Using and Understanding APIs, 1/8/17

NEASIST, Simmons College

Highlights:

- Harvard Art Museum: API documentation in GitHub (see example projects near the bottom)
- Smith College: Bento Discovery UI, Visual Browse

9:00 | Getting Started with APIs

Amber Stubbs, Assistant Professor, Simmons College
Amber Stubbs is an Assistant Professor in the Computer Science Department and School of Library and Information Sciences at Simmons College, where she teaches a variety of programming-related classes, including how to leverage information from APIs. Her research is in the area of Natural Language Processing.

- Ebay was one of the first sites to provide an API
- API provides a standard way to access existing tools/infrastructure
- REST: REpresentational State Transfer - built on existing HTTP protocols, using URIs that describe where the info is and how to get there
- Websites with APIs have data they want users to access, provided in a computer-friendly format, using URLs to access the data, and providee the data specification
- https://swapi.co (Star Wars API) - gives planet specifications
- Most common data formats are XML or JSON - both more or less readable by humans and represent hierarchical data, JSON has fewer characters and takes up less space (XML adds up fast) but doesn't have strict data specifications
- JSON (JavaScript Object Notation)
- Requires programming: she uses Python3 and the Requests library
- When accessing APIs: be kind to the servers, obey the rules, don't exceed data limits, save data locally (don't request new data every time you run your program) - you can get banned
- Sample code and data: https://web.simmons.edu/~stubbs/API/ - contains the API code and a file with already downloaded data (need to download the request library)
- Some APIs require an authentication key
- APIs help to democratize data and move us towards more customized app and web experiences - literally, the future of the internet

- Slides have many links of resources

10:15 | Enhancing Content Discovery through APIs

Rob O'Connell, Director of Discovery and Access, Smith College Library
Rob O'Connell has been the Director of Discovery and Access at Smith College since 2013. He was previously the Head of Technical Services at Higher Colleges of Technology in the United Arab Emirates. Rob has been working with APIs and discovery systems for the past 10 years and has created several tools based on their architecture including Smith College's new bento box interface.

Four API examples they have developed:

1. **SIS (in-house inventory system)**
    - had to move a million items off campus, created to manage their offsite high-density storage facility
    - Application, not web-based; Aleph XML and REST; Aleph paging slips
    - Uses API to load into the SQL database
    - Searches the SQL database, then uses API to get associated metadata from Aleph ILS
    - Uses API to "suck in" paging slips from Aleph for retrieval
2. Bento Discovery
    - U of Alabama's Bento interface was inspiration
    - EDS API - primary search
    - DPLA API - content search
    - Google images API
    - Browzine's API for journal content - allows cover images and connect to SFX, pretty nice, but a tad bit slow
    - Uses Handlebar for templates - helps with different content displaying different fields
    - Loaded on the fly via AJAX (allows user to understand something is happening)
    - Can customize which buckets show, that is kept in the URL, so you can link to specific layouts
    - Guerilla testing - they get a lot of great feedback! It looked a lot different to start and changed a lot based on user feedback; track a lot of data - if we see patterns we can change what displays based on those; they also review the boxes to see which are being added and which removed and prioritize those, and also what info to add to the screen; they do a LOT of usability testing of their products
    - How big is your team? He is the only developer, the UX team is 4 people - testing team from 4 different departments; seems to work well for faculty and students - still offer advanced tools, Bento is just the starting point.

3. Advanced Discovery
    - Provide a seamless experience from bento to advanced
    - Shows what users are searching for/popular searches
4. Visual browse: https://libtools.smith.edu/browse/movie.php
    - Provide a Netflix style search experience
    - Use large images and broad categories
    - Took 3 years to get this in a good place
    - Can reuse a lot of the code
    - Uses “Buck heard”? to get feedback on what isn’t working

11:15 am | Fun & Games with APIs

Jeff Steward, Dir of Digital Infrastructure and Emerging Tech, Harvard Art Museums
Jeff Steward directs the museums on the use of a wide range of digital technology. He oversees the collections database, API, and photography studio. For the opening of the new Harvard Art Museums in November 2014, he helped launch the Lightbox Gallery, a public research and development space. Steward has worked at museums with museum data since 1999. Areas of research include visualization of cultural datasets; open access to metadata and multimedia material; and data interoperability and sustainability.

- API documentation in GitHub - datasets are available!
- APIs aren’t that complicated, the challenge is figuring out what to do with them
- 250K art objects: paintings, coins, 10Ks of photos
- We know a lot of stuff about our objects - tons of metadata
- Will drift between APIs and services (they are similar)
- HAM API, IIIF presentation services, color extractor service; Harvard has a few they use too
- Brand identity has a different color for each day of the week!
- Use Google Analytics data, color extractor, GoogleVision
- Instead of a floor plan, uses a tree view that can expand, or a “pack graph”(?)
- Data set graphed over time (visually stunning), using colors of the images themselves
- Suns explorer - HAM API, Color Extractor (gives 6-8 dominant colors, can use with your own images)
- IIIF (beautiful spec!) and Google Vision (face recognition in images) - face scramble!
- Recognize words in images and use them for magnetic poetry (looks like ransom note); double-clicking on any word will show you the same image “magic message”
- APIs are contracts between computers
- How much of this is driven by researchers? Not much - we are pushing this; we have yet to see a lot of people interested in this stuff besides the digital humanities folks; we don’t publicize this stuff; it’s a very self-selecting group. His focus tends to be the museum staff. They used some data visualizations to help understand gaps in collection (but sounds like it was minimal?).

- Can look at different trends in collecting (were they gifts, purchased, donors?).

1-4pm | API Demonstrations

Brad Coffield - APIs for Librarians and Saint Francis University Library

- Provides HTML, CSS, and JavaScript/Json

Eben English - Digital Commonwealth

Kayla Hammond - formerly of the Boston Open Data Project

Doug Loynes - OCLC

- Sandbox keys that are throttled so you can experiment.
- API explorer
- DevConnect - OCLC developer conference (2nd is in the works)
- Lots of APIs to help with workflows, talked about these at the conference (MarcEdit - ready to go, just need your own credentials)
- IIIF
- Digby - student worker tasks on their phone

Martha Meacham - E-utilities from the National Center for Biotechnology Information (the people behind PubMed)
We're sorry to announce that this E-utilities demo is canceled, as of 1/5/18. For people who are interested in this resource, there will be some self-guided activities to explore.

Whitney Christopher & Ian Callahan - Harvard Art Museum

Use API to feed signage in the courtyard. Events, hours, maps as API services.

David Moore - WBUR and the NPR API

- NPR created groundbreaking API 10 years ago (still says beta!)
- Get Chrome ext that prettifies the json data
- Uses NPR feed to choose national stories to add to WBUR web site
- Wordpress and Drupal plugins (need a key) - learn on Codecademy
- “APIs: a strategy guide” (O’Reilly) - very high-level book that the NPR guy (Daniel Jacobson) helped write - a little old
- Public Media Platform (NPR and other public media creators) - in limbo now, but this tech will replace the current API

Bill McKinney, Ellie Collier, David Podboy - EBSCO