Web 2.0 Data Visualization with JSF

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Agenda

- What are Data Visualizations?
- Data Visualization with JSF
- Demos
What Are Data Visualizations

A graphical representation of information

"Why should we be interested in visualization? Because the human visual system is a pattern seeker of enormous power and subtlety. The eye and the visual cortex of the brain form a massively parallel processor that provides the highest band-width channel into human cognitive centers"

Colin Ware
University of New Hampshire
A Picture is Worth a Thousand Words

“A good sketch is better than a long speech”
Napoleon Bonaparte

“As the Chinese say, 1001 words is more than a picture”
John McCarthy

Direction Of The Web

• Web 2.0
  • Interactive web pages
  • Ajax (Asynchronous Javascript And XML)
• Rich Client Frameworks
  • Flash / Flex (Adobe)
  • Java Server Faces / Oracle Application Development Framework
• Move from text to visuals:
  • Photos (Flickr)
  • Video (YouTube)
  • Maps (Google Maps)
Using Data Visualizations In Web Applications

• Context aware
  • Information provided is related to other information on the page. For example:
    • Customer, Time, Order
• Intent is either to be:
  • Supportive
    • Provide additional information to help decision making
    • Allow a user to navigate to additional data
  • Main focus
    • Center of the application
      • Allow user to interact
      • Navigate through information

Demonstration

Data Visualization in Action
Why Data Visualization with JSF

- JSF Simplifies Web Development
  - Server side UI generation
  - **Component based** not mark-up
  - Automatic event and state handling
  - Diverse client base - not just HTML
  - Applicable to wide spectrum of programmers
  - Easy navigation modeling
- JSF is Java EE standard
- Data visualization as JSF components
- Shorter learning curve
- More choices, one shop

ADF Data Visualization Components

- Oracle JDeveloper 11g and Oracle’s Application Development Framework (ADF)
  - Powerful and productive environment for building rich Internet applications
  - Foundation for Oracle Fusion Applications
- ADF Data Visualization components
  - Rich interactive Java Server Faces components
  - Significant graphical and tabular capabilities for analyzing data
- Data Visualization components in JDeveloper 11g:
  - Graph
  - Gauge
  - Geographic Map
  - Pivot Table
  - Gantt Chart
  - Hierarchy Viewer (coming soon)
Demonstration

ADF Data Visualization Graph

ADF DVT Graph has more than 50 types including bar, pie, line, scatter, and stock graphs
• New Graph types:
  • Funnel
  • Floating Bar Graph
  • Fit to Curve
• Flash and SVG
• Animation on initial display and data change
• Zooming and scrolling
• Master-detail time selector window
• Line and legend highlighting and fading
• Dynamic reference lines/areas
• Declarative development using simplified JSF tags
Demonstration

ADF Data Visualization Gauge/Map/Pivot

ADF Data Visualization Gauge

- Gauge
  - Focuses on tracking key performance indicators
- Supported Gauge types are:
  - Dial:
    - Standard and Threshold
  - Status Meter:
    - Standard and Threshold
  - Vertical Status Meter:
    - Standard and Threshold
  - LED
    - Arrow, Bulb, Rectangle, Triangle
ADF Data Visualization Geographic Map

- Functionality of Oracle Spatial within the ADF framework
- Represents business data on a geographic map
- Available Map types are:
  - Thematic
  - Pie
  - Bar
  - Point

ADF Data Visualization Pivot Table

- Multiple layers of data labels on row and column edge
- Supported features include:
  - Drag and drop pivoting
  - Horizontal and vertical scrolling
  - Cell, row and column selection
  - Header and cell formatting
  - Automatic totals and subtotals
  - Drilling
  - Sorting
  - Cell editing
  - Display of data bars in cells
Demonstration

ADF Data Visualization Gantt Chart

- Gantt chart provides ability to track tasks and resources on a Time axis to assist in project planning
- The following Gantt Chart types are supported:
  - Project Gantt (project management)
  - Scheduling Gantt (resources management)
  - Resource Utilization Gantt (resource utilization)
Demonstration

ADF Data Visualization
Hierarchy Viewer

• Hierarchy Viewer is a new visualization for hierarchical data
• Used most commonly for org charts, but it can be used for all kinds of hierarchical data display
• Features:
  • Zooming in/out
  • Different views at different zoom levels
  • Expand/collapse nodes
  • Rendering simple ADF components inside the nodes
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