Using PreparedStatements

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What's in This Module

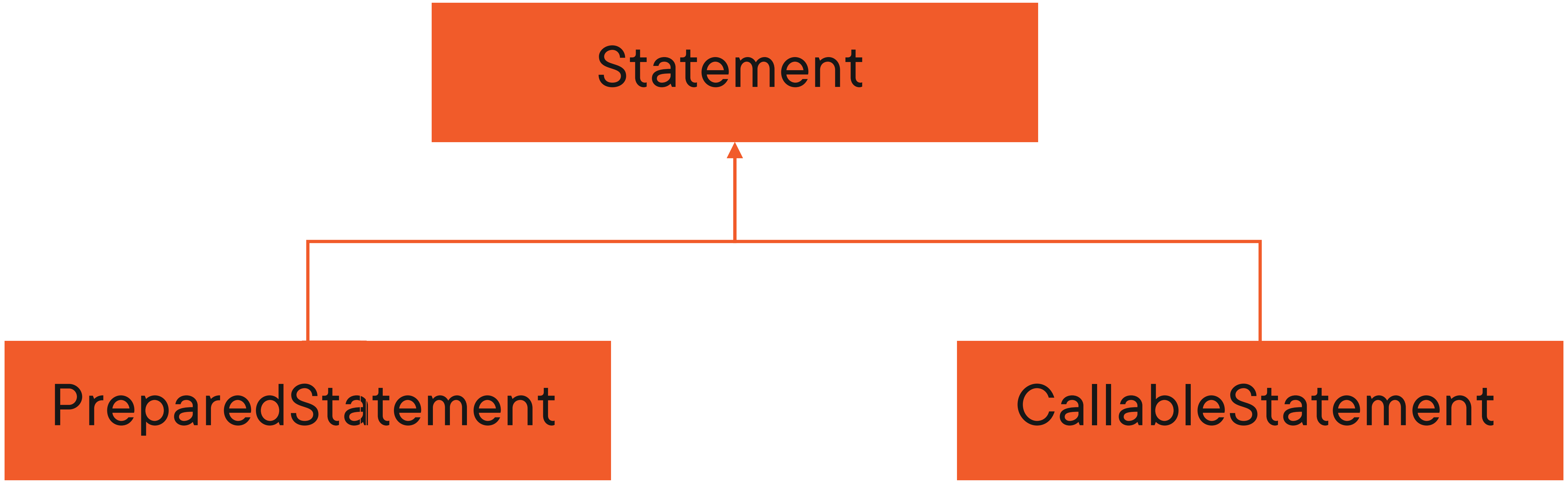
Using a PreparedStatement to read and write to the database

Using parameters in a PreparedStatement

Using the ExecuteQuery and Execute methods

Understand the use of SQLException

Different 'Statement' Interfaces



PreparedStatement

Represents a SQL statement that will be sent to the database

Can be used for any CRUD operation

PreparedStatement has methods to modify and read data from the database

Closing Resources

Like connections, prepared statements must be closed

Use try with resources

Note that closing a connection will also close any associated prepared statements

'execute' Methods

Three 'execute' methods on PreparedStatement

- ✓ **executeUpdate**
- ✓ **executeQuery**
- ✓ **execute**

Demo

Create and execute queries with a PreparedStatement

execute Methods

Method	Return type	What is returned for SELECT	What is returned for INSERT/UPDATE/DELETE
execute	boolean	true	false
executeQuery	ResultSet	data	n/a
executeUpdate	int	n/a	number of rows changed

PreparedStatement can be parameterized

Can pass parameters into the query

Parameters represented by '?' in the query string

Parameters have a type

- Int, String etc

Set the value of the parameter by position

- 1 based positions not 0

```
var sql = "insert into venues (name, Capacity)
values(?, ?)";

try(PreparedStatement

        ps = conn.prepareStatement(sql)) {

        ps.setString(1, "The Coliseum");

        ps.setInt(2, 300);

        ps.executeUpdate();

}
```

◀ **Create SQL statement**

◀ **Create the PreparedStatement**

◀ **Set the value of the variables**

◀ **Execute the statement**

Parameters

Are used for all the query types

- Create, Read, Update, Delete

Are 1 based

Do not have to be set in order

All have to be set

```
var sql = "insert into venues (name, Capacity)
values(?, ?)";

try(PreparedStatement

        ps = conn.prepareStatement(sql)) {

        ps.setString(1, "The Colosseum");

        ps.setInt(2, 300);

        ps.executeUpdate();



        ps.setString(1, "The Garden");

        ps.executeUpdate();

}
```

◄ **Create SQL statement**

◄ **Create the PreparedStatement**

◄ **Set the value of the variables**

◄ **Execute the statement**

◄ **Set new values (only one has changed)**

◄ **Execute the statement**

preparedStatement Set Methods

Method	Parameter Type	Example Database Type
setBoolean	Boolean	BOOLEAN
setDouble	Double	DOUBLE
setInt	Int	INTEGER
setLong	Long	BIGINT
setObject	Object	Any type
setString	String	CHAR, VARCHAR

Summary

Use a PreparedStatement to execute SQL

Can be parameterized

Parameters are 1 based

Set values with a specific type

Can execute multiple times

Execute with different methods depending on the query

Up Next:

Working with Data from a PreparedStatement