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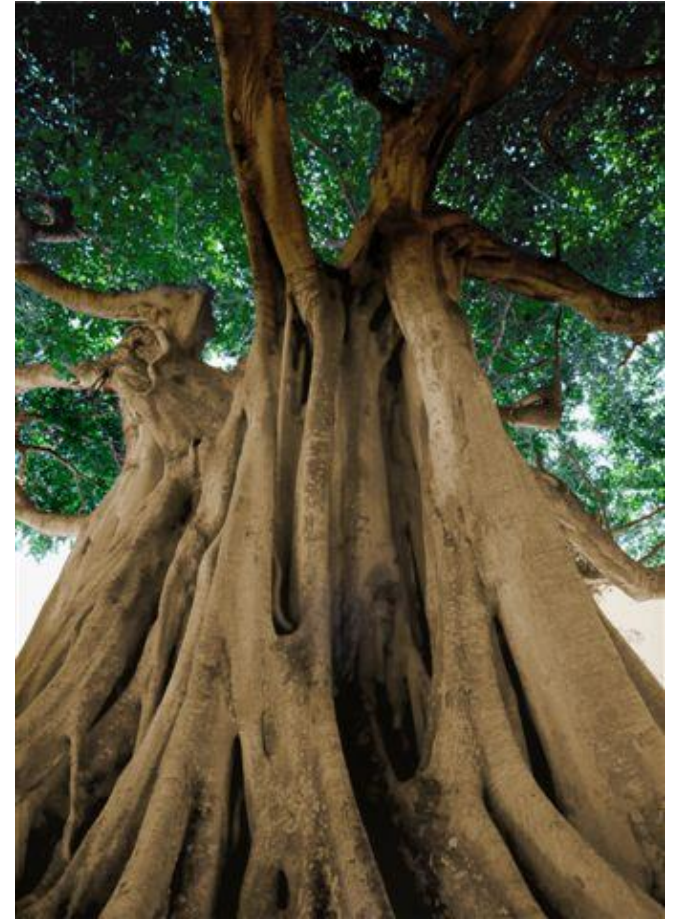
JDBC Introduction

Part 2



Accenture Overview

- Global management consulting, technology services and outsourcing company
- More than 246,000 people serving clients in over 120 countries
- Clients, spanning the full range of industries – 92 of the Fortune Global 100 and more than three-quarters of the Fortune Global 500
- www.accenture.com



Accenture in Romania

- Accenture has operated in Romania since 2003 and is continuously consolidating its presence in all three pillars:
 - Management Consulting
 - Technology
 - Business Process Outsourcing (BPO)
- Romanian office:
 - Bucharest, West Gate center



Who am I?



Edis Ali

Analyst programmer

Specialty: java, sql, OSS(Service Delivery, Service Activation)

Personal interest: I like Italian and Turkish cuisine, to watch sci-fi and fantasy movies, anime, computer games

Introduction to JDBC

Course Map

- JDBC architecture and driver concepts
- Using JDBC API
- Result set and metadata
- Procedure statements
- Managing transactions
- Sample application that connects to a Database

Procedure statements and stored procedures

- Procedure statements and stored procedures:
 - Issuing Prepared Statements
 - Coding Prepared Statements
 - Calling Stored Procedures

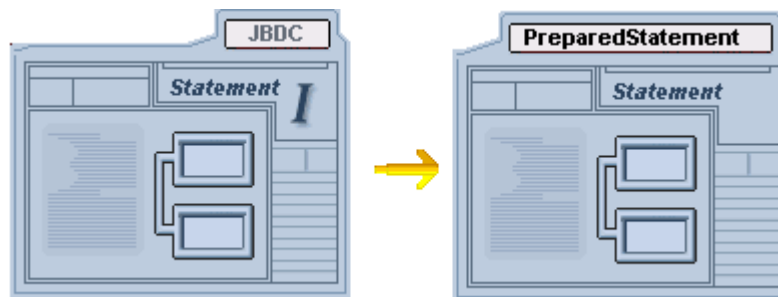
Procedure statements and stored procedures(1/5)

- Issuing a SQL query refers to precompilation process before the execution and consists of:
 - parsing, compiling, and planning for the query.
- Before each execution of the query, the database built its execution plan:
 - ➡ Expensive system overhead
 - ➡ but, JDBC precompile your queries just once before executing them multiple times ➡ precompiled queries

Procedure statements and stored procedures(2/5)

- Precompiled queries = are called prepared statements.
- PreparedStatement = the JDBC interface that supports prepared statements.
- PreparedStatement object to update a row in a database:

```
Private PreparedStatement ps_UpdateStmnt;
```



Procedure statements and stored procedures(3/5)

- To specify the SQL and to perform precompilation for that update, use `PreparedStatement` method of the `Coonection` class.

```
ps_UpdateStmnt =  
con.PreparedStatement("UPDATE CUSTOMES SET  
name =? WHEE cust_no=?");
```

- **The** `PrepareStatement` **method** returns a **precompiled** `PrepareStatement` **object** - in this case `ps_UpdateStmnt`.

Procedure statements and stored procedures(4/5)

- To replace the ? substitution markers with an actual value, you must use one of `PreparedStatement`'s `setX` methods:

- `setString`
- `setBoolean`
- `setInt`
- `setObject`

```
ps_UpdateStmnt = con.PreparedStatement("UPDATE  
CUSTOMES SET name =? WHEE cust_no=?");
```

```
ps_UpdateStmnt.setString(1, customerName);
```

```
ps_UpdateStmnt.setSrtng(2, customerNumber);
```

Procedure statements and stored procedures(5/5)

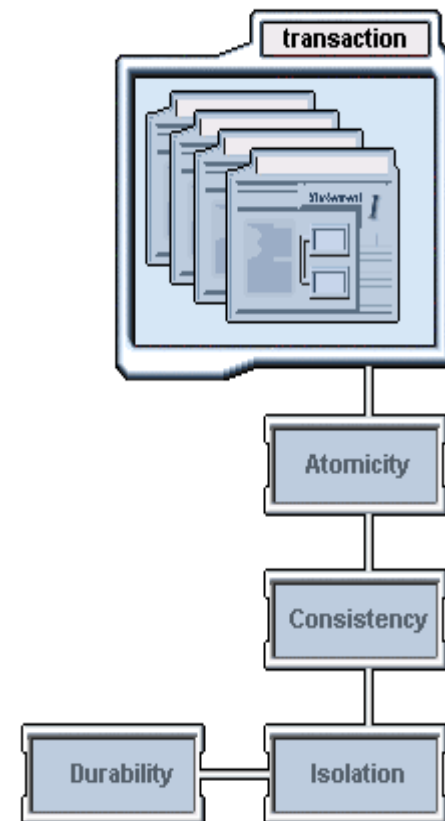
- Because both *the name* and *cust_no columns* of the customers table are VARCHAR SQL types, you use two `setString` method calls.
- `executeUpdate` method is used to execute the prepared statement:

```
ps_UpdateStmnt.executeUpdate();
```
- Complete the operation by using the `close` method to close the prepared statement.

```
ps_UpdateStmnt.close();
```

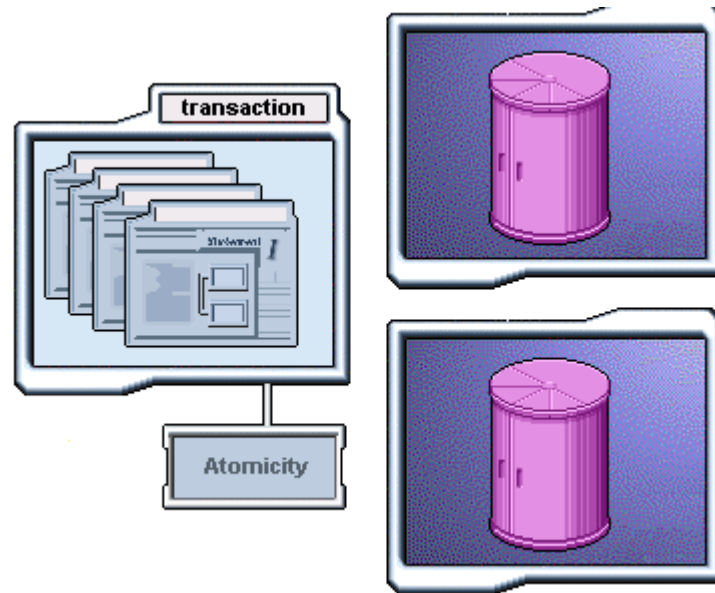
Managing Transactions

- Transaction = sequence of SQL statements that performs one Logical Unit of Work (LUW)
- Properties of a transaction:
 - Atomicity
 - Consistency
 - Isolation
 - Durability
- These properties are known as the ACID properties.



Atomicity

- means that if any part of it fails, the entire transaction is aborted.
- guarantees that all the databases involved in a distributed transaction remain in a consistent state.

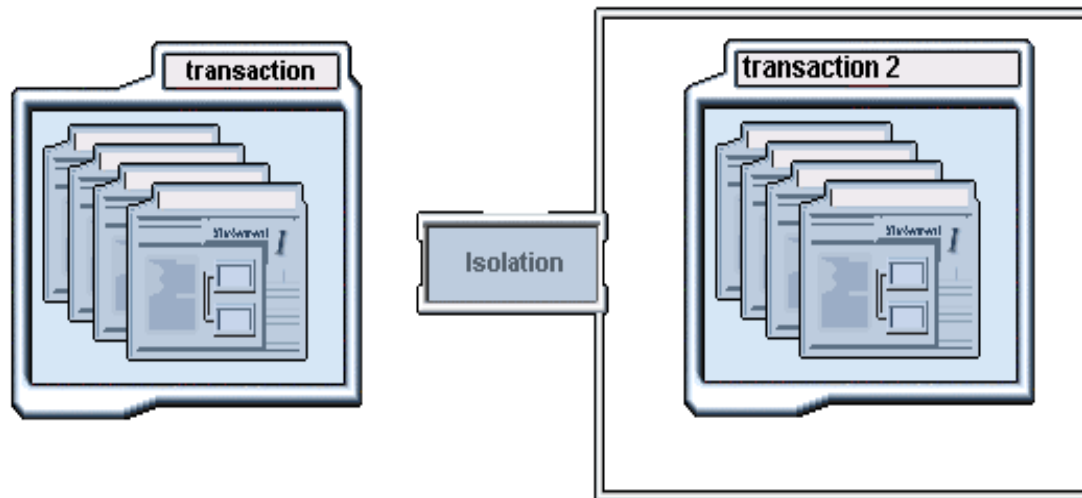


Consistency

- ensures that when the transaction is committed, all relevant databases are in a consistent state.
- ensures that if a transaction is aborted, all databases roll back to the state they were in before the transaction began.

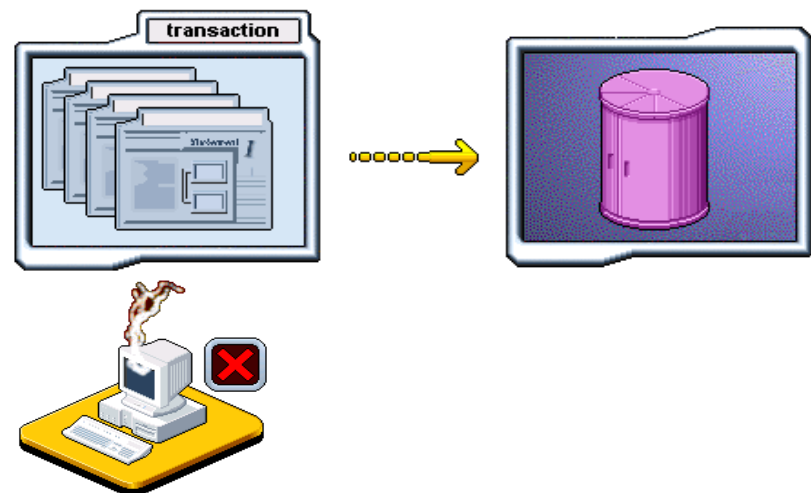
Isolation

- ensures that when the transaction is committed, all relevant databases are in a consistent state by putting an exclusive lock on your data, until you commit or roll back the transaction.
- guarantees that no other transaction can modify the data that your transaction has changed.



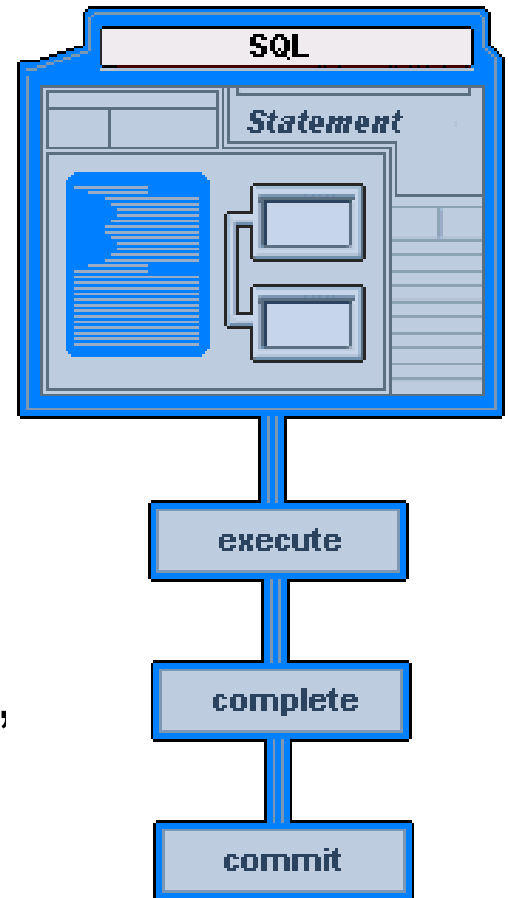
Durability

- ensures that data integrity is maintained even if a system failure occurs during a transaction: a system failure includes such events as a hardware fault or power loss.
- in such cases, the entire transaction is rolled back when the system is restarted, the databases revert to the state that they were in immediately before the system failure occurred.



Transaction steps

- For each SQL statement:
 - execute
 - complete
 - Commit or rollback
- A SQL is committed when it executes its instructions on the database.
- Auto-commit mode is default enabled, when creating a connection, but can be disabled.



➔ each **SQL statement** is treated as a **transaction**.

Questions & Answers



Questions & Answers

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facebook Search Alina Elena

BE > YOU IMAGINED

BE GREATER THAN

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