

Judd Solutions

Development, Mentoring and Training



Interacting with
relational databases
using WST

Christopher M. Judd
President/Consultant
Judd Solutions, LLC



Christopher M. Judd

Available
Sept 14, 2005



Bearable
Moments



Available
Dec 1, 2005

Illustrated by Dale Herron

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



House Keeping

- 404 - Developing Web Services with the WTP
 - Tuesday 3:30 pm – 5:00 pm
 - Chris Judd
- 501 – Developing Enterprise JavaBeans with JST
 - Wednesday 9:15 am – 10:45 am
 - Chris Judd
- 701 - Building With the Data Tools Project
 - Wednesday 2:00 pm – 3:30 pm
 - Der-Ping Chou and John Graham

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Agenda

- WTP Overview
- RDB Overview
- Apache Derby Database
- Using RDB
- Conclusion

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Web Tools Platform Project (WTP)

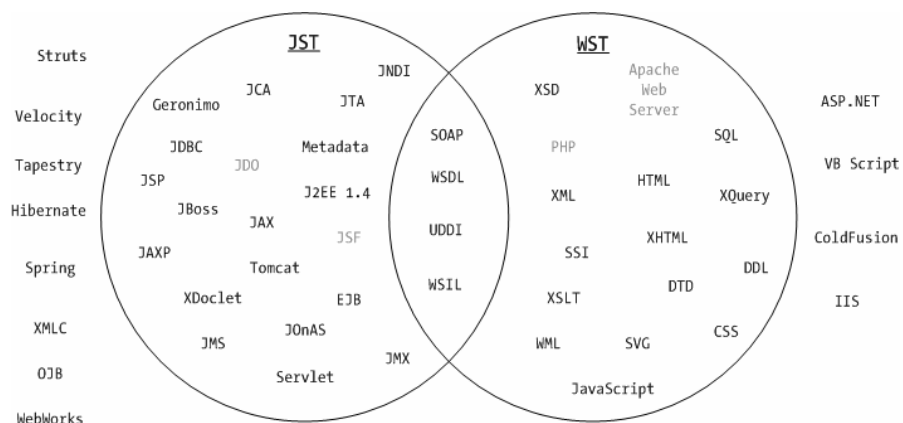
- Top Level Eclipse Project
- www.eclipse.com/webtools/
- Development tools for web development
 - No runtime dependencies
 - Vendor extensible
- Subprojects
 - Web Standard Tools (WST)
 - J2EE Standard Tools (JST)
- Version 0.7 was released August 2, 2005.
- Dependencies
 - Eclipse 3.1
 - Eclipse Modeling Framework (EMF) 2.1.0
 - Graphic Editor Framework (GEF) 3.1
 - Java EMF Model (JEM) 1.1

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



WTP Scope



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



WTP Installation Options

- All-in-one
 - Eclipse 3.1
 - Eclipse Modeling Framework (EMF) 2.1.0
 - Graphic Editor Framework (GEF) 3.1
 - Java EMF Model (JEM) 1.1
- Update Manager
 - Eclipse.org update site
- Piecemeal

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Agenda

- WTP Overview
- RDB Overview
- Apache Derby Database
- Using RDB
- Conclusion

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



RDB Overview

- JDBC based database explorer and editor
- Execute SQL and DDL
- View database elements
- View and modify result sets
- Import/Export
- Not complete
- Future Eclipse Data Tools Platform (DTP)

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



RDB Features

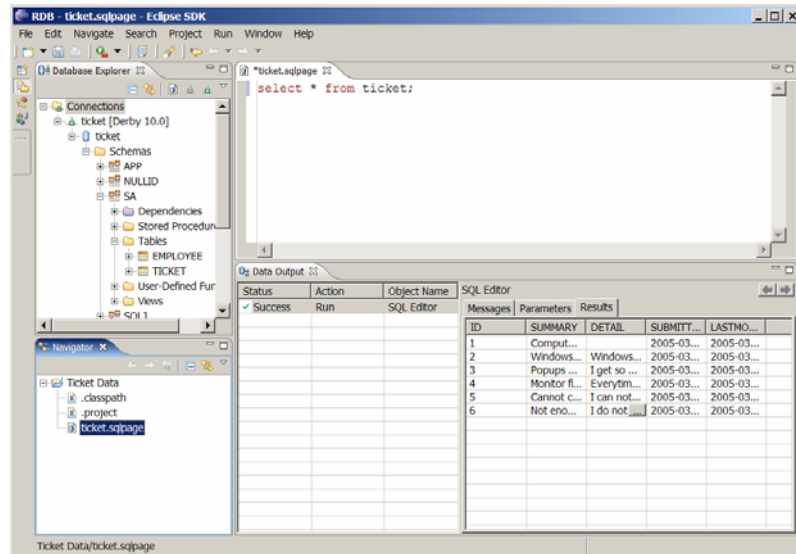
- Perspective
 - none
- Views
 - Database Explorer
 - Data Output
- Editors
 - SQL Editor
- Wizards
 - SQL Scrapbook Page

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



RDB Perspective



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Create RDB Perspective

1. Open Resource perspective
2. Save perspective as "RDB"
3. Add Database Explorer and Data Output views
4. Arrange views to taste
5. Save perspective as "RDB"

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Agenda

- WTP Overview
- RDB Overview
- Apache Derby Database
- Using RDB
- Conclusion

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Apache Derby

- Relational database
- 100% Java
- Small footprint
- Open Source
- Apache License Version 2.0
- <http://db.apache.org/derby/>

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Database Features

- ANSI SQL Standards
 - SQL-92 core subset
 - some SQL-99 features
- Security
- Schema
- Transactional
- Stored Procedures
- Views
- Triggers
- Drivers
 - JDBC
 - ODBC

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Uses

- Unit Testing
- Proofs of concepts
- Embedded database
- Small applications
 - Web
 - Desktop
- Java Web Start (JWS) deployment

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Competition

- hsqldb
- IBM Cloudscape
- Borland JDataStore
- MySQL
- PostgreSQL
- Oracle
- IBM DB2
- Microsoft SQLServer

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Architecture

- Embedded
- Network Server

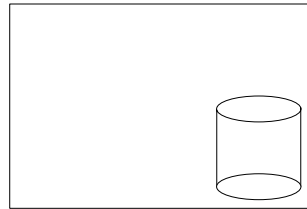
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Embedded

- Single JVM
- Classpath
 - derby.jar
- Connection string
 - jdbc:derby:ticket



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Embedded Connection Information

- Driver
 - org.apache.derby.jdbc.EmbeddedDriver
- URL
 - jdbc:derby:[subsubprotocol:][databaseName][;attribute=value]*
 - subprotocol
 - directory
 - classpath
 - jar

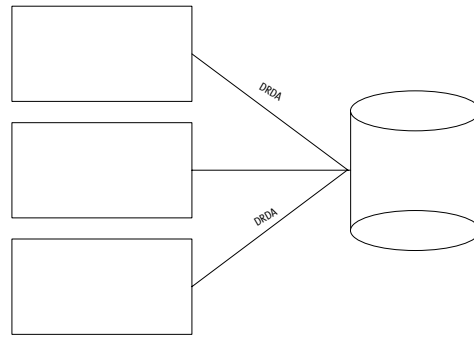
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Network Server

- Classic Client/Server
- Separate process/JVM
- Multi-user
- Multi-application
- Server Classpath
 - derby.jar
 - derbynet.jar
- DB2 Universal Driver
or
Network Client (10.1)



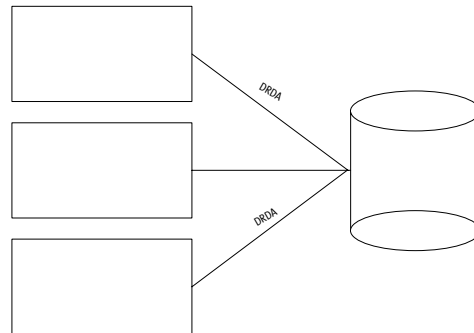
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



DB2 Universal Driver

- IBM
- <http://www.ibm.com/developerworks/cloudscape>
- Client Classpath
 - db2jcc.jar
 - db2jcc_license_c.jar
- Distributed
Relational
Database
Architecture



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Network Connection Information

- Driver
 - `com.ibm.db2.jcc.DB2Driver`
- Derby
 - `jdbc:derby:net://<host>[:port]/<db>[;<derby attribute>=<value> [;...]][:<universal attribute>=<value>; [...;]]`
- DB2
 - `jdbc:db2j:net://<host>[:port]/<db>[;<derby attribute>=<value> [;...]][:<universal attribute>=<value>; [...;]]`
- URL Attributes
 - `create=<boolean>`
 - `user=<user id>` (required by Universal Driver)
 - `password=<password>` (required by Universal Driver)
 - `readOnly=<boolean>`

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Agenda

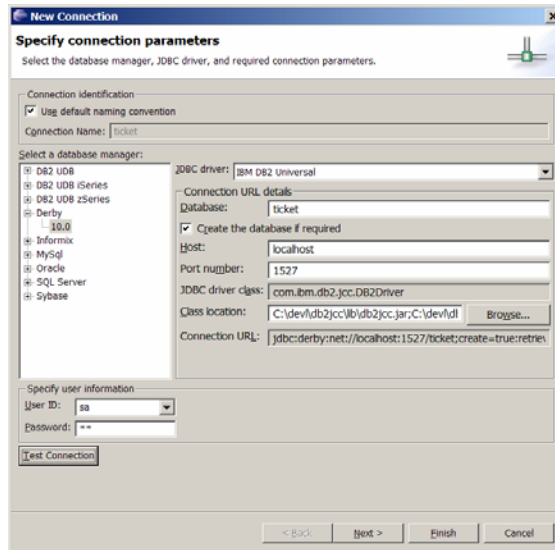
- WTP Overview
- RDB Overview
- Apache Derby Database
- Using RDB
- Conclusion

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Create Connection



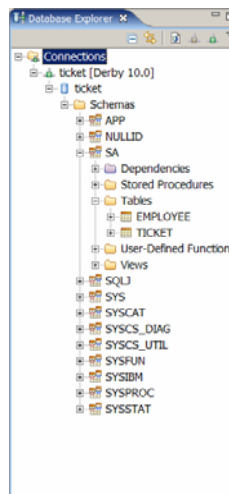
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Database Explorer

- Displays database elements
- Context menus



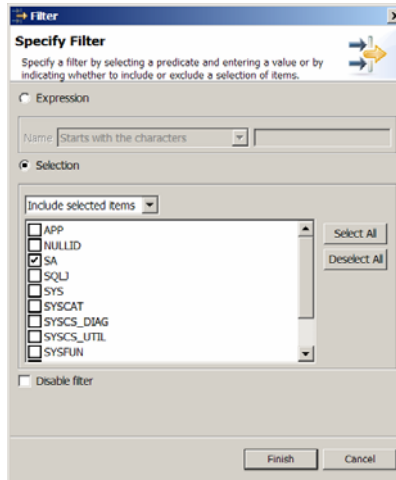
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Filtering

- Context filters
 - Schema
 - Tables
 - Views
 - Stored procedures
- Filter Decorator



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Data Output

- Sample Content
- Execute SQL
- Read-only

Status	Action	Object Name
✓ Success	Run	SQL Editor
✓ Success	Run	SQL Editor
✗ Failure	Run	SQL Editor
✓ Success	Run	Sample Con...
✗ Failure	Edit	TICKET
✓ Success	Run	Sample Con...
✓ Success	Run	SQL Editor
✗ Failure	Run	SQL Editor
✓ Success	Run	Sample Con...
✓ Success	Run	SQL Editor

ID	SUMMARY	DETAIL	SUBMITT...	LASTMO...
1	Comput...		2005-03...	2005-03...
2	Windows...	Windows...	2005-03...	2005-03...
3	Popups ...	I get so ...	2005-03...	2005-03...
4	Monitor fl...	Everytim...	2005-03...	2005-03...
5	Cannot c...	I can not...	2005-03...	2005-03...
6	Not eno...	I do not ...	2005-03...	2005-03...

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



SQL Editor

- Associated with *.ddl, *.sql and *.sqlpage
- SQL Scapbook
 - Open with
 - Connection context
 - New Wizard
 - Ignore version control
- Features
 - Syntax highlighting
 - Content assist
 - Format
 - Content tip

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Other features

- Load/Extract
- Open (editable table)
- Drop table
- Generate DDL
- Drop table
- Work Offline

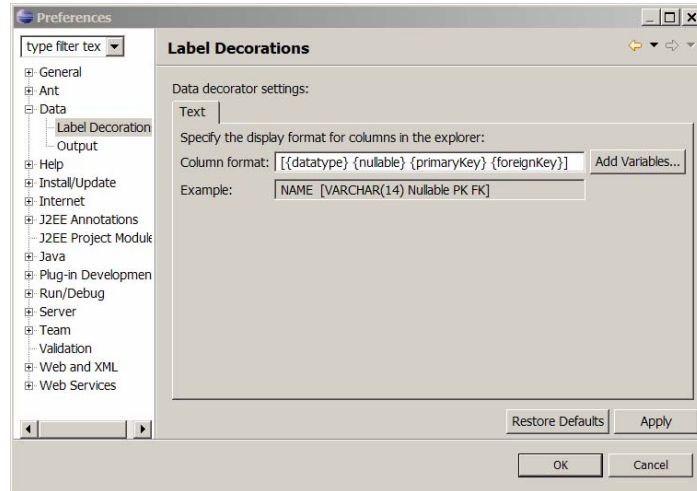
© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Preferences

- Window > Preferences > Data

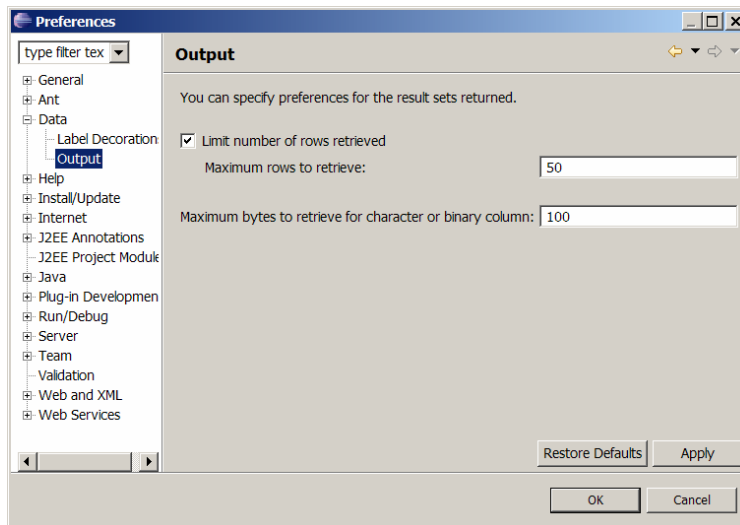


© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Preferences



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Agenda

- WTP Overview
- RDB Overview
- Apache Derby Database
- Using RDB
- Conclusion

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Contributions

- Database Connection Wizards
 - <http://www.eclipse.org/webtools/wst/components/rdb/Data%20Tools%20Open%20Source%20Overview%20for%20Eclipse%20database%20Developer.html>
- Eclipse Data Tools Platform (DTP)

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Conclusion

If you need simple data tools for interacting with a database such as editing and executing SQL and DDL than RDB may meet your needs. The RDB component will be replaced by the Eclipse Data Tools Platform (DTP) which will include a more comprehensive set of database tools including visual SQL builders and modeling capabilities.

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Resources

- Eclipse Data Tools Platform (DTP)
 - www.eclipse.org/datatools/
- SQLExplorer
 - Alternative
 - sourceforge.net/projects/eclipsesql

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Contact Information

- <http://www.juddsolutions.com>
- cjudd@juddsolutions.com
- Blog
 - <http://blogs.apress.com/authors.php?author=Christopher%20Judd>
- Pro Eclipse JST
 - <http://www.apress.com/book/bookDisplay.html?bid=447>
- Enterprise Java Development on a Budget
 - <http://www.apress.com/book/bookDisplay.html?bid=197>



© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions



Questions ?

Please fill out your evaluations.

© 2004 Judd Solutions, LLC. All rights reserved.

Judd Solutions