

JDBC - SORTING DATA EXAMPLE

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This chapter provides an example on how to sort records from a table using JDBC application. This would use **asc** and **desc** keywords to sort records in ascending or descending order. Before executing the following example, make sure you have the following in place –

- To execute the following example you can replace the *username* and *password* with your actual user name and password.
- Your MySQL or whatever database you are using, is up and running.

Required Steps

The following steps are required to create a new Database using JDBC application –

- **Import the packages:** Requires that you include the packages containing the JDBC classes needed for database programming. Most often, using *import java.sql.** will suffice.
- **Register the JDBC driver:** Requires that you initialize a driver so you can open a communications channel with the database.
- **Open a connection:** Requires using the *DriverManager.getConnection* method to create a Connection object, which represents a physical connection with a database server.
- **Execute a query:** Requires using an object of type Statement for building and submitting an SQL statement to sort records from a table. These Queries make use of **asc** and **desc** clauses to sort data in ascending and descending orders.
- **Clean up the environment:** Requires explicitly closing all database resources versus relying on the JVM's garbage collection.

Sample Code

Copy and paste the 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/STUDENTS";

    // 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 a selected database...");
            conn = DriverManager.getConnection(DB_URL, USER, PASS);
            System.out.println("Connected database successfully...");

            //STEP 4: Execute a query
            System.out.println("Creating statement...");
            stmt = conn.createStatement();

            // Extract records in ascending order by first name.
```

```

System.out.println("Fetching records in ascending order...");
String sql = "SELECT id, first, last, age FROM Registration" +
            " ORDER BY first ASC";
ResultSet rs = stmt.executeQuery(sql);

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);
}

// Extract records in descending order by first name.
System.out.println("Fetching records in descending order...");
sql = "SELECT id, first, last, age FROM Registration" +
      " ORDER BY first DESC";
rs = stmt.executeQuery(sql);

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);
}
rs.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)
            conn.close();
    }catch(SQLException se){
    }// do nothing
    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 the above example as follows –

```

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

```

When you run **JDBCExample**, it produces the following result –

```
C:\>java JDBCExample
Connecting to a selected database...
Connected database successfully...
Creating statement...
Fetching records in ascending order...
ID: 103, Age: 28, First: Sumit, Last: Mittal
ID: 102, Age: 30, First: Zaid, Last: Khan
ID: 100, Age: 30, First: Zara, Last: Ali
Fetching records in descending order...
ID: 100, Age: 30, First: Zara, Last: Ali
ID: 102, Age: 30, First: Zaid, Last: Khan
ID: 103, Age: 28, First: Sumit, Last: Mittal
Goodbye!
C:\>
```

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