Using JDBC to Query a Databases

USING THE STATEMENT AND RESULT SET TYPES

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Demo

Create a new java.sql.Statement

Execute a query

Basic java.sql.ResultSet navigation

Accessing one column per row

Handling Exceptions in JDBC

SQLException Types

BatchUpdateException

RowSetWarning

SerialException

SQLClientInfoException

SQLNonTransientException

SQLRecoverableException

SQLTransientException

SQLWarning

SyncFactoryException

SyncProviderException

Using the PreparedStatement and ResultSet

Compile the SQL Plan with JDBC
Statement

Parse the SQL query

Optimize the SQL query plan

Execute the SQL query plan

Compile the SQL Plan with JDBC
PreparedStatement

Parse the SQL query

Optimize the SQL query plan

Store the SQL query plan

Execute the SQL query plan

Compile the SQL Plan with JDBC
PreparedStatement

Parse the SQL query

Optimize the SQL query plan

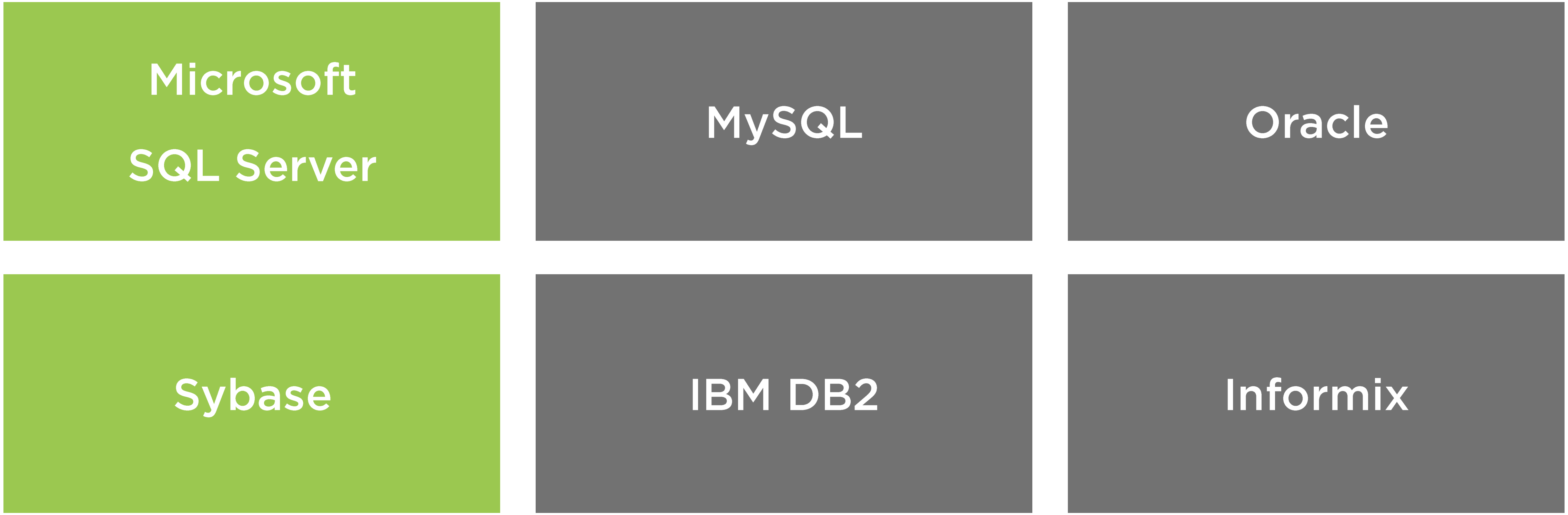
Store the SQL query plan

Execute the SQL query plan

Using Input Parameters with a PreparedStatement

Accessing Multiple Columns with ResultSet

Support for MONEY Data Type



Microsoft SQL Server

MySQL

Oracle

Sybase

IBM DB2

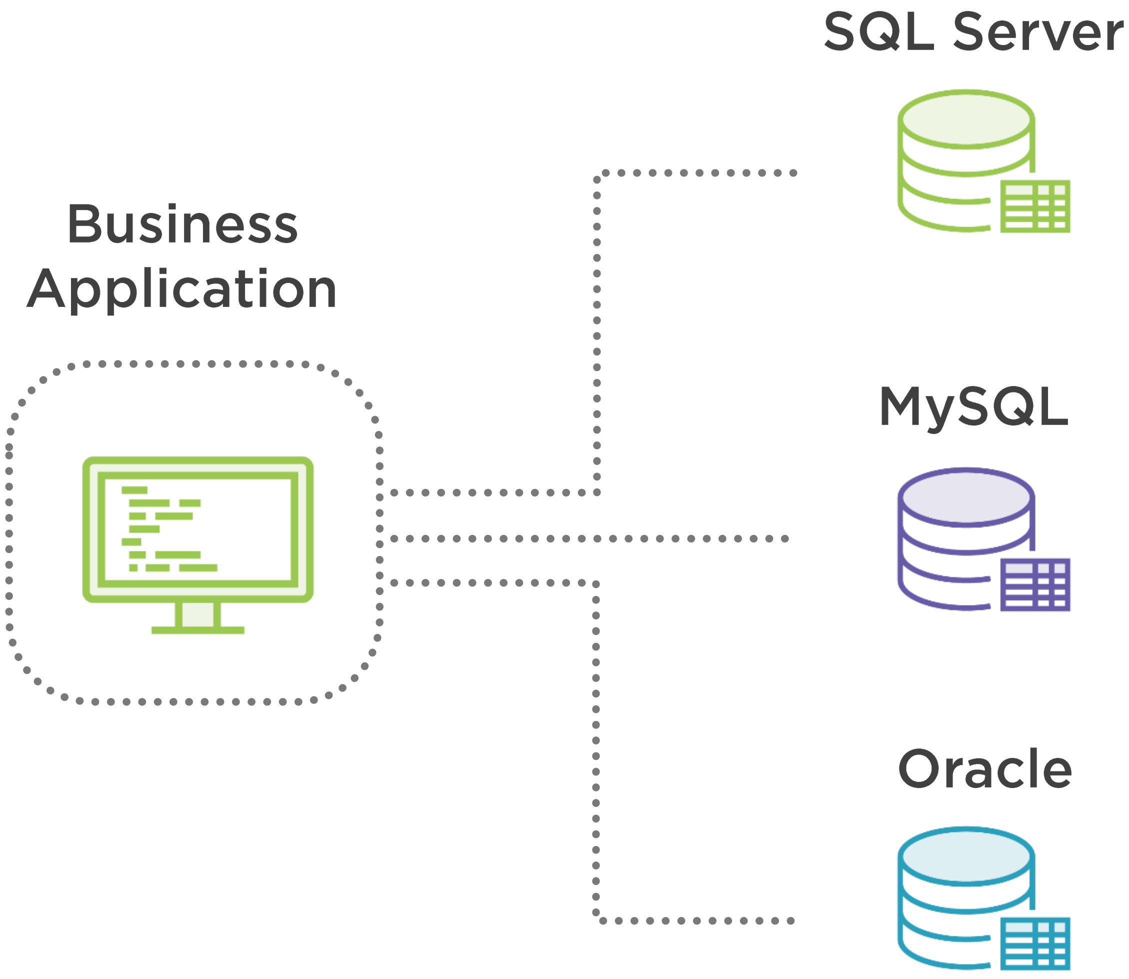
Informix

SQL types, JDBC types, and Java types.

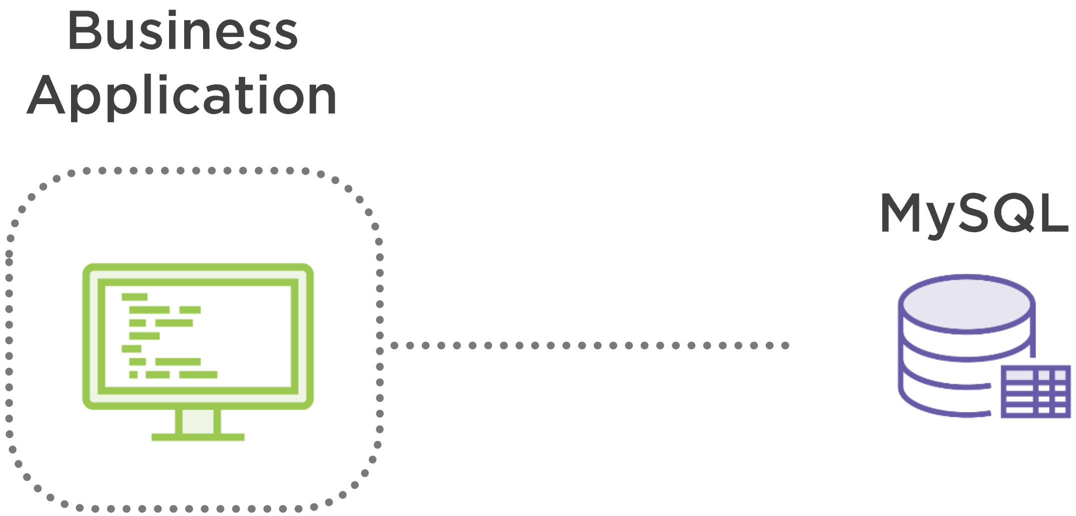
Number of Characters for VARCHAR

MySQL	Microsoft SQL Server	Oracle
65,535 chars	8,000 chars	4,000 chars

Multiple Databases



Dedicated Database



Data Type Conversions

JDBC Type	Java Type
CHAR	String
VARCHAR	String
LONGVARCHAR	String
NUMERIC	java.math.BigDecimal
DECIMAL	java.math.BigDecimal
BIT	boolean
BOOLEAN	boolean
TINYINT	byte
SMALLINT	short
INTEGER	int
BIGINT	long
REAL	float
FLOAT	double
DOUBLE	double

JDBC Types

- java.sql.Date
- java.sql.Time
- java.sql.Timestamp
- java.sql.Clob
- java.sql.NClob
- java.sql.Blob
- java.sql.Array
- java.sql.Struct
- java.sql.Ref
- java.sql.RowId
- java.sql.SQLXML

Additional ResultSet Navigation Methods

Demo

next()

first() and beforeFirst()

last() and afterLast()

absolute()

relative()

previous()

Summary

Use the PreparedStatement instead of the Statement object

- It’s more performant
- It helps prevent SQL injection attacks

Use the try-with-resources clause

The ResultSet is a flexible interface that supports several navigation methods

- Not all JDBC drivers support all of the navigation methods.

The SQL types map loosely to Java types but its not perfect.

- See Appendix B of the JDBC 4.3 Specification