

Open Source Web Based GIS Application

ABSTRACT

Beside some open source GIS libraries and software like ArcGIS there are comparatively few open source, web-based and easy to use application that are capable of doing GIS processing and visualization. To address this, we present GISCube, an open source web-based GIS application that can store, visualize and process GIS and GeoSpatial data. GISCube is powered by Geothon, an open source python GIS cookbook. Geothon has a variety of Geoprocessing tools such data conversion, processing, spatial analysis and data management tools. GISCube has the capability of supporting a variety of well known GIS data formats in both vector and raster formats, and the system is being expanded to support NASA's and scientific data formats such as netCDF and HDF files.

CURRENT FEATURES

- Supports variety of GeoSpatial formats such as: Shapefile, GeoJSON, KML, netCDF and GeoTIFF
- Accessing metadata for supported formats
- Visualizing data in projection on fly
- Exporting map
- Creating raster tiles on fly
- Variety of GeoSpatial tools such as conversion from one format to others, conversion from one geometry to others, spatial analytics, data management

FUTURE FEATURES

- REST API
- Accessing data through DAAC and other data providers
- Supporting HDF file
- Supporting visualization with D3
- More GeoSpatial processing tools

TECHNOLOGIES

GDAL / OGR:
Geospatial Data Abstraction Library, is a library for reading and writing raster and vector geospatial data formats.
<http://www.gdal.org/>

NETCDF4:
Python library for netCDF4 data format
<http://netcdf4-python.googlecode.com/>

HDF5:
Python library for HDF data format
<http://www.hdfgroup.org/HDF5/>

DJANGO:
Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design.
<https://www.djangoproject.com/>

RESOURCES

<https://github.com/MBoustani/GISCube>
<https://github.com/MBoustani/Geothon>

SPONSORS



STORY:

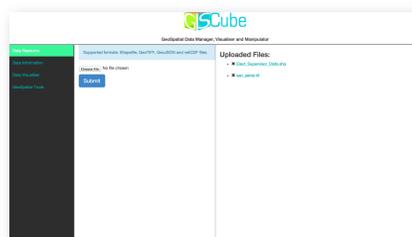


Fig1:
Uploading Shapefile and GeoTIFF using Data Resource page



Fig2:
Visualize San Francisco aerial image (GeoTIFF) using Data Visualizer page

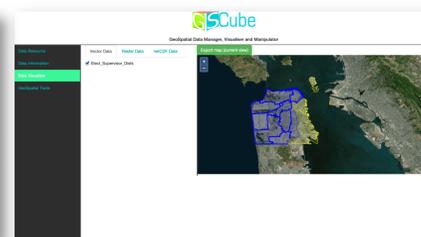


Fig3:
Visualize San Francisco supervisorial districts (Shapefile) using Data Visualizer page

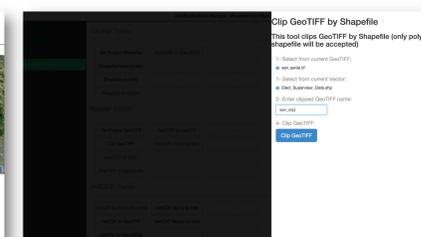


Fig4:
Select "Clip GeoTIFF" tool from Tools page under raster section. Select both GeoTIFF and Shapefile from list and enter name for new clipped GeoTIFF, then click "Clip GeoTIFF"



Fig5:
Visualize new Clipped GeoTIFF using Data Visualizer page



Fig6:
Export the map using Data Visualizer page