APIs in the Library

Selected Projects that Expand the Local Information Environment

October 14, 2016

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Devin Higgins

In practical terms

Send a query…

to an API...

and get back information.

In practical terms

Send a query…

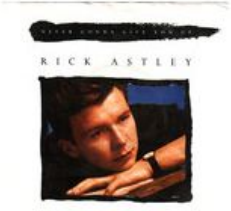
(using a protocol)

to an API...

(via the web)

and get back information.

(as XML or JSON)



More Images

Rick Astley – Never Gonna Give You Up

Label: RCA – PB 41447
Format: Vinyl, 7", 45 RPM, Single
Country: UK
Released: Jul 1987
Genre: Electronic, Pop
Style: Euro-Disco

Tracklist

A	Never Gonna Give You Up	3:32
B	Never Gonna Give You Up (Instrumental)	3:30

Companies, etc.

Phonographic Copyright (p) – BMG Records (UK) Ltd.
Copyright (c) – BMG Records (UK) Ltd.
Phonographic Copyright (p) – Pete Waterman Ltd.
Published By – All Boys Music Ltd.
Distributed By – BMG Records
Distributed By – BMG Ariola
Marketed By – RCA Records
Mastered At – Utopia Studios
Licensed To – BMG Records (UK) Ltd.
Record Company – PWL

Credits

Design – Me Co*
Engineer – Mark McGuire, Mike Duffy
Mastered By – MS*

Release

[r249504]

Edit Release
All Versions of this Release
Data Correct

Add to Collection | Add to Wantlist

Marketplace

55 For Sale from $0.66

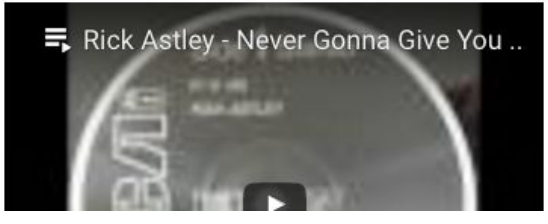
Buy Vinyl | Sell Vinyl

Share

Statistics

Have:	599	Last Sold:	01 Jul 16
Want:	111	Lowest:	$0.55
Avg Rating:	3.37 / 5	Median:	$1.32
Ratings:	65	Highest:	$3.31

Videos (4) Edit



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API Benefits

Why use programming to access machine-readable information?

- Build API into larger systems
  - Create code for web page: web page uses weather API; web page selects today's high temp from API response; displays high temp to user (next to info from other APIs: recent tweets?)
- Run hundreds/thousands of queries in sequence
  - Library example: Political Science researcher wants to count and evaluate news articles written about each of ~600 militia groups.

In practical terms

Send a query…

to an API...

and get back information...

in order to use it in a way that would have otherwise been difficult or impossible.

https://api.nasa.gov/planetary/earth/assets?lon=100.75&lat=1.5&begin=2014-02-01&api_key=DEMO_KEY

https://api.nasa.gov/planetary/earth/assets?lon=100.75&lat=1.5&begin=2014-02-01&api_key=DEMO_KEY

Base URL - The address of the API resource

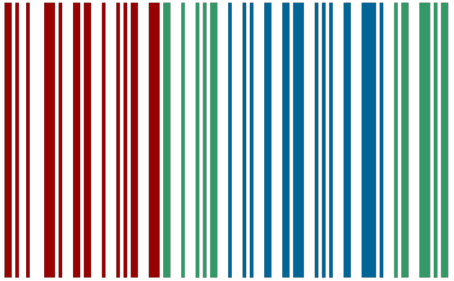
? - precedes the query

& - connects parts of the query

api_key - A unique ID often required by APIs

OCLC

Crossref



WIKIDATA

Discogs

europeana
think culture

WEB OF SCIENCE

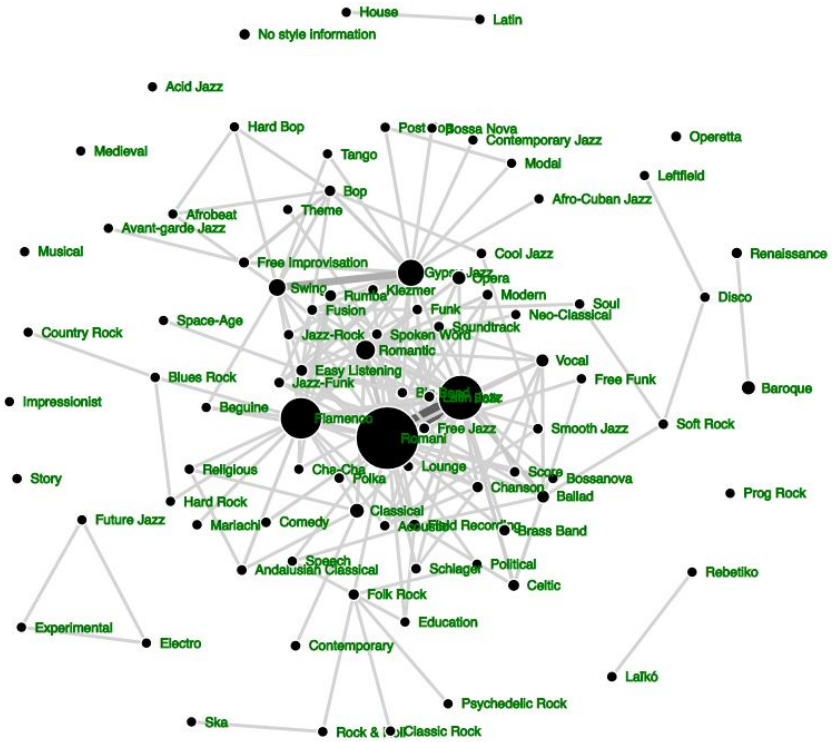
Enhance Metadata

ROVI Collection

- Improve metadata based on user-contributed data

Lockwood Collection

- Create Discogs collection and automatically retrieve and process metadata



Lockwood Collection Styles

Style: Folk

218 releases

Releases

Usnija Redžepova -- Usnija (1982)

Ľudová Hudba Eugena Farkaša -- Slovenské Ľudové Piesne (Slovak Folk Songs) (1971)

Esma Redžepova, Ansambl Teodosievski -- Zošto Si Me, Majko, Rodila (1974)

Ciganski Orkestar "Čubura" -- Ciganske Narodne Pesme I Igre (Gypsy Folk Songs And Music) (1974)

Ivo Papasov & His Wedding Band -- Orpheus Ascending (1989)

Romanies -- Musiche Tzigane (1976)

Olivera Katarina -- Ciganske Pesme (1977)

Romanies -- Magyarországi Cigány Népdalok / Gypsy Folk Songs From Hungary (1976)

Gheorghe Zamfir -- Roumanian Flutes 1 (1975)

Ljubiša Stojanović - Louis -- Ne Kuni Me, Ne Ruži Me, Majko (1982)

Unknown Artist -- The Traveling People Of Ireland: Irish Tinker Music (1967)

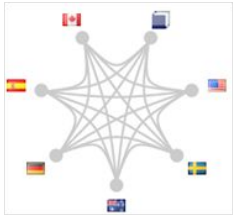
The Travelling Songster -- An Anthology From Gypsy Singers (1977)

Marcel Cellier, Gheorghe Zamfir -- Marcel Cellier Présente La Doina Roumaine - Avec Gheorghe Zamfir (0)

Les Tziganes Ivanovitch -- Gori, Gori Ciganska Ljubav (1982)

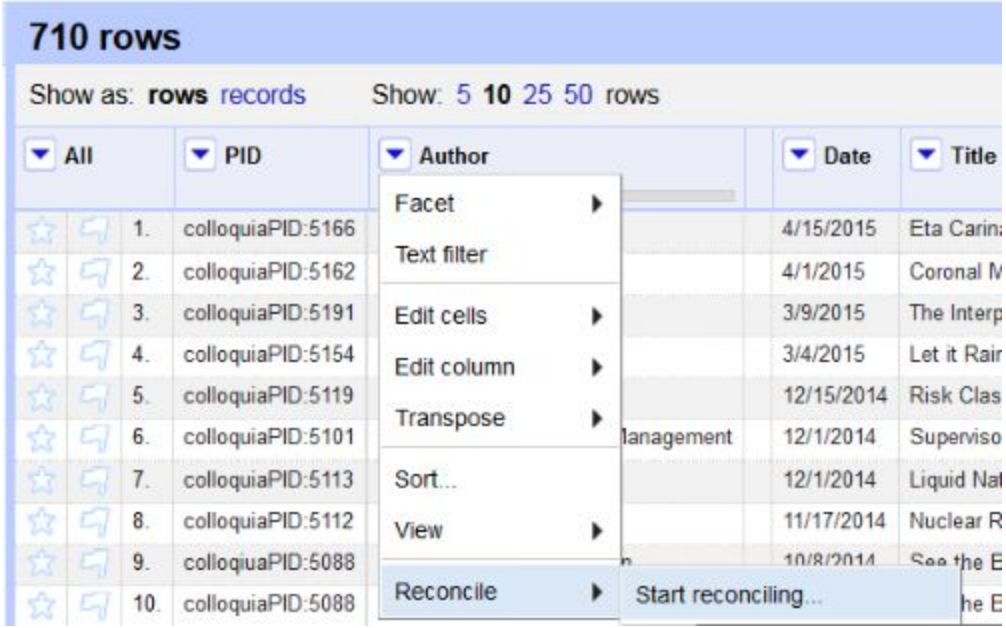
Visualization of Musical Styles from Lockwood Collection

Retrieve URIs



Create linked data

- Search by name or subject
- Retrieve unique URI
- Use URI to connect further data sources and/or gather contextual information



[Open Refine Reconciliation Service]

Aggregate Materials

SiRO (Studies in Radicalism Online)

- Define list of relevant queries
- Run (hundreds of) queries
- Transform the results into RDF XML

List of search terms (subject headings):

abolitionists movements,
anarchism,
bacchanalia,
christianity and atheism,
controversial literature,
etc.

Send a query to DPLA for each, for example:

http://api.dp.la/v2/items?q=*abolitionists movements*&*api_key*=*KEY*
http://api.dp.la/v2/items?q=*anarchism*&*api_key*=*KEY*
etc.

Digital Scholarship

Text Assembler

- Gather material for text/data mining
- Work within restrictive retrieval parameters

MICHIGAN STATE UNIVERSITY

MSU Libraries | Text Assembler

Ask a Librarian
Account
Events

Powered by LexisNexis®

User ID: higgi135

Search | My Corpus Download Queue | Logout

Search

Instructions: Select source(s), construct search, and preview results. If preview results look appropriate, assign a Corpus Name and queue for download. Downloading is queued for nights and weekends. Please plan ahead to ensure sufficient time to retrieve results. For more guidance consult the step by step instructions.

Available Sources: No Publication Type(s) Selected [Apply Publication Type Filter]

No Title(s) Selected [Add Titles]

Selected Title Ids:

Search Method: (?) Boolean

Date Range: From: 08/09/2016 To: 08/09/2016 ☐ No Date Range

Search Query:

[Preview Results]

Your Corpus Name: [Queue Corpus for Download]

Citation Analysis

WEB OF SCIENCE

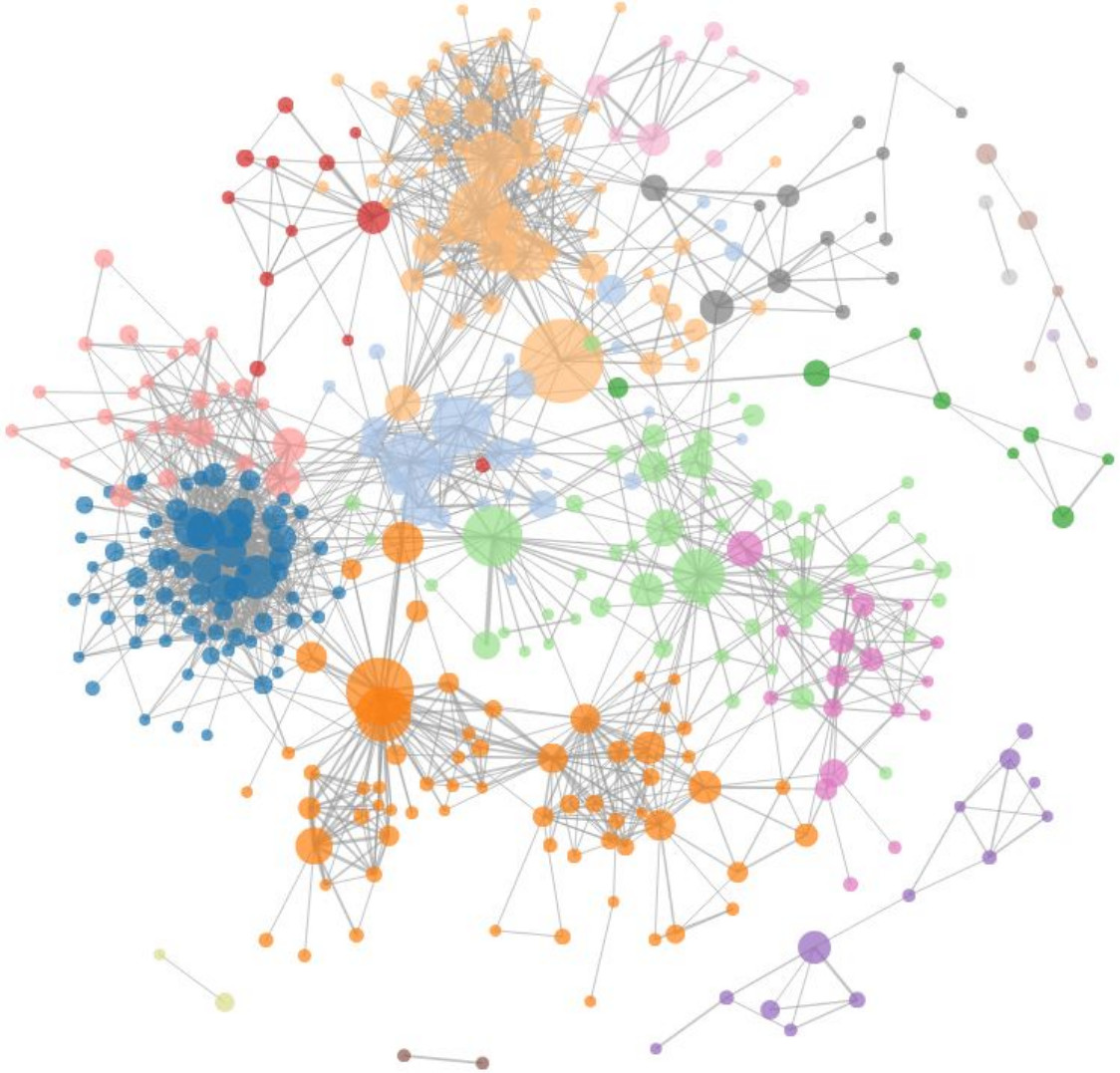
Example: Ecology Literature

- Run set of searches for distinct plant types
- Compare citation patterns

Start with one query to Web of Science
Retrieve all cited works

Query for each cited work
Retrieve all of its cited work

[Repeat]



Network of citations in sociology papers

Code to Access A Few APIs

https://github.com/MSU-Libraries/discogs

https://github.com/MSU-Libraries/dpla-api

https://github.com/MSU-Libraries/wos

How have you used APIs in your work?

Have you seen API resources contribute to student / faculty research?