

## **Day-17 Interview Questions**

### **1.What is a Prepared Statement in JDBC, and why is it useful?**

A Prepared Statement is a precompiled SQL statement that is used to improve the performance and security of database operations. It allows for the efficient execution of the same SQL query with different parameter values.

### **2.How does a Prepared Statement differ from a regular Statement in JDBC?**

A Prepared Statement is precompiled and cached by the database, which can lead to better performance and protection against SQL injection. A regular Statement is not precompiled and can be less efficient and vulnerable to SQL injection.

### **3.What are the main advantages of using Prepared Statements?**

The main advantages of Prepared Statements are:

Improved performance due to query precompilation.

Protection against SQL injection attacks.

Simplified parameter binding.

### **4.Explain the process of parameter binding in a Prepared Statement?**

Parameter binding is the process of associating placeholders in a SQL query with actual parameter values. It involves using methods like `setInt`, `setString`, etc., to specify the values for placeholders in the Prepared Statement.

### **5.Can you give an example of how to use a Prepared Statement to execute a SQL query with input parameters in Java?**

```
PreparedStatement preparedStatement = connection.prepareStatement("SELECT *  
FROM employees WHERE department = ?");  
preparedStatement.setString(1, "HR");  
ResultSet resultSet = preparedStatement.executeQuery();  
Callable Statement Interview Questions:
```

### **6 What is a Callable Statement in JDBC, and what is its primary purpose?**

A Callable Statement is a JDBC feature used to call stored procedures or functions in a database. Its primary purpose is to execute database operations that are defined as stored procedures or functions.

**7. How do you differentiate between a Callable Statement and a Prepared Statement in terms of usage and functionality?**

Callable Statements are specifically designed for calling stored procedures and functions, while Prepared Statements are used for executing parameterized SQL queries. Callable Statements can handle input and output parameters, whereas Prepared Statements focus on input parameters.

**8.What are IN, OUT, and INOUT parameters in a Callable Statement?**

IN parameters are used to pass values into a stored procedure, OUT parameters are used to receive values from a stored procedure, and INOUT parameters allow for both input and output values.

**9.Explain the steps involved in calling a stored procedure using a Callable Statement in Java.**

The steps include:

Preparing the Callable Statement with the procedure call.

Setting input parameters using setXxx methods.

Registering output parameters using registerOutParameter.

Executing the Callable Statement.

Retrieving output values using getXxx methods.

**10.What is the significance of using registerOutParameter in a Callable Statement?**

registerOutParameter is used to specify the data type of an output parameter and make it available for retrieval after executing the Callable Statement.

**11. Can you describe a scenario where you might prefer to use a Callable Statement over a Prepared Statement or Statement?**

Callable Statements are preferred when interacting with stored procedures or functions in the database, especially when dealing with complex business logic that involves multiple SQL statements and transactions.

**12.What is the difference between a Callable Statement and a PreparedStatement when it comes to handling database transactions?**

Callable Statements can be used to call stored procedures that include transaction management logic, making them suitable for handling transactions. PreparedStatement primarily focus on executing SQL queries.