

# JDBC

## Database Programming

### JDBC Tutorial

JDBC - Home

JDBC - Introduction

JDBC - SQL Syntax

JDBC - Environment

JDBC - Sample Code

JDBC - Driver Types

JDBC - Connections

### JDBC - Statements

JDBC - Result Sets

JDBC - Data Types

JDBC - Transactions

JDBC - Exceptions

JDBC - Batch Processing

JDBC - Stored Procedure

JDBC - Streaming Data

### JDBC Examples

JDBC - Create Database

JDBC - Select Database

JDBC - Drop Database

JDBC - Create Tables

JDBC - Drop Tables

JDBC - Insert Records

JDBC - Select Records

JDBC - Update Records

JDBC - Delete Records

JDBC - WHERE Clause

JDBC - Like Clause

## JDBC - Statement Object Example

### Advertisements



[Previous Page](#)

Following is the example which makes use of following three queries along with statement:

**boolean execute(String SQL)** : Returns a boolean value of true if a Result retrieved; otherwise, it returns false. Use this method to execute SQL DDL s you need to use truly dynamic SQL.

**int executeUpdate(String SQL)** : Returns the numbers of rows affected by the SQL statement. Use this method to execute SQL statements for which you number of rows affected - for example, an INSERT, UPDATE, or DELETE statement.

**ResultSet executeQuery(String SQL)** : Returns a ResultSet object. Use this object to get a result set, as you would with a SELECT statement.

This sample code has been written based on the environment and database setup chapters.

Copy and past following example in JDBCExample.java, compile and run as follows

```
//STEP 1. Import required packages
import java.sql.*;

public class JDBCExample {
    // JDBC driver name and database URL
    static final String JDBC_DRIVER = "com.mysql.jdbc.Driver";
    static final String DB_URL = "jdbc:mysql://localhost/EMP";

    // Database credentials
    static final String USER = "username";
    static final String PASS = "password";

    public static void main(String[] args) {
        Connection conn = null;
        Statement stmt = null;
        try {
            //STEP 2: Register JDBC driver
            Class.forName("com.mysql.jdbc.Driver");

            //STEP 3: Open a connection
            System.out.println("Connecting to database...");
            conn = DriverManager.getConnection(DB_URL, USER, PASS);

            //STEP 4: Execute a query
            System.out.println("Creating statement...");
            stmt = conn.createStatement();
            String sql = "UPDATE Employees set age=30 WHERE id=103";

            // Let us check if it returns a true Result Set or not.
            Boolean ret = stmt.execute(sql);
```

## JDBC Useful Resources

JDBC - Quick Guide

JDBC Useful Resources

Useful Java Tutorials

## Selected Reading

Developer's Best Practices

Effective Resume Writing

Computer Glossary

Who is Who

```
System.out.println("Return value is : " + ret.toString() );

// Let us update age of the record with ID = 103;
int rows = stmt.executeUpdate(sql);
System.out.println("Rows impacted : " + rows );

// Let us select all the records and display them.
sql = "SELECT id, first, last, age FROM Employees";
ResultSet rs = stmt.executeQuery(sql);

//STEP 5: Extract data from result set
while(rs.next()){
    //Retrieve by column name
    int id  = rs.getInt("id");
    int age = rs.getInt("age");
    String first = rs.getString("first");
    String last  = rs.getString("last");

    //Display values
    System.out.print("ID: " + id);
    System.out.print(", Age: " + age);
    System.out.print(", First: " + first);
    System.out.println(", Last: " + last);
}

//STEP 6: Clean-up environment
rs.close();
stmt.close();
conn.close();
}catch(SQLException se){
    //Handle errors for JDBC
    se.printStackTrace();
}catch(Exception e){
    //Handle errors for Class.forName
    e.printStackTrace();
}finally{
    //finally block used to close resources
    try{
        if(stmt!=null)
            stmt.close();
    }catch(SQLException se2){
    }// nothing we can do
    try{
        if(conn!=null)
            conn.close();
    }catch(SQLException se){
        se.printStackTrace();
    }//end finally try
}//end try
System.out.println("Goodbye!");
}//end main
}//end JDBCExample
```

Now let us compile above example as follows:

```
C:\>javac JDBCExample.java
C:\>
```

When you run **JDBCExample**, it produces following result:

```
C:\>java JDBCExample
Connecting to database...
Creating statement...
Return value is : false
Rows impacted : 1
ID: 100, Age: 18, First: Zara, Last: Ali
ID: 101, Age: 25, First: Mahnaz, Last: Fatma
ID: 102, Age: 30, First: Zaid, Last: Khan
ID: 103, Age: 30, First: Sumit, Last: Mittal
Goodbye!
```

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