

JUMP Unified Mapping Platform

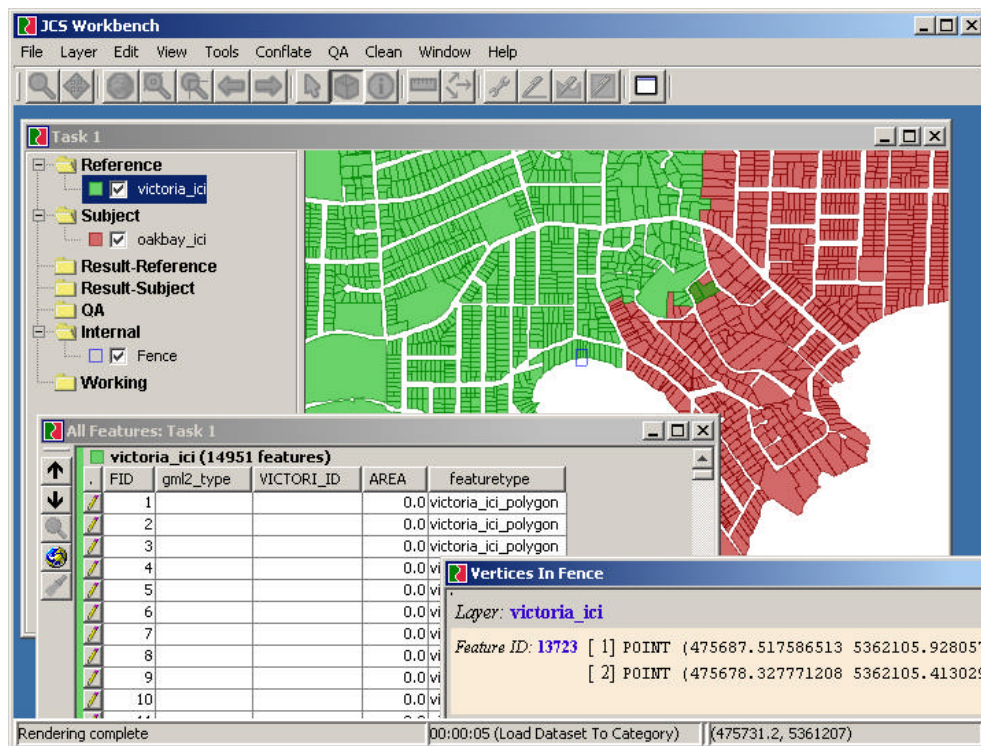
Data Sheet

Version 1.0

Overview

JUMP includes:

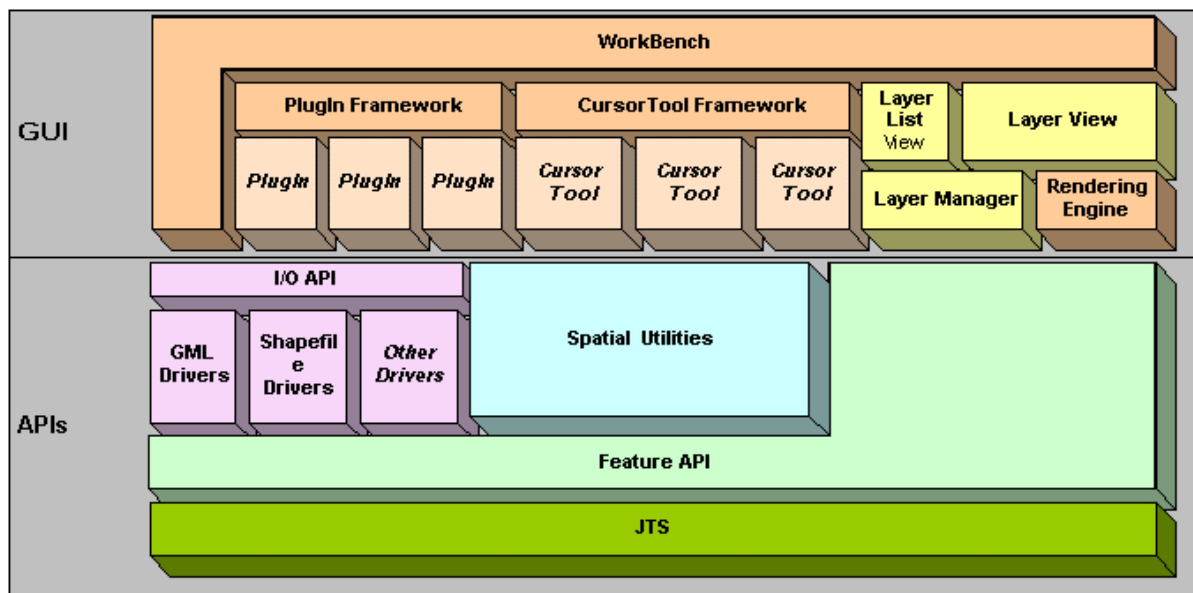
- The JUMP Workbench, an extensible, interactive GUI for visualizing and manipulating spatial features with geometry and attributes,
- An API for performing basic spatial data manipulation tasks, including data I/O, spatial indexing, spatial QA tools, spatial analysis functions, and more.



The JUMP Workbench

Architecture

The JUMP Architecture is modular, reusable, and customizable. Core functionality is exposed as APIs for easy use in other applications. Workbench GUI components can be used independently. The JUMP Workbench supplies a framework and API allowing GUI-based extensions to added seamlessly.



The JUMP Architecture

Feature List

Workbench framework

- 100% Java (JDK 1.3 and above)
- PlugIn framework for adding custom menu items
- CursorTools framework for adding custom toolbar tools
- Reader/Writer/DataSource framework for adding custom I/O formats
- Multi-Window interface supports multiple visualization displays

Data Formats

- Well-Known Text (WKT) (can be pasted directly from clipboard)
- JCS GML
- FME GML
- Other GML schemas via Input and Output Templates
- ESRI Shapefile

Feature Model

- Features support a single named Geometry attribute and multiple named scalar attributes (string, integer, double-precision floating point, date)

Geometry Model

- Based on JTS Topology Suite
- Supports all Open GIS Consortium datatypes: Point, LineString, Polygon, MultiPoint, MultiLineString, MultiPolygon, GeometryCollection

Layers

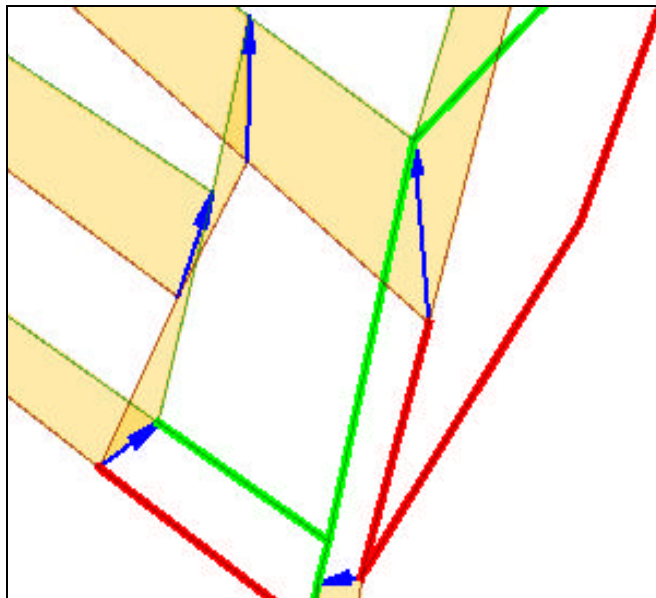
- Multiple layers allowed in named categories
- Layers can be created, copied, moved, deleted, cleared

Visualization

- Zoom In, Zoom Out, Pan, Zoom to All, Zoom to Layer, Zoom to Selected, Zoom to Fence
- Zoom Back / Zoom Forward

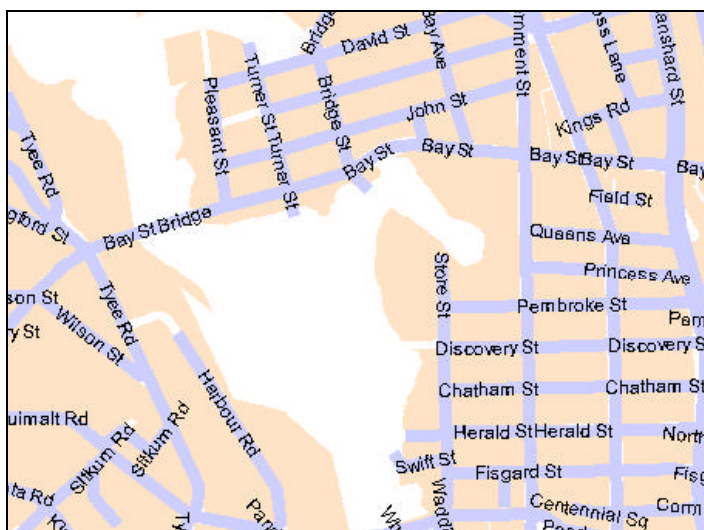
Styling

- Fill colour
- Line colour and width
- Transparency
- Vertex display with variable sizing
- Geometry Decorations (including arrowheads and other line terminators)
- Predefined styles
- Colour-theming by attribute



Labeling

- Labeling from an attribute, with ability to specify colour, font, size, and vertical alignment
- Label rotation and size can be driven from an attribute
- Labels can scale with view or be fixed-size
- Labels center on visible portion of geometry
- Overlapping labels can be automatically hidden



Geometry / Attribute Viewing

- Feature Info allows viewing geometry coordinates in Well-Known Text, GML and Coordinate-List formats
- Attributes can be viewed in HTML or tabular formats
- Attribute table view can be sorted on any column
- Supports zooming to features, highlighting features, adding features to selected set

Editing

- Create Linestring, Rectangle, Polygon, Point
- Add/Move/Delete Vertex
- Add/Move/Delete Geometry component
- Combine / Explode Geometry components
- Snap Vertices Together, To Line, To Grid
- Features can be created or updated by entering or editing Well-Known Text
- Variable-size Grid with snapping and display

WMS Client

- Create layers which display map images obtained from any WMS 1.0-compliant server
- Any number of WMS layers can be defined, each containing any collection of server layers



Spatial Data Processing Tools

Analysis / Transformation Tools

- Layer Statistics displays totals of points, holes, components, area, length for multiple layers
- Feature Statistics displays total points, holes, components, area, length for each feature in layer
- Display Vertices in Fence allows easy access to precise coordinate information
- Affine Transform can be applied to all features in layer
- Bilateral Interpolated Transformation allows "rubber sheeting" a layer with any number of control vectors
- Measure Tool
- Compute Area and Length
- Overlay two polygonal datasets
- Union of features
- Compute spatial overlay operation on Geometries (intersection, union, difference, symmetric difference)
- Buffer geometries

Feature Validation

- Detect Invalid Geometry
- Detect Repeated Points
- Detect Short Segments
- Detect Small Angles
- Detect Disallowed Geometry Types