



**NatTable**

# Introduction on Nebula NatTable

By Dirk Fauth



**NatTable**

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# NatTable

## Agenda

- What's NatTable?
- Other tables/trees/grids
- NatTable Architecture
  - Data access
  - Configuration
  - Supported Functions
- Roadmap
- Further information

# NatTable

## What's NatTable?

- N(ot) a(nother) t(able)
- Framework for building tables/grids/trees
- Designed to handle large datasets
- Provides a lot of functionality out of the box

# NatTable

# Some examples

Validierungsergebnisse (1 Fehler) ✕

- Die Komponente Component One ist mit keiner Komponente des Kriteriums Getriebe baubar. Bitte überprüfen Sie Ihre Baubarkeitsdefinitionen.
- Die Risiko-Bewertungen aller Komponenten des Kriteriums Rohbau sind identisch (Risiko="8"). Bitte überprüfen Sie diese Bewertungen und nehmen ggfs. Differenzierungen vor.
- Die Komponente Component Five zieht mit mind. zwei unterschiedlichen Komponenten des Kriteriums Rohbau einen Raff-Dauerlauf an. Passen Sie bei Bedarf bitte Ihre Bewertungen an.
- Die Komponente Component Six zieht mit mind. zwei unterschiedlichen Komponenten des Kriteriums Rohbau einen Triebstrang-Dauerlauf an. Passen Sie bei Bedarf bitte Ihre Bewertungen an.
- Die Komponente Component Eight weist große Ähnlichkeiten auf. Die Risiko-Bewertung "A" überwiegt deutlich. Bitte überprüfen Sie Ihre Bewertungen.

	Component One	Component Two	Component Three	Component Four	Component Five	Component Six	Component Seven	Component Eight	Component Nine
	Component One	3	-	-	1	3	-	-	-
Component Two	-	6	-	1	4	-	-	-	-
Component Three	-	-	8	4	1	-	-	-	-
Component Four	1	5	1	7	-	-	-	-	-
Component Five	5	1	1	-	4	-	-	-	-
Component Six	1	1	1	-	-	-	-	-	-
Component Seven	1	4	5	5	1	-	-	-	-
Component Eight	4	1	7	1	9	-	-	-	-
Component Nine	1	1	7	3	6	-	-	-	-

	ISIN	TestGroup		Issue Date	Pricing Type	TestGroup1 Bid	Size (mil)
		Sec Desc	rating				
1	US2535	B Ford Motor	a	10-22-12	Manual	-579,000000	1.500.000
2	ABC8046	A Alphabet Co.	AAA	04-07-23	Automatic	-26,000000	10.000
3	US4789	C General Electri...	B	02-22-25	Manual	-583,000000	1.500.000
4	US9738	E Nissan Motor ...	AA	01-10-45	Manual	-590.0	80.000
5	US5190	D Toyota Motor ...	aaa	01-23-51	Manual	-772,000000	450.000
6	US416	F Honda Motor ...	aa	06-10-83	Manual	-586.0	6.500.000
7	US5300	G General Motor...	B-	06-21-36	Manual	-151,000000	2.585.000
8	US2339	H Yahoo! Inc	C	10-22-12	Automatic	-755.0	99.000
9	US1713	I Microsoft	BB	06-19-79	Automatic	-395,000000	6.250.000
10	US1848	J Google Inc.	AAA	05-18-82	Automatic	-254.0	8.550.000
11	US9830	K Research In M...	AA	04-17-19	Manual	-114.0	55.000
12	US1024	L Apple Inc.	AAA	08-17-07	Automatic	-916,000000	115.000

<b>NatTable</b>	<b>Other tables/trees/grids</b>			
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SWT/JFace

Nebula XViewer

Nebula Grid

KTable

inactive since 2009

Jaret table

inactive since 2010

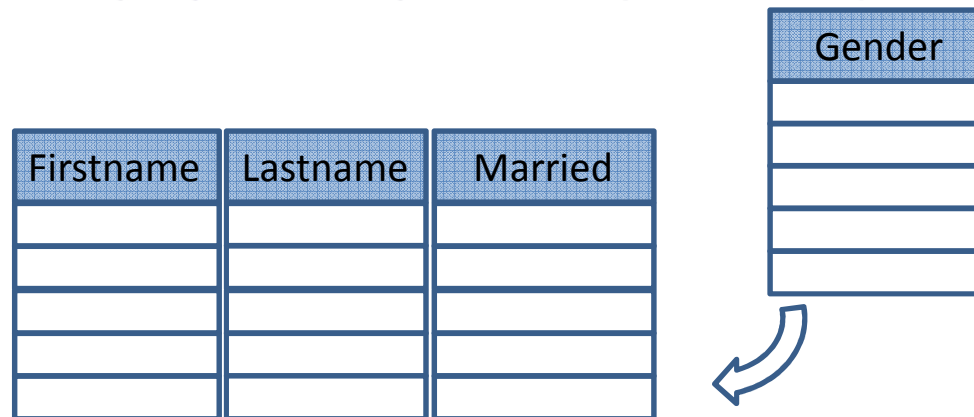
# NatTable

## Other tables/trees/grids

```
TableViewer viewer = new TableViewer(parent,
                                     SWT.BORDER|SWT.H_SCROLL|SWT.V_SCROLL);
...

TableViewerColumn column =
    new TableViewerColumn(viewer, SWT.NONE);
column.getColumn().setText("Firstname");
column.getColumn().setWidth(100);
column.setLabelProvider(new CellLabelProvider() {
    ...
});
column.setEditingSupport(new MyEditingSupport());
...
```

# NatTable Other tables/trees/grids



- Created column by column
- Several objects for every column
  - Column object, LabelProvider, (EditingSupport)
- Using native OS widgets



# NatTable

## Creating a NatTable

```
String[] propertyNames = {"firstName", "lastName", "married"};

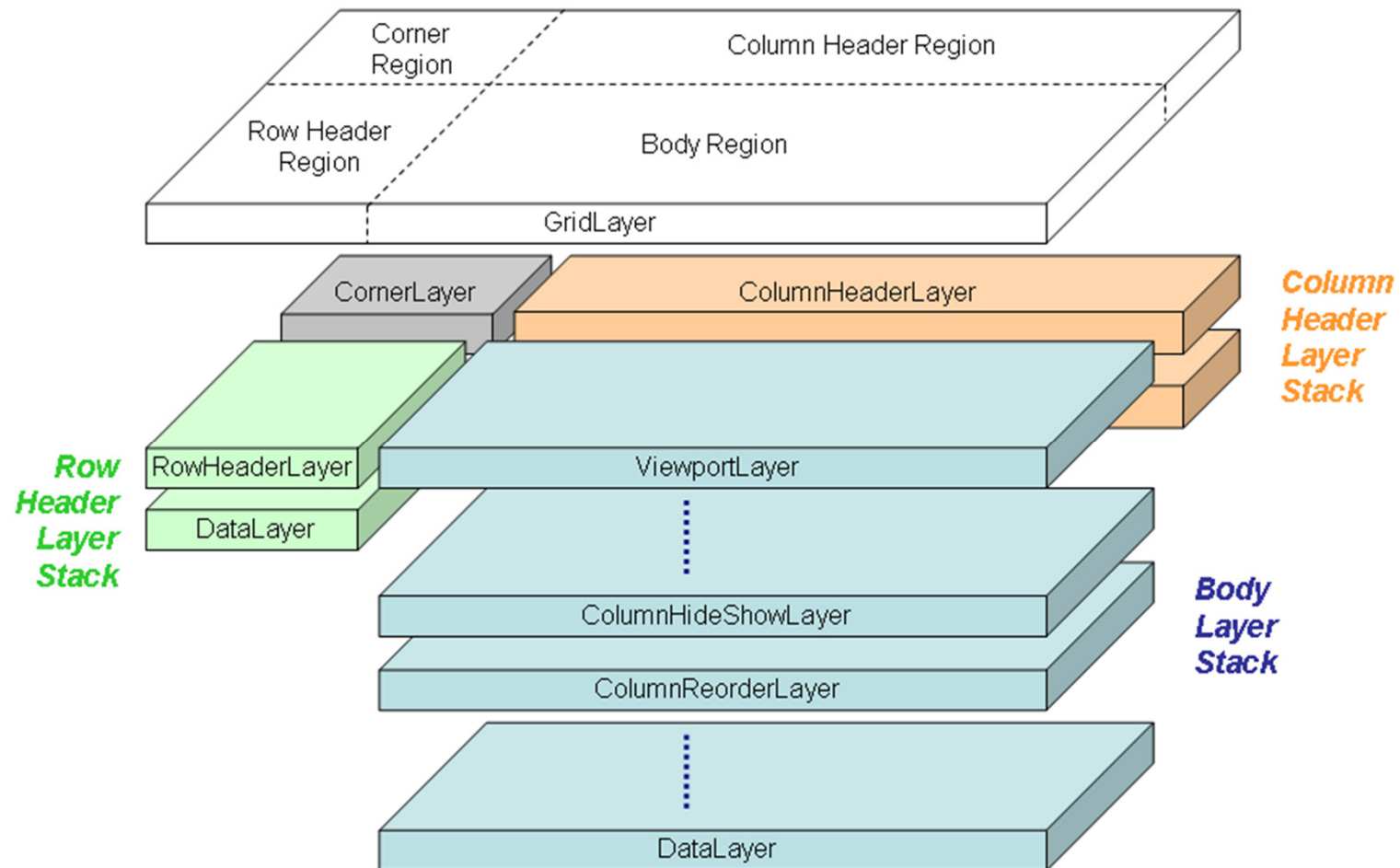
Map<String, String> propertyToLabelMap =
    new HashMap<String, String>();
propertyToLabelMap.put("firstName", "Firstname");
propertyToLabelMap.put("lastName", "Lastname");
propertyToLabelMap.put("married", "Married");

DefaultGridLayer grid =
    new DefaultGridLayer(
        persons, propertyNames, propertyToLabelMap);

NatTable natTable = new NatTable(parent, grid);
...
```

# NatTable

# NatTable Architecture



# NatTable

## Data access

- DataLayer
  - IDataProvider (e.g. ListDataProvider)
    - IColumnAccessor (e.g. ReflectiveColumnPropertyAccessor)
- No JFace databinding support out of the box
- GlazedLists support

# NatTable

## Data access

```
public interface IDataProvider {  
    Object getDataValue(int columnIndex, int rowIndex);  
    void setDataValue(int columnIndex, int rowIndex,  
        Object newValue);  
    int getColumnCount();  
    int getRowCount();  
}
```

```
public interface IColumnAccessor<T> {  
    Object getDataValue(T rowObject, int columnIndex);  
    void setDataValue(T rowObject, int columnIndex,  
        Object newValue);  
    int getColumnCount();  
}
```

# NatTable

# Configuration

- ConfigRegistry per NatTable instance
  - Styling
    - Painters
    - Styles
  - Bindings
    - Key bindings
    - Mouse bindings
  - Conditional configuration by labels
    - Separation of data and rendering/styling

# NatTable

# Supported Functions

Context Menus

Custom Bindings/Commands

## Sorting

(Conditional) Styling

Column Reordering

Column Hide/Show

## Filtering

## Freezing

Excel Export

Selection

Column/Row Grouping

## Table/Grid/Tree

Blinking Updates

Text Editor

Password Editor

## Editing

Checkbox Editor

Editing Rules

Combobox Editor

Percentage Sizing

## Summary Row

# NatTable

# Nebula NatTable 1.0

- Smooth Scrolling
- Simplification of NatTable configuration
- Refactoring of column and row grouping
- (Refactoring of event handling)
- Further enhancements and bugfixes



**NatTable**

**Nebula NatTable 2.x**

Multi-Level Trees

**Eclipse 4**

Memory Improvements

RAP? HTML5

**Rendering**

JavaFX

**JFace Databinding**

EMF based Configuration

**Dependency Injection**



# NatTable

# Further Information

- Nebula NatTable Website  
<http://eclipse.org/nattable/>
- Nebula NatTable Forum  
[http://www.eclipse.org/forums/index.php?t=thread&frm\\_id=240](http://www.eclipse.org/forums/index.php?t=thread&frm_id=240)
- Mailing List  
[nattable-dev@eclipse.org](mailto:nattable-dev@eclipse.org)
- Articles (German)  
<http://www.beone-group.com/publikationen.html>