# EnvSci 360 – Computer and Analytical Cartography

## Lecture 10

***Mapping with***

***Open Source***

***Desktop GIS Software***

# What is Open Source?

- Sharing (usually free) of technological information
- In computing:
  - Source code is published and made available to the public
    - Anyone can copy, modify, redistribute
    - Pay no royalties or fees
  - Programming languages, operating systems, server and client software, …
  - "Community" cooperation


OpenOffice.org™

# *Why Use Open Source Software?*

- FREEDOM
  - From commercial fees, proprietary code and marketing pressure and "black boxes"


http://www.cioinsight.com/it-strategy/application-development/slideshows/nine-advantages-of-open-source-software.html

https://crowdsourcedtesting.com/resources/pros-cons-open-source-software/

# Open Source GIS Software

- Desktop
  - MapWindow, Quantum, uDig, OpenJUMP, GRASS, …
- Web Server
  - GeoServer, MapServer, …
- Database
  - PostgreSQL (with PostGIS), MySQL, …
- Software Development Framework
  - OpenLayers, OpenStreetMaps, …



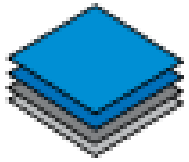



# Open Source GIS Software

- ESRI is NOT the ONLY game in town!!



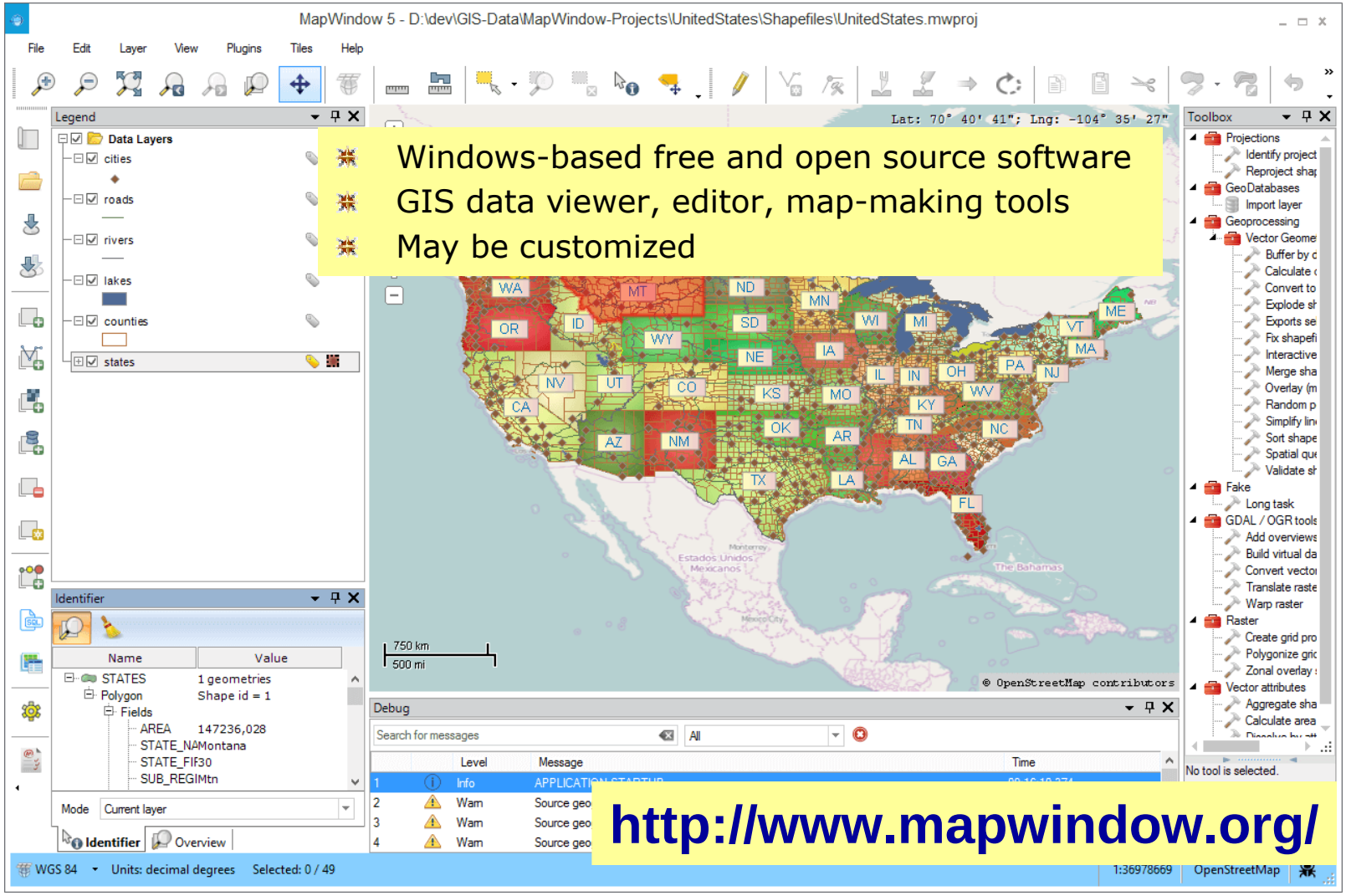








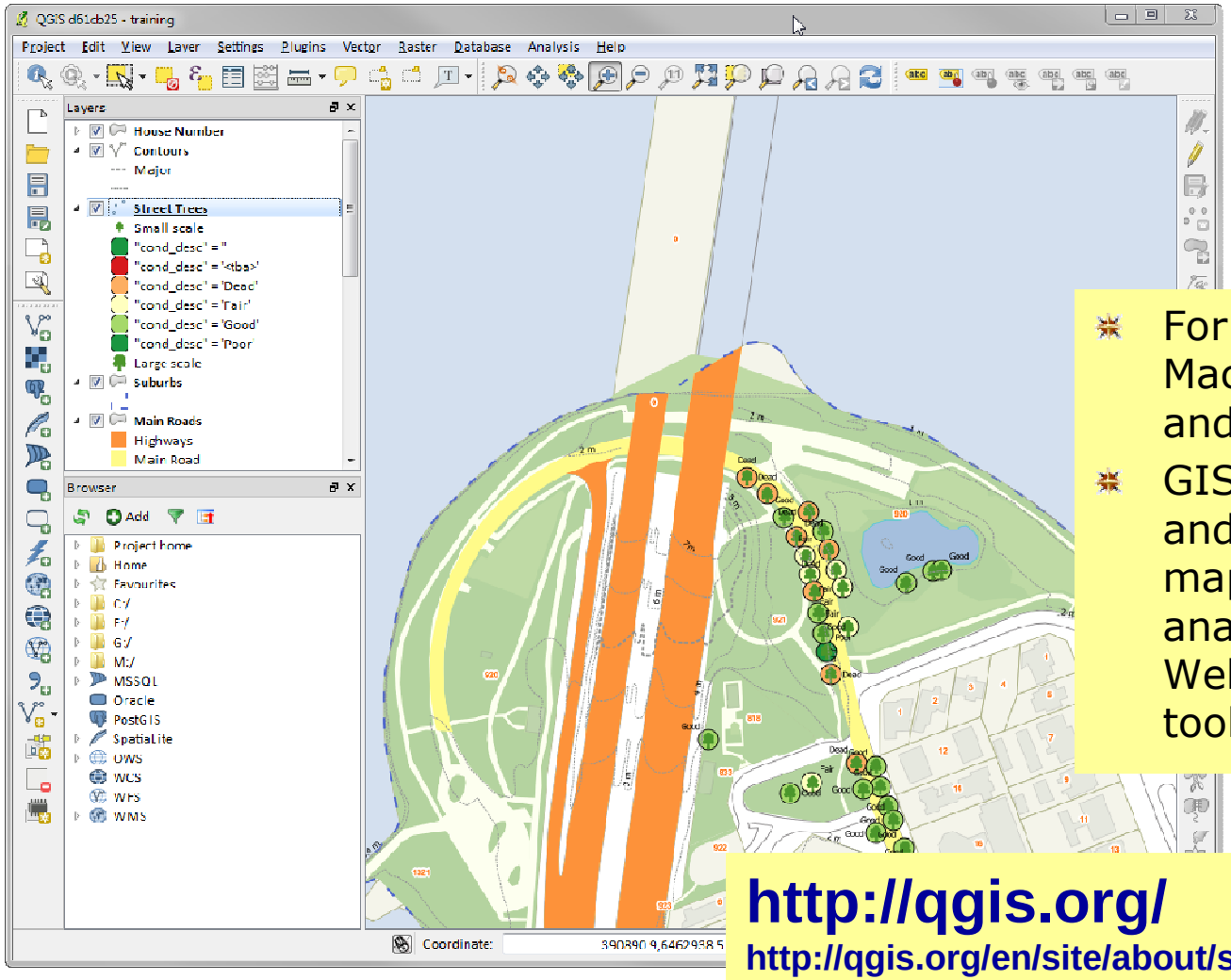

# MapWindow




- Windows-based free and open source software
- GIS data viewer, editor, map-making tools
- May be customized

**http://www.mapwindow.org/**

# Quantum GIS *(aka QGIS)*

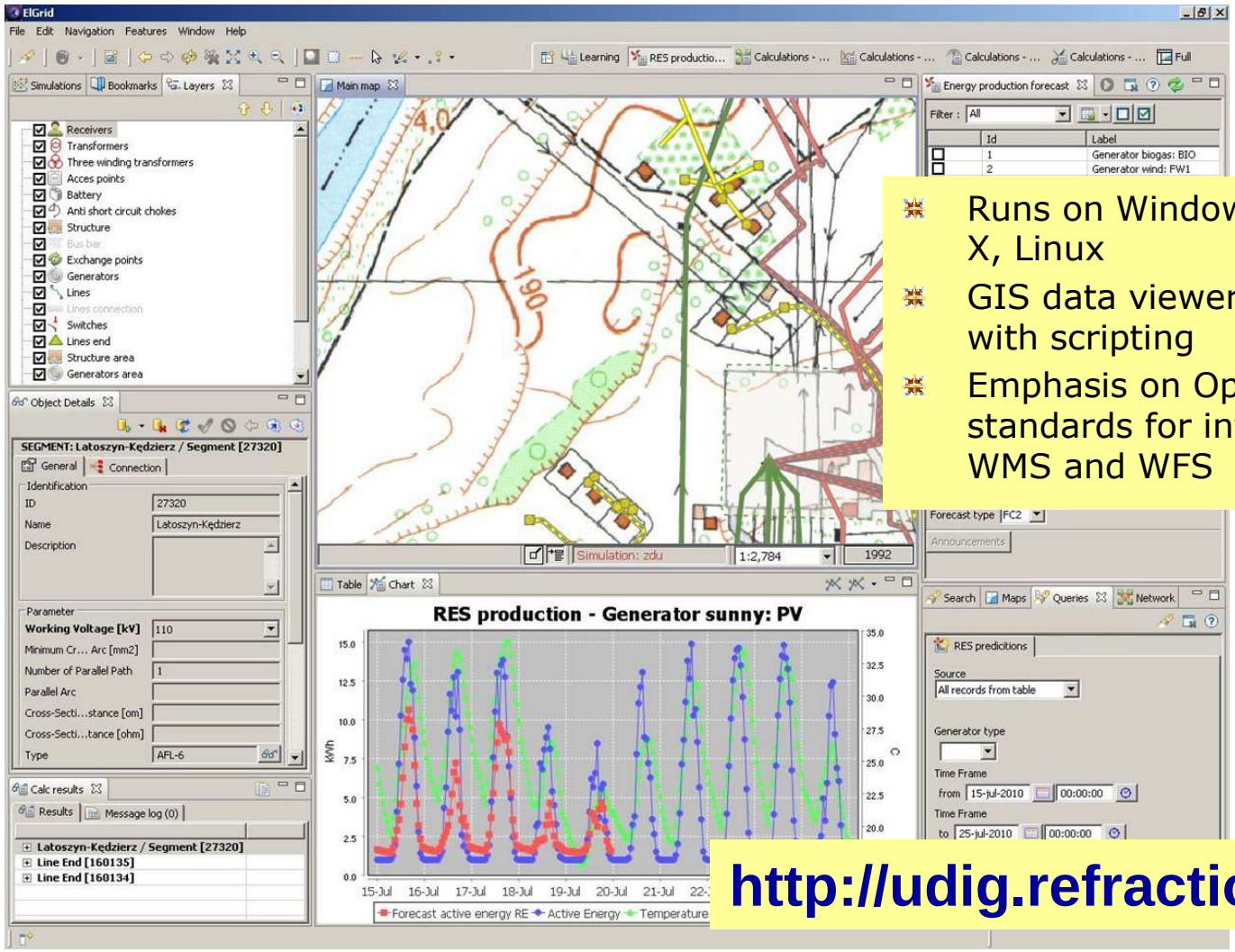



- For Windows, Mac, Linux, BSD and Android
- GIS data viewer and editor, with map-making, analysis, and Web-publishing tools

**http://qgis.org/**

**http://qgis.org/en/site/about/screenshots.html**

# uDig

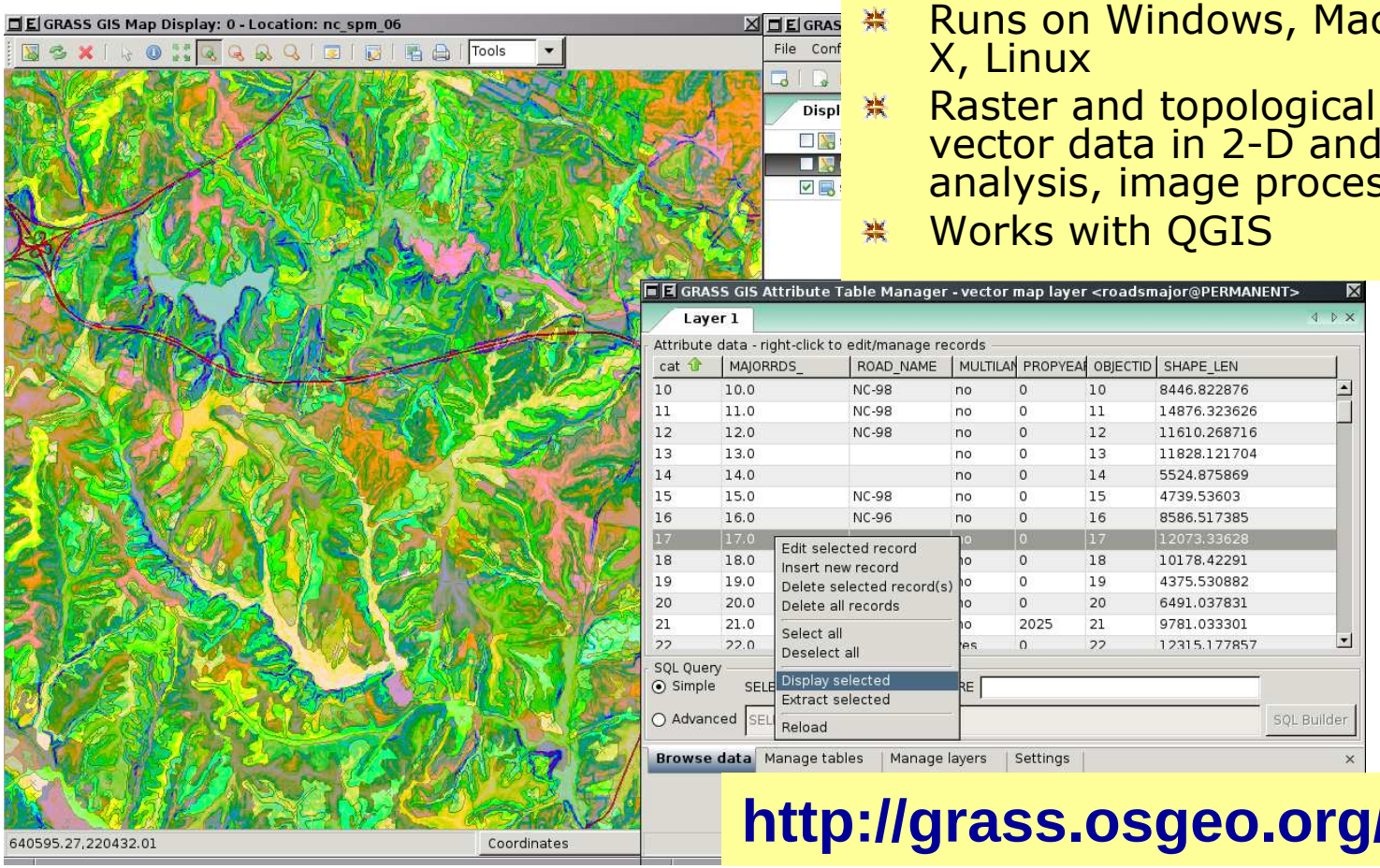



- Runs on Windows, Mac OS X, Linux
- GIS data viewer and editor with scripting
- Emphasis on OpenGIS standards for internet GIS, WMS and WFS

**http://udig.refractions.net/**

# GRASS GIS

- "Geographic Resources Analysis Support System"
- Runs on Windows, Mac OS X, Linux
- Raster and topological vector data in 2-D and 3-D, analysis, image processing
- Works with QGIS




**http://grass.osgeo.org/**

# Resources

- Open GeoSpatial Consortium
  - http://www.opengeospatial.org/
- Open Source GIS
  - http://opensourcegis.org/
- Open Source Geospatial Foundation
  - http://www.osgeo.org/
- List of Open Source GIS software:
  - http://en.wikipedia.org/wiki/List_of_geographic_information_systems_software#Open_source_software
  - http://en.wikipedia.org/wiki/Comparison_of_GIS_software