

An Array of Open Source Initiatives

From the Geospatial Librarian World

Frank Donnelly, Baruch College CUNY

Role of GIS Librarians and Professionals

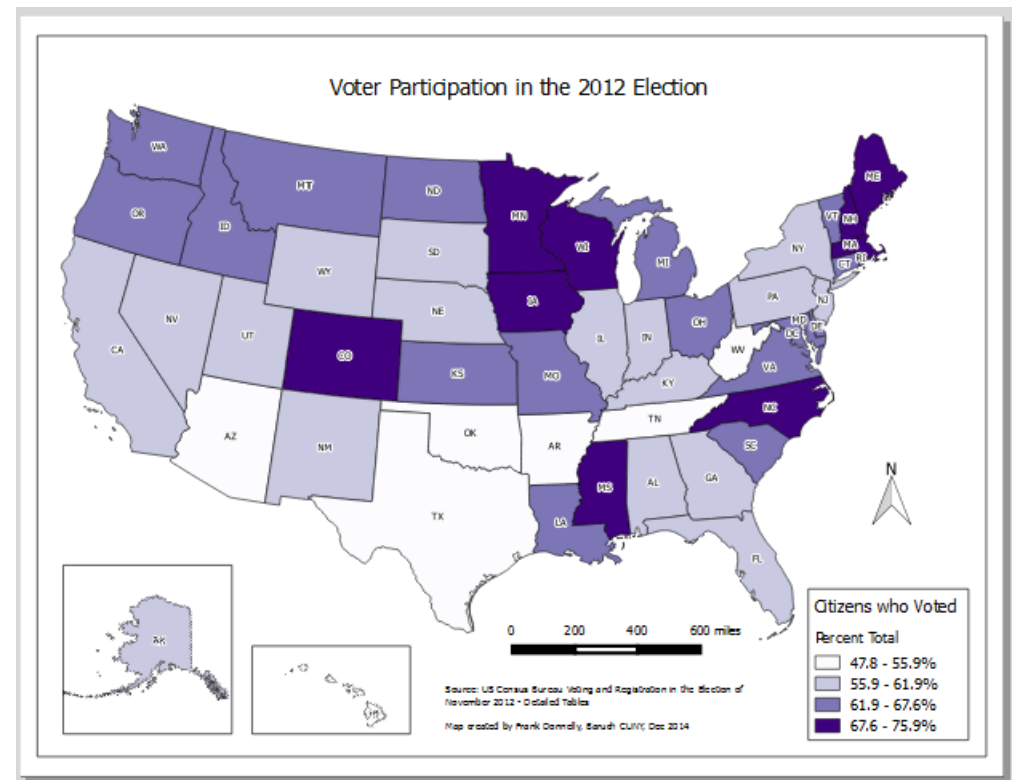
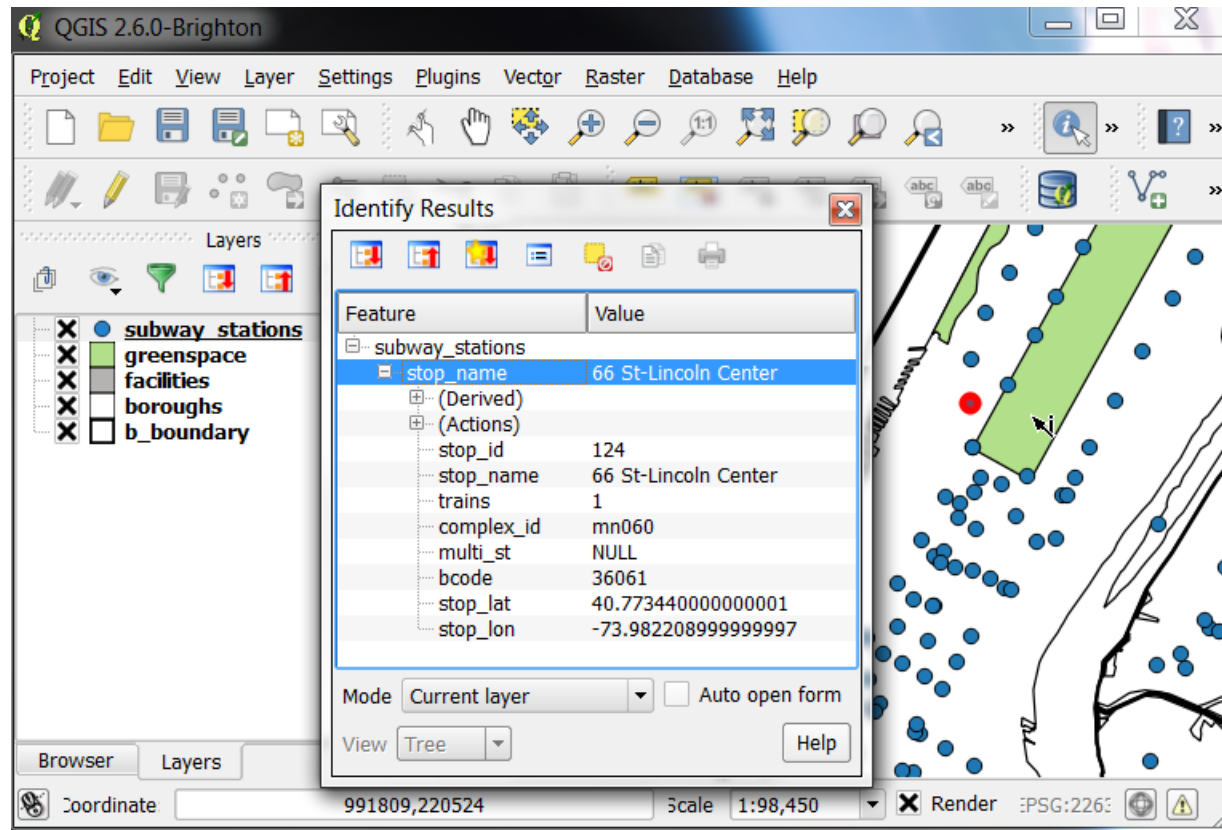
Provide Services in Academic Libraries & Labs:

- Education: consultations, workshops, tutorials
- Data: locate, process, collect, add value
- Metadata: implement, create and document

Today: examples of open source GIS resources at Baruch CUNY and throughout the academic library / lab community

Education: QGIS Workshops at Baruch

“Introduction to GIS Using Open Source Software”



Baruch Geportal

Pages

Blog

SPACE SHORTCUTS


- GIS Lab
- GIS Practicum
- NYC Geodatabase

PAGE TREE

- About Us
- Datasets
- Resources
 - Census Tutorials
 - GIS Practicum**
 - NYC Geographies
 - QGIS Raster Tutorial

Space tools

GIS Practicum

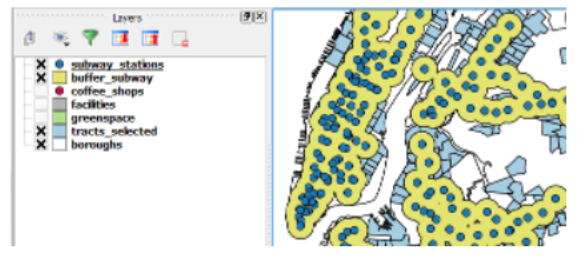
 Resources on this page are licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](#).

This manual is used in the day-long workshop held at Baruch each semester, which is open to Baruch and CUNY affiliates. For more information and registration visit the [practicum page on the GIS Research Guide](#). *NOTE: if you are participating in the hands-on workshop you will be given a bound, printed version in class.*

Anyone and everyone is welcome to use this tutorial for personal or classroom use under a Creative Commons BY-NC-ND license. However, you may not copy and re-host this material on another website.

[Introduction to GIS Using Open Source Software](#)
6th edition (July 2015)

- [Tutorial Manual \(PDF\)](#)
- [Data file \(ZIP\)](#)



[QGIS Software for Download](#)

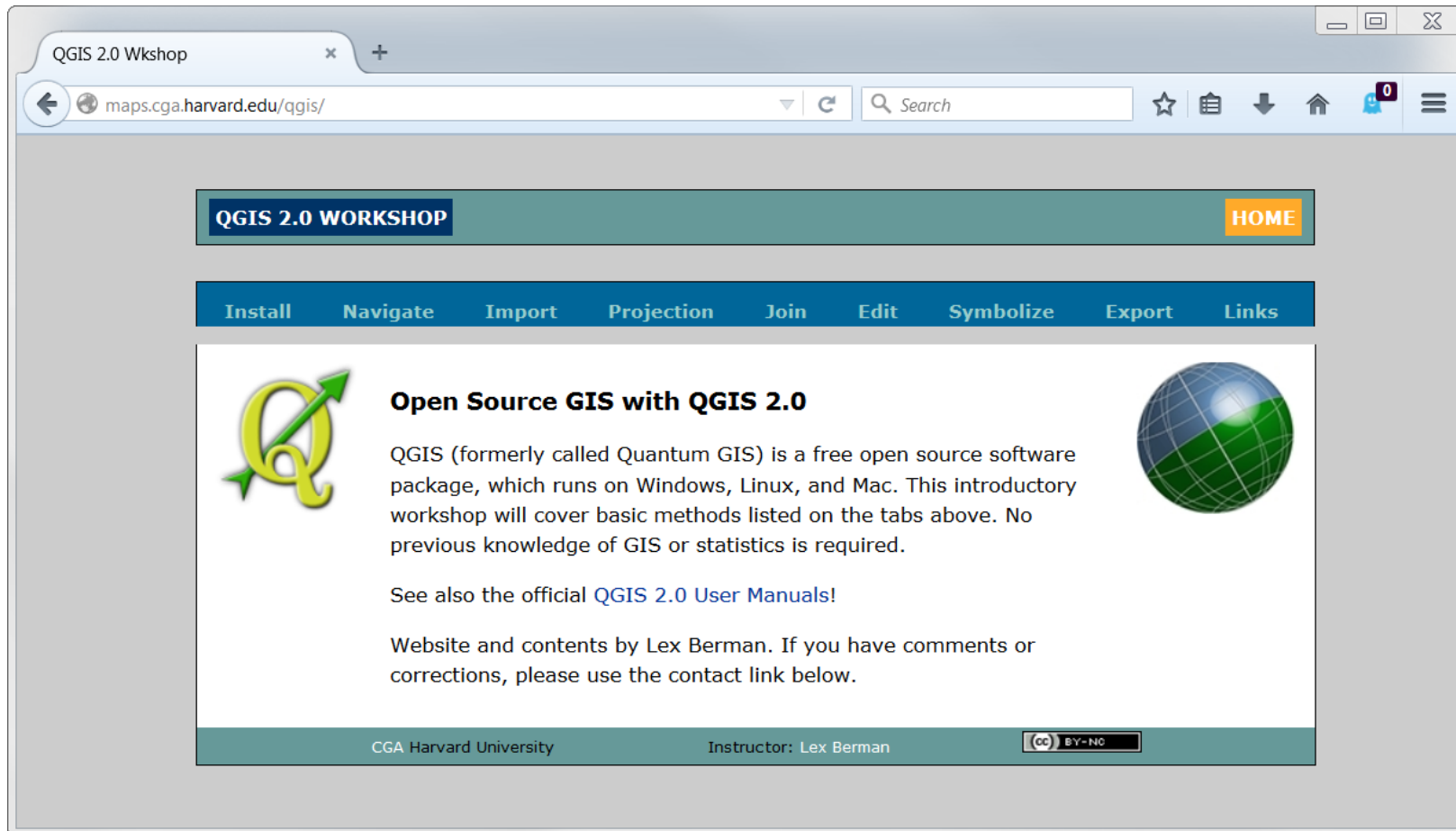
The manual was written for QGIS version 2.8 (Wien). Because there are enough differences between versions you should download and install 2.8 if you are taking the workshop.

- MS Windows users: [QGIS 2.8 \(32 bit\)](#) - or - [QGIS 2.8 \(64 bit\)](#)
- MAC users (OS X Lion and newer): Download and install [GDAL Complete 1.11 Frameworks](#) 1st, [Matplotlib](#) 2nd, and [QGIS 2.8](#) 3rd.
- Linux users should consult the [QGIS download page](#) and follow the instructions to download the 2.8 release version for your distro.

The [QGIS website](#) defaults to the most recent release version for downloading (as of July 2015, 2.10 Pisa is the most recent release).

Education: Online Tutorials

Lex Berman, Harvard University



The screenshot shows a web browser window with the following elements:

- Browser Tab:** QGIS 2.0 Wkshop
- Address Bar:** maps.cga.harvard.edu/qgis/
- Navigation Bar:** QGIS 2.0 WORKSHOP (left), HOME (right)
- Menu Bar:** Install, Navigate, Import, Projection, Join, Edit, Symbolize, Export, Links
- Main Content Area:**
 - Image:** QGIS logo (a stylized 'Q' with a green arrow pointing up and right).
 - Section Header:** **Open Source GIS with QGIS 2.0**
 - Text:** QGIS (formerly called Quantum GIS) is a free open source software package, which runs on Windows, Linux, and Mac. This introductory workshop will cover basic methods listed on the tabs above. No previous knowledge of GIS or statistics is required.
 - Text:** See also the official [QGIS 2.0 User Manuals!](#)
 - Text:** Website and contents by Lex Berman. If you have comments or corrections, please use the contact link below.
 - Image:** A 3D globe showing the Earth with a green grid overlay.
- Footer:** CGA Harvard University, Instructor: Lex Berman, and a Creative Commons BY-NC license icon.

Data: Librarians Keeping Track

Keith Jenkins, Cornell University

The screenshot shows a web browser window with the Geolode website. The search bar contains "place='New York'" and the search results are displayed in a list. The left sidebar shows filters for "place", "topic", and "tag".

Geolode place="New York" Search Login

Searched for: **New York** 1 - 20 of 25 items, sorted by **date created** JSON next

place sort A-Z

- New York (25)
- Connecticut (2)
- Pennsylvania (2)
- Buffalo (1)
- Cayuga County (1)
- Earth (1)
- Great Lakes (1)
- Illinois (1)
- Indiana (1)
- Maine (1)
- 12 more...

topic sort A-Z

- boundaries (10)
- environment (5)
- property (5)
- society (5)
- transportation (5)
- inland waters (4)
- biology (3)
- elevation (3)
- location (2)
- oceans (2)
- 7 more...

tag sort A-Z

- bathymetry (2)
- parcels (2)
- census (1)
- conservation (1)
- contours (1)
- demographics (1)
- elections (1)
- historical (1)
- hydrography (1)
- kml (1)
- 9 more...

New York Office of Planning and Development Geographic Information Gateway Sep 29, 2015
<http://opdgig.dos.ny.gov/>
New York • biology • boundaries • oceans • inland waters • society • environment • utilities • transportation

Baruch Geoportal Aug 13, 2015
<https://www.baruch.cuny.edu/confluence/display/geoportal/>
Geospatial data repository for Baruch College, City University of New York.
Many datasets are publicly accessible, but some are restricted to Baruch or CUNY affiliates.
Earth • United States • New York • New York City • boundaries • economy • society • transportation • population • census • demographics • public transit

Long Island Sound Resource Center Jun 11, 2015
<http://www.lisrc.uconn.edu/lisrc/catalog.asp>
Connecticut • New York • elevation • oceans • geology • bathymetry

Historic USGS Maps of New England & New York May 6, 2015
<http://docs.unh.edu/nhtopos/nhtopos.htm>
New Hampshire • Connecticut • Maine • Massachusetts • Rhode Island • Vermont • New York • basemaps • historical • topographic • maps

Great Lakes Information Network: Maps & GIS Sep 29, 2014
<http://gis.glin.net/>
Great Lakes • Illinois • Indiana • Michigan • Minnesota • New York • Ohio • Pennsylvania

Data: Baruch Geoportal

Repository at Baruch CUNY with geospatial data and other resources

Baruch COLLEGE
The William and Anita **Newman** LIBRARY

Confluence Spaces

Baruch Geoportal

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Baruch Geoportal Home

The Baruch Geoportal is a repository maintained by the Newman Library at Baruch College, CUNY that provides geospatial data and resources. Many of these resources and datasets are publicly accessible, while some are restricted to Baruch College or CUNY affiliates.

Subscribe to our feed to get the latest updates posted on our blog. Baruch faculty and staff can also log in to Confluence and watch these pages for updates.

Datasets - GIS and tabular datasets available for download or by request
Resources - tutorials, reference sources, crosswalks, and maps
About Us - information about geospatial services and the GIS Lab at Baruch
GIS Research Guide - for a basic intro (site located outside the portal)

Recent space activity

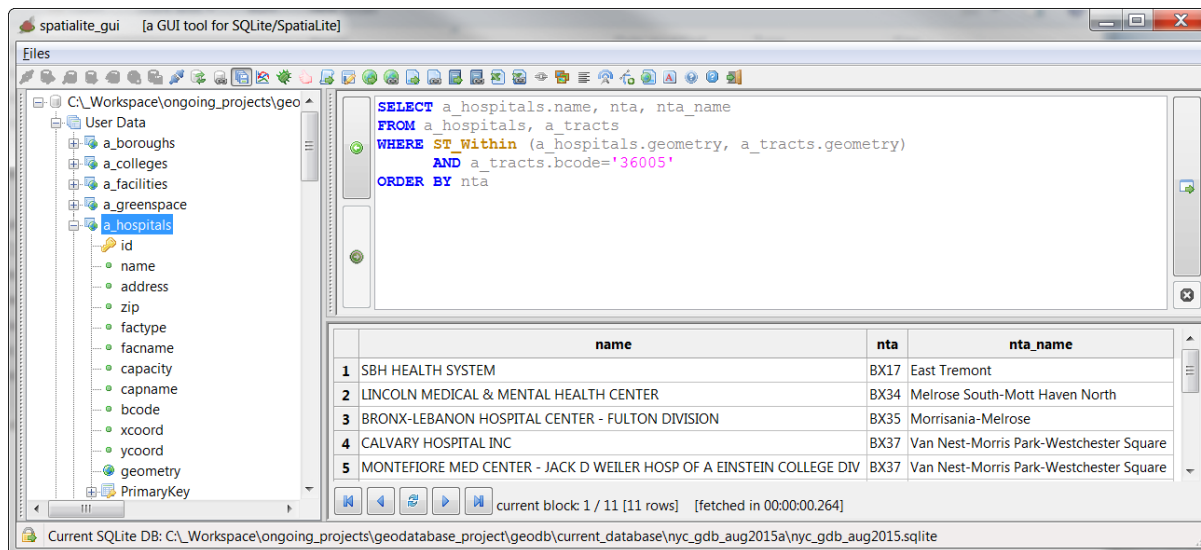
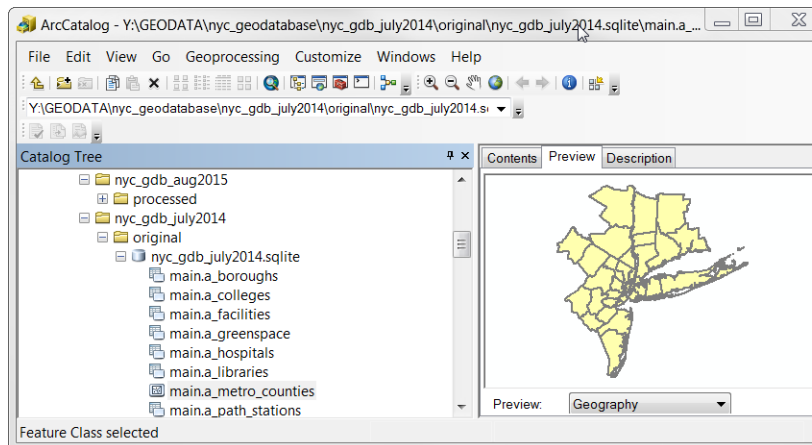
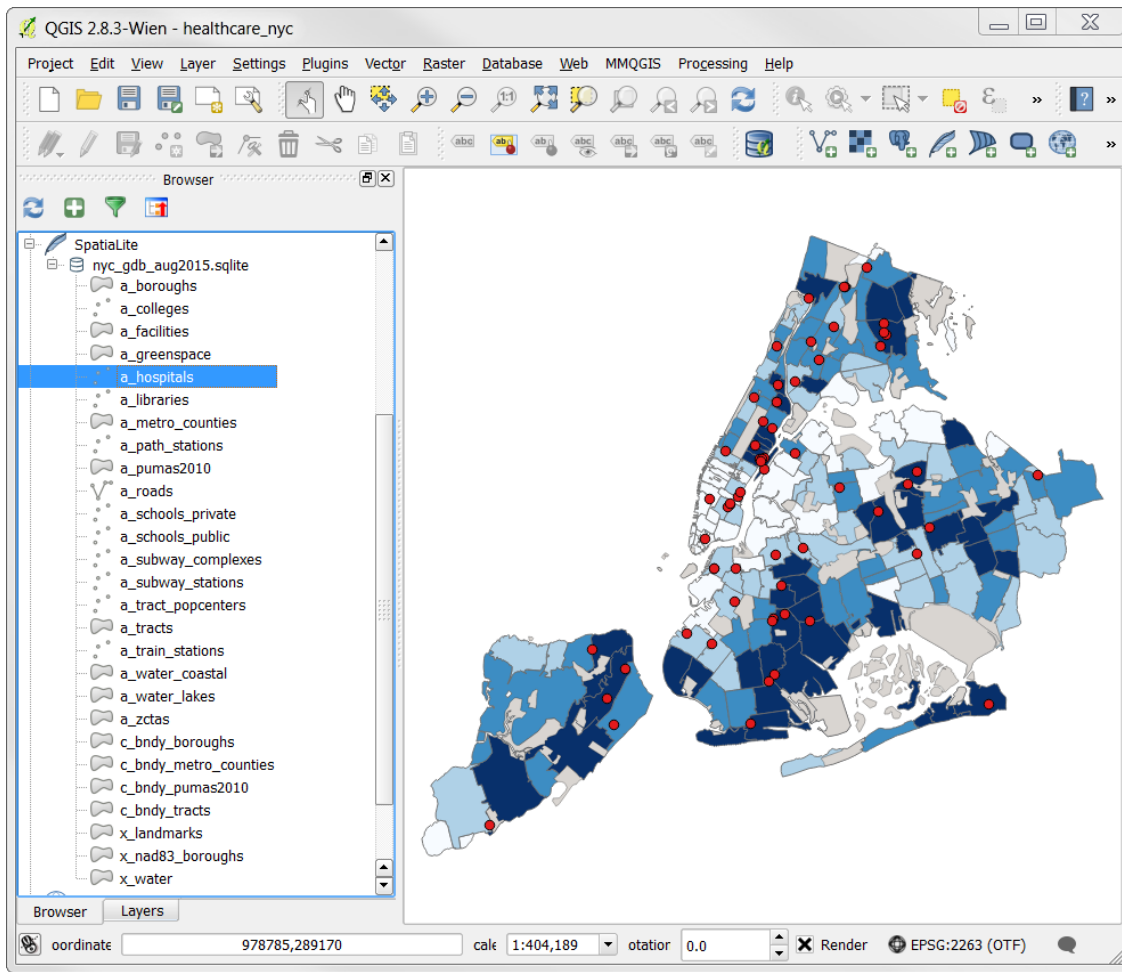
- China Data Center Datasets
Oct 08, 2015 • updated by Francis Donnelly • view change
- Census Tutorials
Oct 08, 2015 • updated by Francis Donnelly • view change

Popular content (pages viewed)

Baruch Geoportal Home	554
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NYC Geodatabase	44

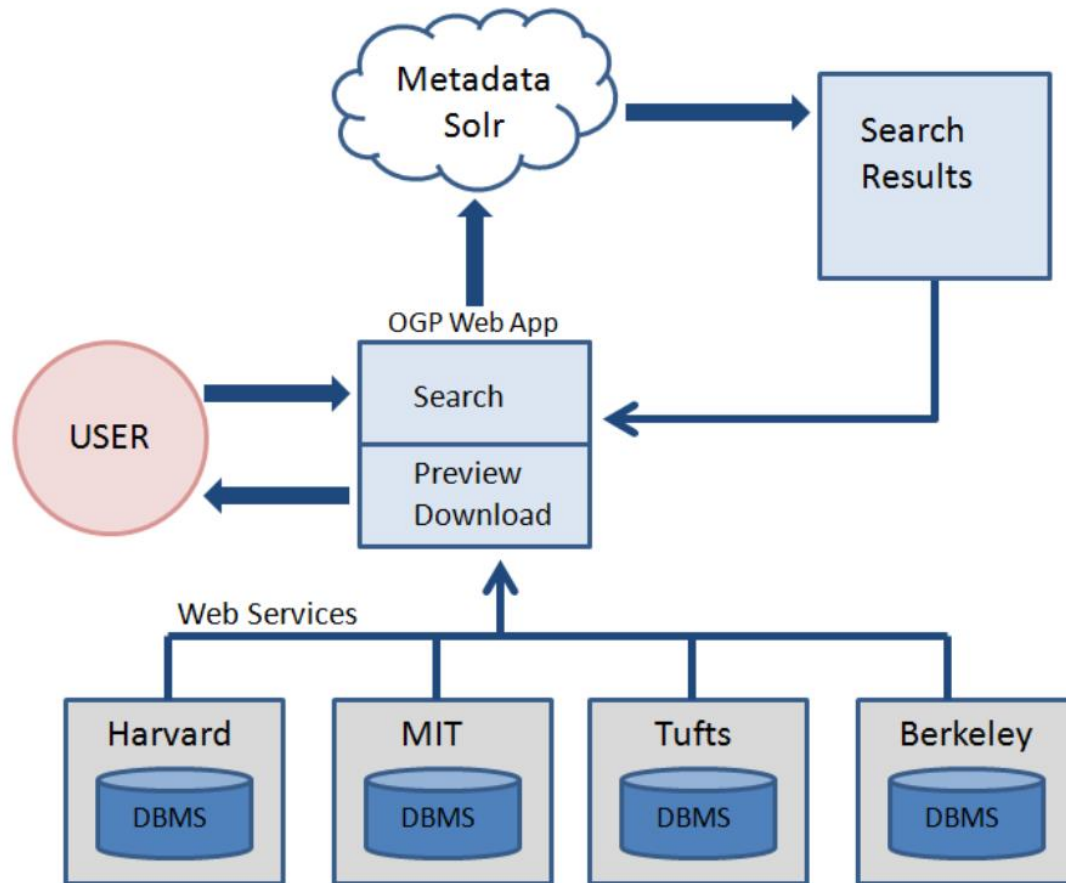
Data: NYC Geodatabase

Publicly available features and census data for NYC in Spatialite



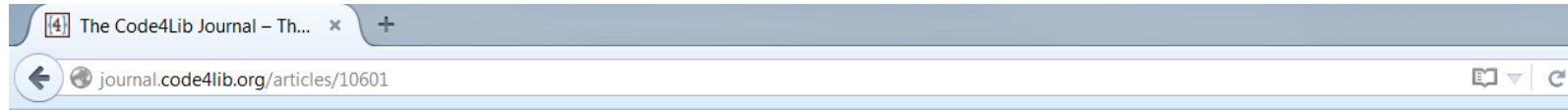
Data: The Open Geoportal

Chris Barnett and Steve McDonald, Tufts University



Metadata: Geospatial Cataloging

Code4lib Journal is open access, publically available



code{4}lib
JOURNAL

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The Geospatial Metadata Manager's Toolbox: Three Techniques for Maintaining Records

Managing geospatial metadata records requires a range of techniques. At the University of Idaho Library, we have tens of thousands of records which need to be maintained as well as the addition of new records which need to be normalized and added to the collections. We show a graphical user interface (GUI) tool that was developed to make simple modifications, a simple XSLT that operates on complex metadata, and a Python script with enables parallel processing to make maintenance tasks more efficient. Throughout, we compare these techniques and discuss when they may be useful.

By Bruce Godfrey and Jeremy Kenyon

Introduction

As academic and research libraries move further into building research data collections, a growing number will become familiar with geospatial metadata formats and standards. A common feature of geospatial metadata formats – as opposed to those such as Dublin Core or MODS – is the granularity of description with which they are encoded. Contact information, data distribution services and methods, and a myriad of other details all are specified at the element and attribute levels. In many cases, geospatial technology is designed to take advantage of this rich description. However, the cost of being highly granular is the requirement to keep the content of records up to date as people come and go, web services change, and even data is updated (Wayne 2005).

Metadata: Wrestling with ISO

Workflow and tools used at Baruch CUNY

Metadata format: ISO 19139

Subway Routes, New York NY, May 2015

ISO 19139 metadata content

- Resource Identification Information
- Spatial Representation Information
- Reference System Information
- Data Quality Information
- Distribution Information
- Metadata Information

Resource Identification Information

CITATION

TITLE Subway Routes, New York NY, May 2015

PUBLICATION DATE 2015-05-29

EDITION may2015

PRESENTATION FORMAT mapDigital

SERIES

NAME NYC Mass Transit Spatial Layers

RESPONSIBLE PARTY - POINTOFCONTACT

ORGANIZATION'S NAME Newman Library, Baruch CUNY

CONTACT'S POSITION Geospatial Data Librarian

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CITY New York

ADMINISTRATIVE AREA NY

POSTAL CODE 10010

COUNTRY UNITED STATES

```
Python 3.4.1: verify_isometa.py - Y:\GEODATA\verify_isometa.py
File Edit Format Run Options Windows Help
import os
from time import strftime
from xml.etree.ElementTree import ElementTree

#Create two reports that will contain errors and a list of checked values, named for the current
#time and date, in a directory immediately below the one where the script is stored. Two files will
#be generated that contain all the checked information for all metadata stored in the directory.

rootdir='processed/'

today=strftime('%Y_%m_%d_%H%M')

writeprob=open(rootdir + 'error_report' + today + '.txt','w')
writenoprob=open(rootdir + 'valcheck_report' + today + '.txt','w')

#Open all files that end with _iso.xml and parse them.

for file in os.listdir(rootdir):
    if file[-11:]=='_export.xml':

        checkfile=file
        path=rootdir+checkfile
        tree = ElementTree()
        root = tree.parse(path)

#A dictionary of namespaces, so they can be referred to in shorthand.

namespaces = {
    'gmd': 'http://www.isotc211.org/2005/gmd',
    'gco': 'http://www.isotc211.org/2005/gco',
    'gml': 'http://www.opengis.net/gml'
}

#Lists of all the specific elements that must be checked, separated into logical groups.
#Namespaces of the elements are referred to using shorthand.

header1=[
    'gmd:fileIdentifier/gco:CharacterString',
    'gmd:language/gmd:LanguageCode',
    'gmd:characterSet/gmd:MD_CharacterSetCode',
    'gmd:hierarchyLevel/gmd:MD_ScopeCode'
]
```

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