALLOWS 1,100
ROMANIANS TO EMIGRATE TO U.S.
**EARTHQUAKE STRIKES SOUTHEASTERN
EUROPE**
3RD IN SERIES ON EASTERN EUROPE
AUTO MANUFACTURING AREA OF
ROMANIA VIEWED
RONDAN DOYUKAI CO
U.S. ORGANIZED CRIME COMM. LINKS
JAPANESE GROUP WITH STOCK BUY
ROSEVILLE (MICHIGAN)
ROSEVILLE, MICH., INVADED BY
COCKROACHES COMING FROM
SEWERS

DEC 11: B-11-1-P
DEC 13: B-1-5
DEC 20: A-13-3-P
DEC 26: A-1-1-P
DEC 27: B-1-1-P
JAN 29: A-17-1-P
MAY 1: A-17-5-P
MAY 11: A-1-2
JUN 2: B-D06-4
SEP 1: A-1-1
DEC 16: A-1-3-P
DEC 16: A-8-1-P
APR 2: A-1-5
JUN 4: A-12-1

RUNNING
RON AUSTIN PROM
'RETROTRAINING'
RUNNING BACKW
FEATURE ON 'DISAB
BROWN COLUMN OF
SCHOLARSHIP FU
DR. STEVE GLICKMA
SHOE INSERTS FO
METRO DET. RESID
PARTICIPATING I
RUN PROFILED
RUNNING PROGRAM
CORRECTIONAL F
EYED
WALDMEIR COLUM
DECISION TO SPO
AMERICAN WOMAN
RECORD RUN AC
ISLANDS
RURAL AREAS
URBAN WOMAN DI
TRAVEL EXPERIE
MICH. AGRI. DEPT
ON FARM RIGHT
MICH. AGRICULTUR
PROBLEMS WITH
GOODMAN COLUM
QUIETNESS OF C
APARTMENT PROJE
SUMPTER TOWNS
CLOSING OF MICH

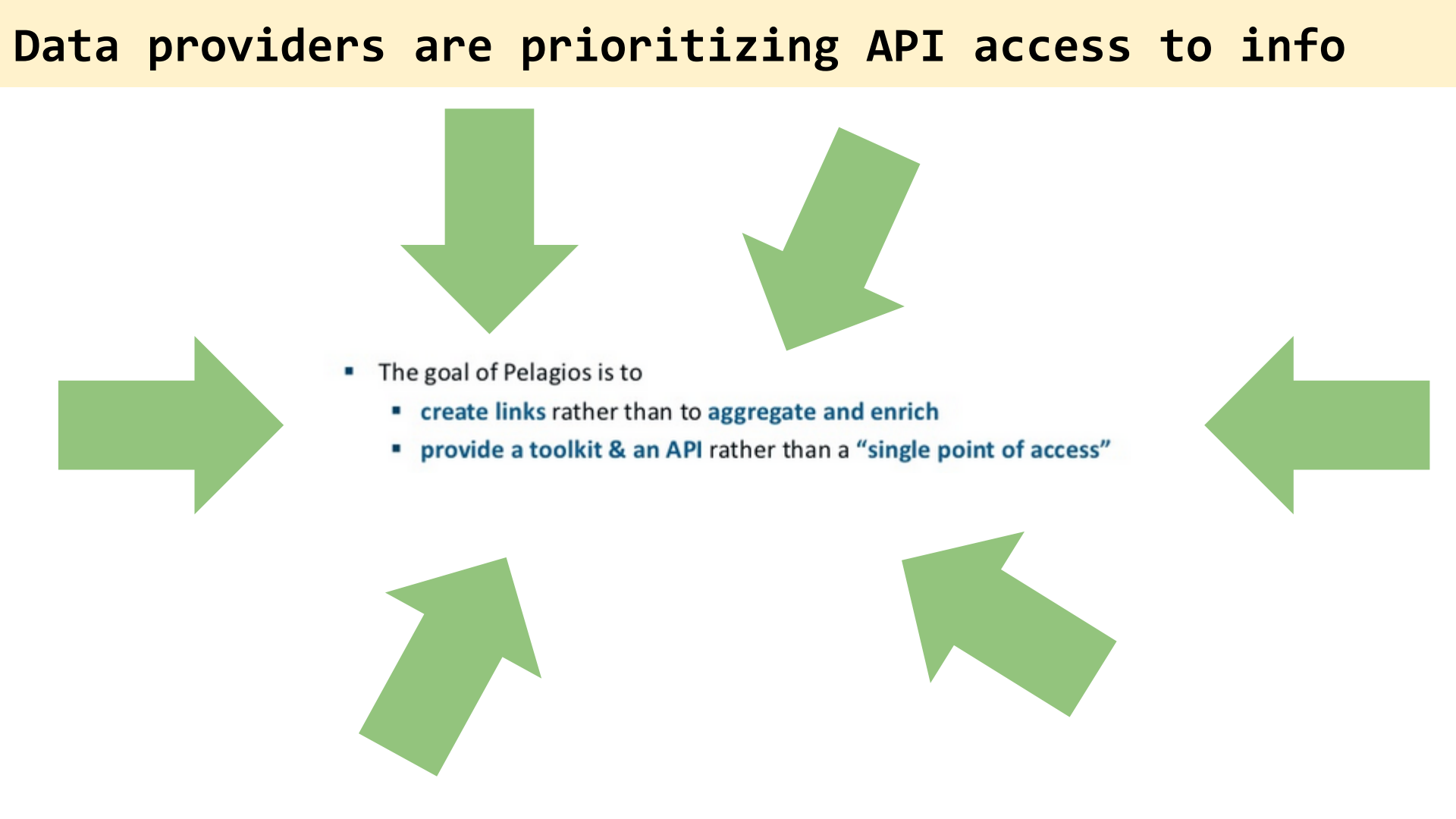
Thought we were done with clip art did you...



Request: "I would like an article about the 1986 Earthquake in Romania"

- 1 Consult Detroit News Index, learn what volume, issue, and page number
- 2 Use microfilm, find and view the article

Data providers are prioritizing API access to info

- 
- The goal of Pelagios is to
 - **create links** rather than to **aggregate and enrich**
 - **provide a toolkit & an API** rather than a “single point of access”

And some libraries are doing it already!



MIT: APIs for Scholarly Resources

- World Bank Indicators

UC Berkeley: Information Studies: APIs for scholarly resources

- HathiTrust Extracted Features Dataset
- WorldCat Identities

API Examples

- [NYPL Menu API \(example\)](#)  
- [HathiTrust Research Center \(data & search\)](#)
 - [“Wayne State University” in title](#)
 - [“Wayne State University” in full-text](#)
- [Summon Search API \(example\)](#)
- [Wayne State University Digital Collections](#)
 - [Sketches and Scraps \(computer & human\)](#)
 - [Lincoln Letter \(computer & human\)](#)
- [BLAST DNA Sequence Database \(query & results\)](#)
- [the Walters Art Museum \(example\)](#)

And then there are not-so-good ones:

- [JSTOR \(example\)](#)

A P/K Reference Desk Prototype

A simple API to handle routine questions at the P/K reference desk:

- Where's the bathroom?
- Where is room 110?
- How much is printing?
- How many parsecs are we *currently* from our nearest neighbor star?

Thanks!
Questions?

References

- Enthusiastic Person: <https://www.flickr.com/photos/imagesfrugales/8154030461/>
- Flashlight: <https://thenounproject.com/term/flashlight/1398>