http://gismatic.com/dev8d/docs/pg_intro_prep_workshop.pdf

Preparing for workshop

"Building Location Aware Apps – Get Started with PostGIS"

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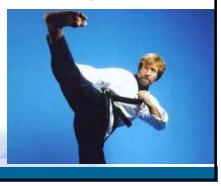
My Aim?

- Stimulate your creativity neurons with something new!
- Give you an ability to integrate spatial technologies in your own stuff!

Space is a natural join between otherwise seemingly unrelated things!

- Save you hours/days of faffing around on your own!
- Give you a kick for accelerated learning of new technology!



Hands-on!
I MUST get you rolling independently!

Today

Mini install-fest & prep work...

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Install software

- **PostgreSQL** with:
  - **PLpgSQL** procedural language
  - **PostGIS** spatial extension
  - **pgAdmin III** graphical user interface
  - **hstore** contribution module
  - **osm2pgsql** OpenStreetMap to PostgreSQL importer
- Optional install:
  - **QGIS** desktop GIS
  - **OpenJUMP** desktop GIS
  - **shp2pgsql-gui** ESRI Shapefile to PostgreSQL importer

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Install PostgreSQL, PostGIS, pgAdmin

EnterpriseDB

- Download PostgreSQL 9.1:
  http://www.enterprisedb.com/downloads/postgres-postgresql-downloads
- Follow the wizard and install database server + pgAdmin III + PostGIS

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Install PostgreSQL - hstore

"hstore" – one of contribution modules

- **PostgreSQL <9.1:**

Execute SQL file **hstore.sql** (C:\Program Files\PostgreSQL\9.0\share\contrib\postgis-1.5\hstore.sql)

```
$ psql -d pg_intro -f
/usr/share/postgresql/8.4/contrib/hstore.sql
```

- **PostgreSQL >=9.1:**

```
CREATE EXTENSION hstore;
```

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Install PostgreSQL – system path

- If not done by installer then:
  - *Add the new directory path to your system variable path*
  - *By default all executables should be in:*

  C:\Program Files\PostgreSQL\9.1\bin

Install PostgreSQL – verify PostGIS

- If not done by installer then:
  - *Create PostGIS database template*
  - *Install PostGIS by executing SQL:*

C:\Program Files\PostgreSQL\9.1\share\contrib\postgis-1.5\postgis.sql
C:\Program Files\PostgreSQL\9.1\share\contrib\postgis-1.5\spatial_ref_sys.sql

- Grant permissions to use PostGIS tables to "public"

```
GRANT ALL ON geometry_columns TO public;
GRANT SELECT ON spatial_ref_sys TO public;
```

Configure PostgreSQL - username

- Create your own username

```
CREATE USER someuser
  WITH CREATEDB
  LOGIN ENCRYPTED PASSWORD 'secret'
  VALID UNTIL 'infinity';
```

Configure PostgreSQL – init db

- Create a new database, e.g. pg_intro from template_postgis:

```
CREATE DATABASE pg_intro
 WITH OWNER = someuser
 TEMPLATE = template_postgis;
```

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Install osm2pgsql

- Wiki: http://wiki.openstreetmap.org/wiki/Osm2pgsql
- Download:
  - Windows - http://tile.openstreetmap.org/osm2pgsql.zip
  - Mac OS X - http://dbsgeo.com/downloads/#osm2pgsql
  - Debian & Ubuntu:
    - Run **`sudo add-apt-repository ppa:kakrueger/openstreetmap`** to add the PPA
    - Run **`sudo apt-get update`** to update your packaging system.
    - Run **`sudo apt-get install osm2pgsql`** to install the osm2pgsql package.
- Windows users:
  - Extract the zip to a new directory on your local disk
  - Add the new directory path to your system variable path
  - Log out and back in so the new variable is active

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Verify osm2pgsql

- Open up command prompt and execute:

```
$ "osm2pgsql -h"
```

- If necessary change directories so that you are located in the extracted osm2pgsql directory
- Help & example use:

```
$ osm2pgsql -h
$ osm2pgsql [options] planet.osm
$ osm2pgsql -c -d pg_intro -U postgres -W –
H localhost -P 5432 C:\tmp\london_small.osm
```

- *Note, on windows it is important to use parameter -S or --style to locate the stylefile, default is a unix like path*

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Download data

Download OSM data (central London)

http://api1.osm.absolight.net/api/0.6/map?bbox=-0.152,51.505,-0.10,51.532

```
$ curl --location --globoff
  "http://api1.osm.absolight.net/api/0.6/map?bbox=-
  0.152,51.505,-0.10,51.532" -o london_small.osm
```

Alternatively take my extract:

http://gismatic.com/dev8d/data/london_small.osm

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OS Open Data – Code Point

- Code Point info:
  - User guide
  - Getting started guide
  - Column headers

http://www.ordnancesurvey.co.uk/oswebsite/products/code-point-open/index.html

- OS Downloads page: https://www.ordnancesurvey.co.uk/opendatadownload/products.html
- Or take my copies:

http://gismatic.com/dev8d/data/codepoint/

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OS Open Data – Boundary Line

- Boundary Line info:
  - User guide and technical specification
  - Getting started guide

http://www.ordnancesurvey.co.uk/oswebsite/products/boundary-line/index.html

- OS Downloads page: https://www.ordnancesurvey.co.uk/opendatadownload/products.html
- Or take my copies:

http://gismatic.com/dev8d/data/bline/

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Desktop GIS Tools

- View database contents
- Create on-the-fly maps

QGIS – Quantum GIS: www.qgis.org

Downloads: http://hub.qgis.org/projects/quantum-gis/wiki/Download#Standalone-Installer-recomm for-new-users

OPENJump: www.openjump.org

Downloads: http://sourceforge.net/projects/jump-pilot/files/OpenJUMP/1.5.1/

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Online docs are awesome!

Click those links! :P

PostgreSQL docs (*****)

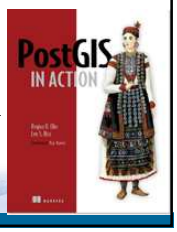
http://www.postgresql.org/docs/9.1/interactive/index.html

http://www.postgresql.org/docs/9.1/interactive/tutorial-table.html

PostGIS docs (*****)

http://www.postgis.org/docs/

http://www.postgis.org/docs/reference.html



Hope, I did not scare you away!
See you on Thursday?
14:00 – 16:00 Room 3B!

- Brief PPT about RDBMS & PostGIS
- Some general exercise with PostgreSQL &SQL
- Hands-on demo building:

Load some OSM London data in a database, have a play with PostGIS and try to answer geographic questions about our neighborhood!

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