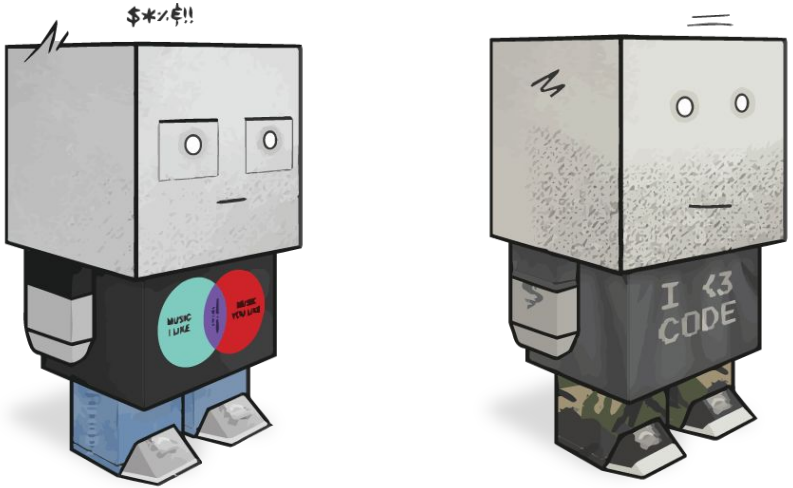
FOSS4G:UK

LOCAL 2022

Dave Barter - What's In Your FOSS Box?

NAUTOGUIDE



Locaria

https://github.com/nautoguide/locaria

SURREY HEATH
BOROUGH COUNCIL

showing information about:
"Surrey Heath Council Offices"

GU15 3HD

CHANGE LOCATION

Planning

Use the below distance filters to update the information displayed.

Results for 0 - 10 miles

Show distance in miles

Filter these results:

By distance:

Up to 1 mile from my location

- [x] Application
- [x] Conservation Area

Less than **0.1** miles

Land At St. Tarcisius School Off Knoll Road Camberley Surrey.

Type: Tree Preservation Order **Reference:** TPO/17/90

View details

Less than **0.1** miles

Land On The South Side Of London Road Jolly Farmer And Knoll Road Camberley Su

Type: Tree Preservation Order **Reference:** TPO/7/71

View details

Less than **0.1** miles

Land At St. Tarcisius School Off Knoll Road Camberley Surrey.

Type: Tree Preservation Order **Reference:** TPO/17/90

View details

Less than **0.1** miles

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View details

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showing information about:
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CHANGE LOCATION

Planning

Type: Tree Preservation Order

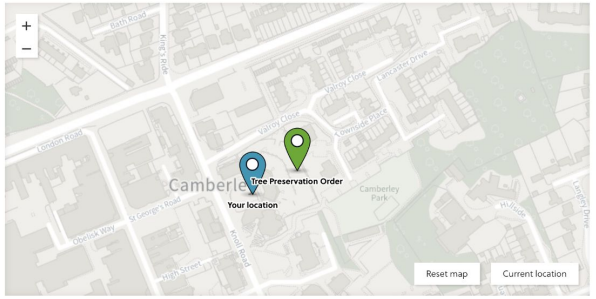
Further information about Tree Preservation Orders can be found on the Surrey Heath Borough Council website.

Land At St. Tarcisius School Off Knoll Road Camberley Surrey.

Reference: TPO/17/90

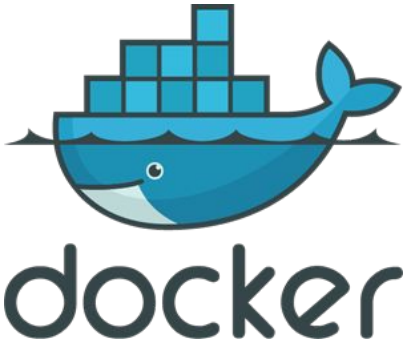
Order Type: A Group TPO

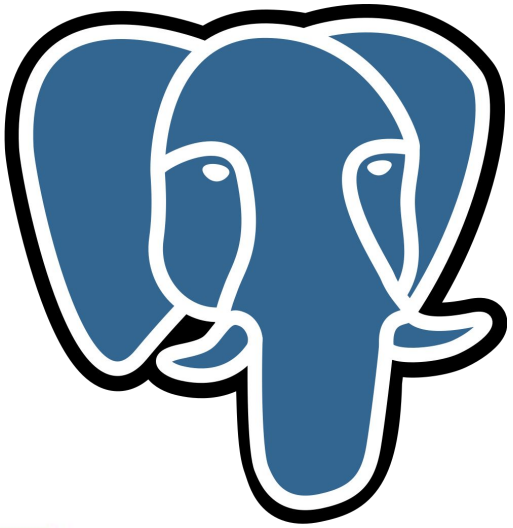
Location:



My FOSS Box ™


PostGIS


docker



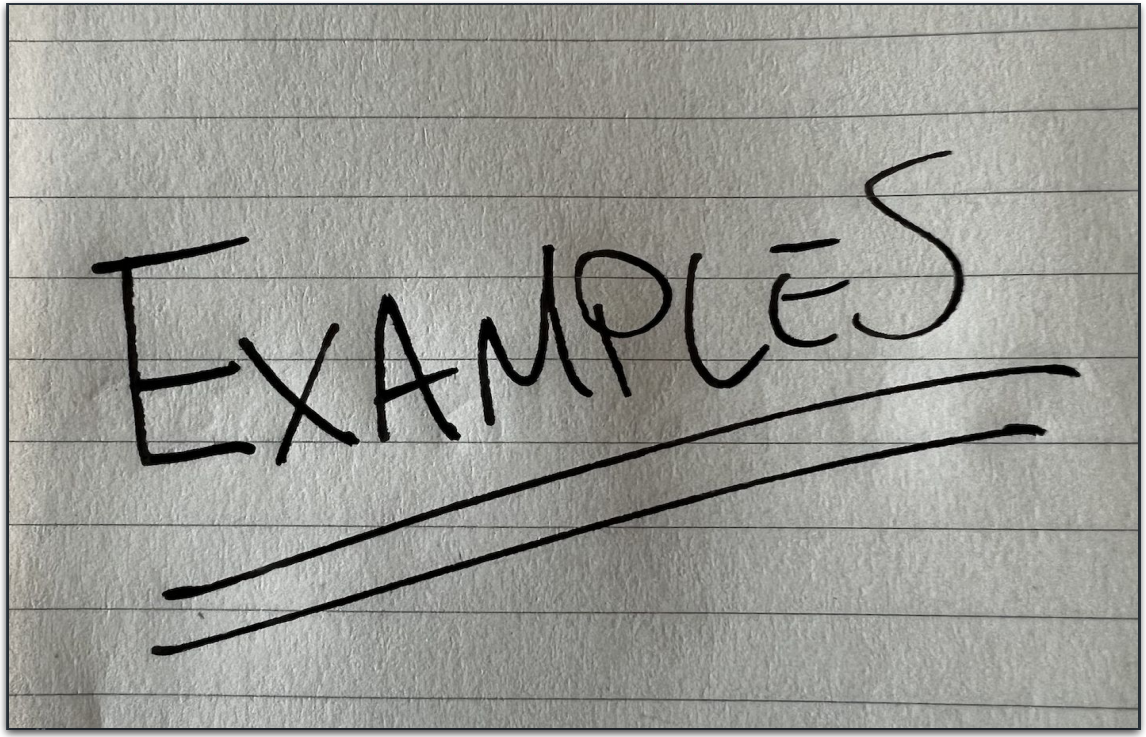

GDAL


QGIS


python™

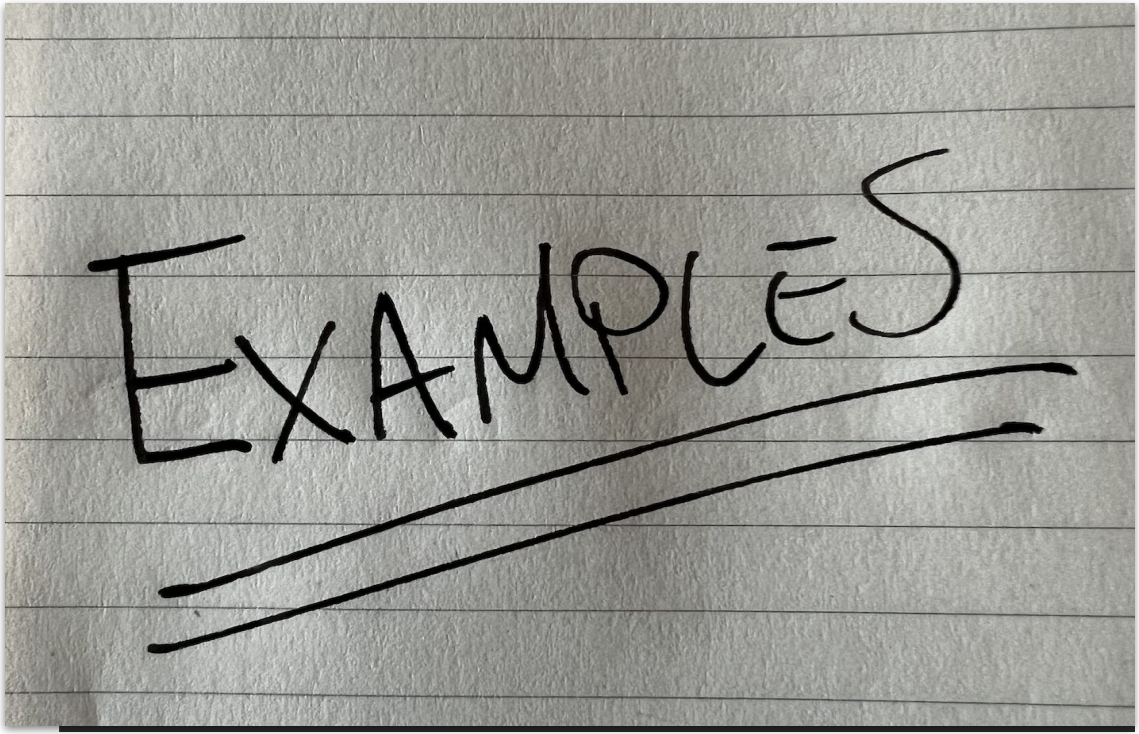
PostgreSQL Functions

- Functionality in the database
- In database API
- Excellent json support
- “Data only” testing
- Reuse
- Javascript (or perl/R/Python…)
- Logging and error trapping
- Extensions (pg_routing, pg_cron)



What “can’t” you do in PostGIS

- Simplification
- Proximity and BBox searches
- Creation of Vector Tiles
- Clustering



Geospatial data abstraction library

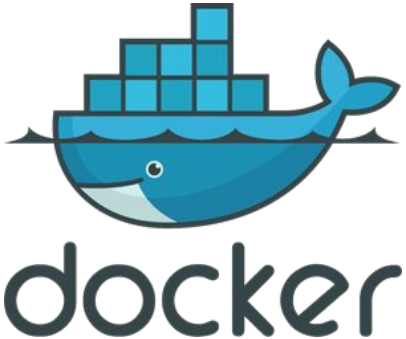
- Loading data
- Exporting data
- Transforming data

```
ogr2ogr [--help-general] [-skipfailures] [-append | -upsert] [-update]
        [-select field_list] [-where restricted_where|@filename]
        [-progress] [-sql <sql statement>|@filename] [-dialect dialect]
        [-preserve_fid] [-fid FID] [-limit nb_features]
        [-spat xmin ymin xmax ymax] [-spat_srs srs_def] [-geomfield field]
        [-a_srs srs_def] [-t_srs srs_def] [-s_srs srs_def] [-ct string]
        [-f format_name] [-overwrite] [[-dsco NAME=VALUE] ...]
        dst_datasource_name src_datasource_name
        [-lco NAME=VALUE] [-nln name]
        [-nlt type|PROMOTE_TO_MULTI|CONVERT_TO_LINEAR|CONVERT_TO_CURVE]
        [-dim XY|XYZ|XYM|XYZM|2|3|layer_dim] [layer [layer ...]]

        # Advanced options
        [-gt n]
        [[-oo NAME=VALUE] ...] [[-doo NAME=VALUE] ...]
        [-clipsrc [xmin ymin xmax ymax]|WKT|datasource|spat_extent]
        [-clipsrcsql sql_statement] [-clipsrclayer layer]
        [-clipsrcwhere expression]
        [-clipdst [xmin ymin xmax ymax]|WKT|datasource]
        [-clipdstsql sql_statement] [-clipdstlayer layer]
        [-clipdstwhere expression]
        [-wrapdateline] [-datelineoffset val]
        [[-simplify tolerance] | [-segmentize max_dist]]
        [-makevalid]
        [-addfields] [-unsetFid] [-emptyStrAsNull]
        [-relaxedFieldNameMatch] [-forceNullable] [-unsetDefault]
        [-fieldTypeToString All|(type1[,type2]*)] [-unsetFieldWidth]
        [-mapFieldType type1|All=type2[,type3=type4]*]
        [-fieldmap identity | index1[,index2]*]
        [-splitlistfields] [-maxsubfields val]
        [-resolveDomains]
        [-explodecollections] [-zfield field_name]
        [-gcp ungeoref_x ungeoref_y georef_x georef_y [elevation]]* [-order n | -tps]
        [[-s_coord_epoch epoch] | [-t_coord_epoch epoch] | [-a_coord_epoch epoch]]
        [-nomd] [-mo "META-TAG=VALUE"]* [-noNativeData]
```

A language for Geo-spatialists

- Pandas
- Geopandas
- 90+ Python libraries

- ArcGIS Python API - ArcGIS API for Python is a Python library for working with maps and geospatial data, powered by web GIS.
- BlenderGIS - A blender addons to make the bridge between Blender and geographic data.
- Cartopy - A library providing cartographic tools for python for plotting spatial data.
- Centroids - This application reads a valid geojson FeatureCollection and returns a valid geojson FeatureColleciton of centroids.
- chupaESRI - ChupaESRI is a Python module/command line tool to extract features from ArcGIS Server map services.
- dask-rasterio - Read and write rasters in parallel using Rasterio and Dask.
- Descartes - Plot geometries in matplotlib.
- eo-box - Earth observation processing framework for machine learning in Python.
- EODAG - Command line tool and a plugin-oriented Python framework for searching, aggregating results and downloading remote sensed images while offering a unified API for data access regardless of the data provider.
- felicette - Satellite imagery for dummies.
- Fiona - IO for GIS Data writted by Python
- FreeType - For converting font glyphs to polygons.
- geemap - A Python package for interactive mapping with Google Earth Engine, ipyleaflet, and ipywidgets.
- geeup - Simple CLI for Earth Engine Uploads.
- geoalchemy - Using SQLAlchemy with spatial databases.
- geobeam - geobeam adds GIS capabilities to your Apache Beam and Dataflow pipelines.
- GeoDaSpace - Software for Advanced Spatial Econometrics.
- GeoDjango - Django geographic web framework.
- geojson-area - Calculate the area inside of any GeoJSON geometry. This is a port of Mapbox's geojson-area for Python.
- geojsonio.py - Open GeoJSON data on geojson.io from Python. geojsonio.py also contains a command line utility that is a Python port of geojsonio-cli.
- GeoPandas - Python tools for geographic data
- Geopatra - Create interactive maps with geopandas
- geopy - geopy is a Python 2 and 3 client for several popular geocoding web services.
- geoserver-rest - The geoserver-rest package is useful for the management for geospatial data in GeoServer. The package is useful for the creating, updating and deleting geoserver workspaces, stores, layers, and style files.
- geosnap - geosnap makes it easier to explore, model, analyze, and visualize the social and spatial dynamics of neighborhoods.
- GIPPY - Geospatial Image Processing for Python.



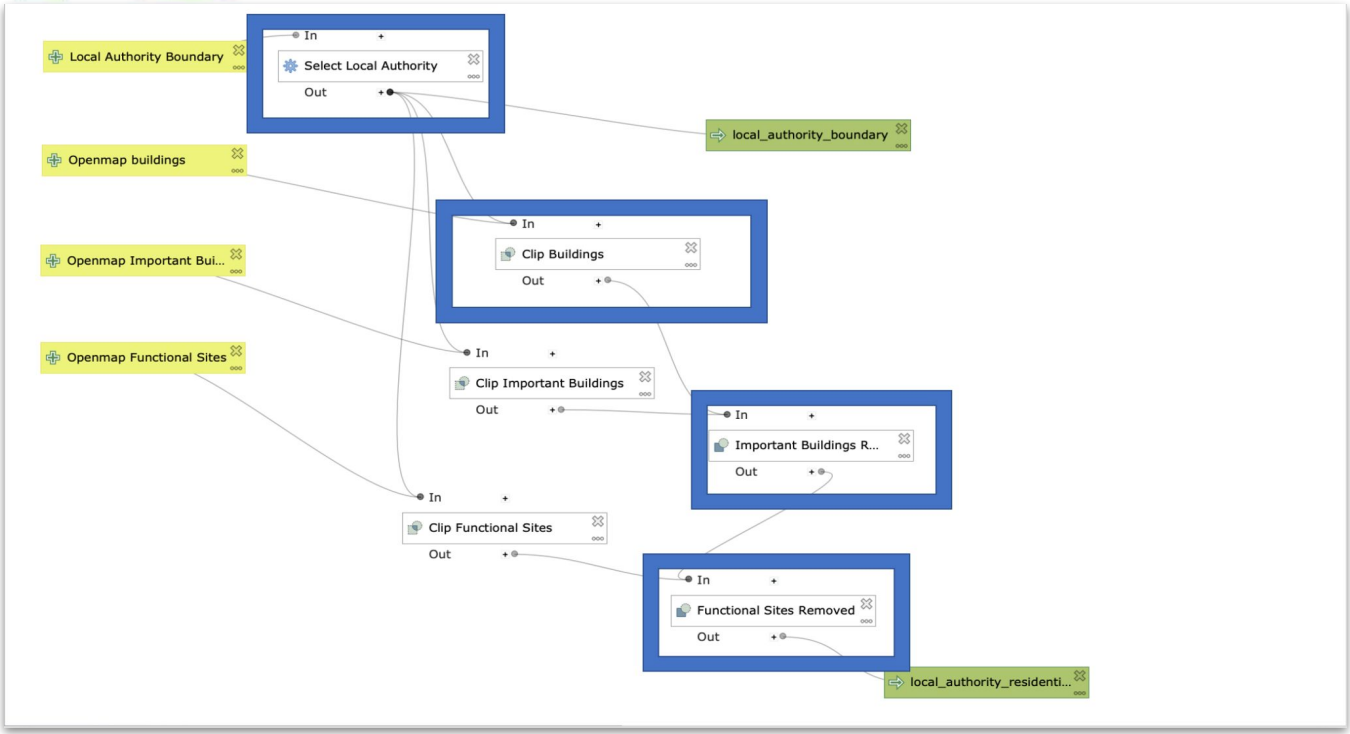
- Curated builds
- Batch processing
- Experimentation

Managing dependency hell

```
FROM osgeo/gdal
WORKDIR /app

COPY .. .

RUN apt-get update
RUN apt install -y python3-pip

RUN pip3 install psycopg
RUN pip3 install boto3
RUN pip3 install requests
RUN pip3 install datetime

ENTRYPOINT python3 file_loader.py
```

The “Swiss Army Knife”

- Community Plugins
- Your Plugins
- Processing



Honourable Mentions

- https://geojson.io/
- https://mapshaper.org/
- https://colorbrewer2.org
- https://github.com/sshuair/awesome-gis

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