OpenLayers, GeoExt and PolyMap

Simple Webmapping Clients involving SVG

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About OpenLayers

http://www.openlayers.org/

• A small webmapping Client with minimal GUI
• Embed simple interactive map with a few lines of javascript
• Rapid progress for building webmapping clients, but still flexible
• Extensible: e.g. GeoExt, MapFish
• Themable / Stylable (CSS, your own icons)
• Lot’s of examples, documentation ok - could be more comprehensive
About OpenLayers

• A Webmapping-Client based on modern Webstandards
  • HTML
  • Tiled Rasters (PNG/JPEG/GIF)
  • SVG/VML/Canvas
  • Javascript/DOM (using prototype.js and Rico)
  • XMLHttpRequest
  • CrossBrowser
Development History

• Started 2006 by MetaCarta (after O’Reilly Where 2.0 conf)
• Since 2007 governed by OpenGeospatial Foundation
• Current Stable Release: 2.9.1 (2010-04)
• Today used by thousands of OpenSource and commercial projects, eg. OpenStreetMap, GeoExt, MapFish, etc.
• BSD License
Features

- Basic Map Display
- Navigation (navigation history, linked reference map)
- Display of Non-Graphical Feature Attributes
- Symbolization: SLD, Javascript (closely aligned with SVG)
- Map Decorations: scalebar, grid lines, coordinate display
- Measuring (distance, area; also geodetic), Redlining, Annotations
- Editing of Vector Features (with Snapping)
- Selecting and Filtering Vector Features (spatial and non-spatial)
- Reprojection and Transformations of Vector Features
- Offline Storage and Editing through Gears Database Module and SQLite
Data Providers

- Independent of Specific data source or Server Framework!
- OGC Services: WMS, WFS
- XML: GML, KML
- GeoJSON
- GeoRSS
- OS TileMaps: OpenStreetMap
- Commercial TileMaps: Google, Bing, Yahoo
- Specific MapServers: UMN Mapserver, Geoserver, MapGuide Open Source, ArcGIS, etc.
Some Simple OpenLayers Examples
Where is SVG used in OpenLayers?

• Display of Vector Features loaded through JSON, GML, KML, RSS, etc.
• Editing of Vector Features
• Measurement Tools
• RedLining
• Clientside Symbolization of Vector Features
• One of Three Renderers: SVG, VML, Canvas
Additional Potential use of SVG

- Clientside Thematic Mapping
- Complex Symbolization
- Diagrams and Charts in the Map with Automated Data Binding
- Increased Interactivity and Map Analysis (Displaying Results of Geoprocessing (pot. distributed betw. Server and Client))
- Better Labeling (Text on Path, Collision Detection)
- Brushing: Linking Map with Charts, Diagrams and Raw Data Records
- More Sophisticated GUI Elements, GUI decorations
About ExtJS

http://www.sencha.com/products/extjs/

• Very Sophisticated JS Library for WebApplications
  • Dual License: GPL v3 and Commercial
• Layouts
• GUI Elements
• Data Binding and Data Loading
• Charts (Flash Based ;-( )
• Templates
• Drag and Drop
• Mobile Version: Sencha for IPhone, Android, RIM (all Webkit supported)
• ExtJS GUI Designer (cross platform, based on qt and Webkit)
About GeoExt

http://www.geoext.org/

- Marriage between ExtJS and OpenLayers
- In Development since 2008
- Governed by OpenGeospatial Foundation

- Enables use of more sophisticated GUI elements and Layouts
- Data Mapping directly to Ext GUI Elements, e.g. based on XML, JSON, OGC services, etc.
- Adds functionality and GUI missing in OpenLayers, e.g. printing
Some Simple GeoExt Examples
More Complex Example

Early Prototype of Web-GIS Uster
About PolyMap Polymaps
http://polymaps.org/

• Fully based on SVG (no fallbacks for VML or older browsers)
• Better Interactivity
• More Symbolization Options

Examples: http://polymaps.org/ex/
Discussion, Questions