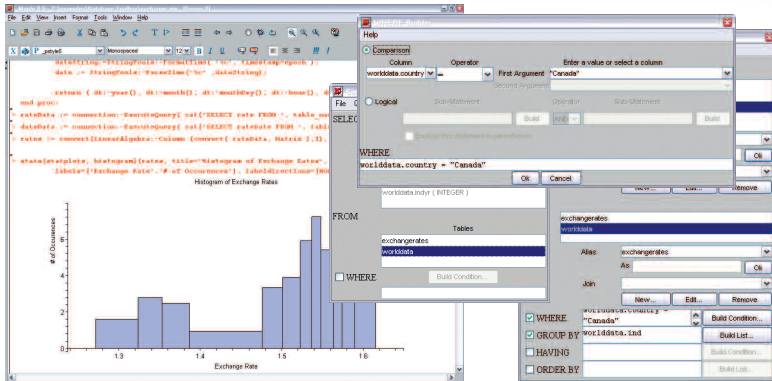


Database Integration

Database Integration Toolbox for Maple

The Maple™ Database Integration Toolbox allows engineers and scientists to quickly develop and deploy powerful applications that combine large enterprise datasets with the state-of-the-art analysis and visualization of Maple. You can easily query, create and update JDBC™-compliant databases within the interactive, user-friendly Maple environment. The Maplet™ task assistants allow you to compose complex queries without any detailed SQL knowledge. The Database Integration Toolbox is ideal for anyone working with technical data – from simple queries to enterprise-caliber applications.



Unlike conventional database application development systems, the Maplesoft™ solution offers optimized tools to solve sophisticated modeling and analysis problems unique to engineering and science. Convenient access to a sweeping range of numerical solvers, unrivalled interactive visualizations, and special tools such as unit management means greater insight into your complex data. Maplesoft innovations, such as the Maplet system and MapleNet™ Web deployment technologies, allow your application to be deployed across the technical enterprise.

Key Features

- Works with JDBC-compliant databases, such as Microsoft® SQL Server, Microsoft® Access, Sybase™, Oracle®, IBM® DB2®, and MySQL®
- Allows you to query, update and create databases from within Maple
- Data can be analyzed, manipulated, visualized and transformed using powerful Maple technical analysis and programming tools
- Automatic result updates without issuing further SQL commands
- Automatic data conversion between SQL and Maple, allowing natural manipulations within each environment
- Maplet interfaces for managing connections and building queries making this toolbox easy to use, and knowledge of SQL unnecessary
- Prepared statement support for the automatic creation and execution of SQL operations by calling a single template function
- Transactional support: commit, rollback and autocommit mode
- Multiple connection support
- Cross-platform and cross-database support for maximum reuse and transferability

Application Areas

The Database Integration Toolbox is ideal for anyone working with technical data. In conjunction with Maple, it can be used for:

- Simple and complex queries
- Technical analysis of results
- Developing applications for querying, updating, visualizing, transforming and manipulating data

Application areas include:

- Econometrics and finance
- Medical research and biotechnology
- Data mining
- Engineering

System Requirements

- Maple 9.5
- Connects to databases that have JDBC-compliant drivers
- JDBC version 3 driver (some functionality available for version 2 drivers). The vendor of the database usually supplies the drivers. Third party drivers are also available
- Available for all Maple 9.5 supported platforms

The Database Integration Toolbox is part of the Maple Professional Toolbox Series. These products greatly extend the scope and functionality of Maplesoft products for specialized application areas. Designed to work seamlessly with the core Maple product suite, these high-performance products deploy best of breed technology to deliver maximum benefit from the world's most powerful technical software platform. Toolboxes target key application areas in engineering and science, and technical application development.

Functionality and Specifications

Overview

- Connects to databases that have JDBC™-compliant drivers available.
- Integrated with Maple™ 9.5.
- Includes interactive Maplet™ interfaces for building simple and advanced queries, and managing connections.
- Contains Maple commands for establishing connections, building and executing queries, and manipulating and modifying results.

Query Builder

- Contains simple and advanced query Maplet interfaces.
- Queries are created through point-and-click operations. No knowledge of SQL is required.
- Query results can be:
 - Browsed
 - Saved to a Maple table, array or Result object
- Queries can be:
 - Exported as an SQL expression to the worksheet or to a file
 - Executed on the entire table, or on a subset of columns
 - Constructed equivalent to using the SQL conditions: WHERE, GROUP BY, HAVING and ORDER BY clauses
- Supports:
 - Complex combinations of the data from two tables using a JOIN operation. A JOIN operation takes the rows of two tables and combines them, subject to various constraints
 - Creation of column expressions, the mathematical manipulation of column values
 - Column, table, and expression aliasing

Connection Features

- Allows you to commit and rollback transactions.
- Supports autocommit mode.
- Allows you to save and reload connection settings.
- Maplet Connection Tool for syntax-free management of connections.
 - Establish a new connection
 - Define and save a connection definition
 - Load an existing connection definition

- Supports simultaneous multiple connections.
- Can connect to different databases on different platforms. All operations are platform and database independent.

Query Results

- Results can be viewed through a Maplet browser, or manipulated programmatically.
- Can scroll through results row by row, or jump to the first row, last row, or a specified row number.
- Supports insertion and deletion of rows.
- Both individual entries and entire rows can be updated.
- Table information is accessible: column name, row count, column count, row index, and column SQL type.

Prepared Statements

- Represent an arbitrary SQL statement that contains parameters. These parameters can be replaced with values at execution time.
- Can be a query or an update.
- Can contain multiple SQL statements in a single prepared statement when supported by the driver.
- Provide an efficient means of repeatedly executing similar statements.
- Allow you to set limits on execution time of query, maximum number of rows, and maximum field size for character or binary data.

Maple Integration

- Automatically converts between Maple and SQL format.
- Updating the query results within Maple automatically updates the database, whenever permitted by the database and the JDBC driver.
- Supports prepared statements by calling a Maple function.
- Data is automatically and transparently pulled from the server in small blocks, so even very large results of queries can be manipulated in Maple using a set of Maple functions that operate on a special Maple Result object. This feature is available whenever the JDBC-driver supports the operation.
- Results can be stored in Maple as tables or arrays.

Note: Available for all Maple 9.5 supported platforms.