Java Assignment No.9

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/*
    Ques : Create below table in database.
Student (Roll_No int, Name String, City varchar, Grade Char,
Marks number)
Write a java program to perform below operations also use
exception handling to handle different exceptions (like database
connection error, query error etc. as per your choice)
a) Insert below data in above table.
1. Atul, Sangli, A, 90.50
2. Sangram, Sangli, B, 70.25
3. Satya, Mumbai, B, 61.36
4. Jaydeep, Pune, B, 60.95
5. Prashant, Sangli, C, 55.26
6. Abhi, Pune, C, 55.84

    Name : Sandesh shivaji shinde
    PRN : 23620006
*/

import java.sql.*;

public class Ques_1 {
    // Database connection parameters
    static final String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
    static final String DB_URL = "jdbc:mysql://localhost:3306/mydb"; // Change mydb to
your database name
    static final String USER = "root";
    static final String PASS = "root";

    public static void main(String[] args) {
        Connection conn = null;
        Statement stmt = null;

        try {
            // Register JDBC driver
            Class.forName(JDBC_DRIVER);

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

            // Create a statement
            stmt = conn.createStatement();

            // Create Students table
            String createTableSQL = "CREATE TABLE IF NOT EXISTS Students ("
                    + "Roll_No INT PRIMARY KEY,"
                    + "Name VARCHAR(255),"
                    + "City VARCHAR(255),"
                    + "Grade CHAR(1),"
                    + "Marks DECIMAL(5,2)"
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                + ")";
            stmt.executeUpdate(createTableSQL);

            // Insert data into the table
            String[] insertData = {
                    "INSERT INTO Students VALUES (1, 'Atul', 'Sangli', 'A', 90.50)",
                    "INSERT INTO Students VALUES (2, 'Sangram', 'Sangli', 'B', 70.25)",
                    "INSERT INTO Students VALUES (3, 'Satya', 'Mumbai', 'B', 61.36)",
                    "INSERT INTO Students VALUES (4, 'Jaydeep', 'Pune', 'B', 60.95)",
                    "INSERT INTO Students VALUES (5, 'Prashant', 'Sangli', 'C', 55.26)",
                    "INSERT INTO Students VALUES (6, 'Abhi', 'Pune', 'C', 55.84)"
            };
            for (String sql : insertData) {
                stmt.executeUpdate(sql);
            }
            System.out.println("Data inserted successfully.");

            // Delete record for Roll_No 5
            String deleteRecordSQL = "DELETE FROM Students WHERE Roll_No = 5";
            stmt.executeUpdate(deleteRecordSQL);
            System.out.println("Record with Roll_No 5 deleted successfully.");

            // Update city from Sangli to Pune
            String updateCitySQL = "UPDATE Students SET City = 'Pune' WHERE City =
'Sangli'";
            stmt.executeUpdate(updateCitySQL);
            System.out.println("City updated successfully.");

            // Display names of students having marks greater than 60
            String displayNamesSQL = "SELECT Name FROM Students WHERE Marks > 60";
            ResultSet rs = stmt.executeQuery(displayNamesSQL);
            System.out.println("Names of students with marks greater than 60:");
            while (rs.next()) {
                System.out.println(rs.getString("Name"));
            }

            // Display students according to their marks (Descending order)
            String displayByMarksSQL = "SELECT * FROM Students ORDER BY Marks DESC";
            rs = stmt.executeQuery(displayByMarksSQL);
            System.out.println("\nStudents sorted by marks (Descending order):");
            while (rs.next()) {
                System.out.println(rs.getInt("Roll_No") + "\t" +
                                   rs.getString("Name") + "\t" +
                                   rs.getString("City") + "\t" +
                                   rs.getString("Grade") + "\t" +
                                   rs.getDouble("Marks"));
            }

            // Clean-up environment
            rs.close();
            stmt.close();
            conn.close();
        } catch (SQLException se) {
            // Handle errors for JDBC
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            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
    }
}
```

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10      public static void main(String[] args) {
11          Connection conn = null;
12          Statement stmt = null;
```

OUTPUT TERMINAL PORTS DEBUG CONSOLE PROBLEMS

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D:\Documents\Adv Java\Database-mysql>java DatabaseOperations.java
Connecting to database...
Data inserted successfully.
Record with Roll_No 5 deleted successfully.
City updated successfully.
Names of students with marks greater than 60:
Atul
Sangram
Satya
Jaydeep

Students sorted by marks (Descending order):
1       Atul    Pune    A       90.5
2       Sangram Pune    B       70.25
3       Satya   Mumbai  B       61.36
4       Jaydeep Pune    B       60.95
6       Abhi    Pune    C       55.84

D:\Documents\Adv Java\Database-mysql>
```