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import java.sql.*;
import java.util.Scanner;
public class StudentInfo {
        // Database connection setup
        private static final String URL = "jdbc:mysql://localhost:3306/StudentDB";
        private static final String USER = "root";
    private static final String PASSWORD = "";
     public static void main(String[] args) {
            try (Connection connection = DriverManager.getConnection(URL, USER, PASSWORD)) {
                Scanner scanner = new Scanner(System.in);
                int choice;

                do {
                    System.out.println("\n--- Student Information System ---");
                    System.out.println("1. Insert Student");
                    System.out.println("2. Update Student");
                    System.out.println("3. Delete Student");
                    System.out.println("4. Display All Students");
                    System.out.println("5. Exit");
                    System.out.print("Enter your choice: ");
                    choice = scanner.nextInt();
                    switch (choice) {
                        case 1:
                            insertStudent(connection, scanner);
                            break;
                        case 2:
                            updateStudent(connection, scanner);
                            break;
                        case 3:
                            deleteStudent(connection, scanner);
                            break;
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            case 4:
                displayStudents(connection);
                break;
            case 5:
                System.out.println("Exiting...");
                break;
            default:
                System.out.println("Invalid choice! Please try again.");
        }
    } while (choice != 5);

    scanner.close();
  } catch (SQLException e) {
    e.printStackTrace();
  }
}

private static void insertStudent(Connection connection, Scanner scanner) {
  try {
    System.out.print("Enter Student ID: ");
    int id = scanner.nextInt();
    scanner.nextLine();
    System.out.print("Enter Name: ");
    String name = scanner.nextLine();
    System.out.print("Enter Age: ");
    int age = scanner.nextInt();
    scanner.nextLine();
    System.out.print("Enter Course: ");
    String course = scanner.nextLine();

    String sql = "INSERT INTO student (student_id, name, age, course) VALUES (?, ?, ?, ?)";
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        try (PreparedStatement statement = connection.prepareStatement(sql)) {
            statement.setInt(1, id);
            statement.setString(2, name);
            statement.setInt(3, age);
            statement.setString(4, course);

            int rows = statement.executeUpdate();
            if (rows > 0) {
                System.out.println("Student inserted successfully!");
            }
        }
    } catch (SQLException e) {
        System.out.println("Error inserting student: " + e.getMessage());
    }
}

private static void updateStudent(Connection connection, Scanner scanner) {
    try {
        System.out.print("Enter Student ID to Update: ");
        int id = scanner.nextInt();
        scanner.nextLine(); // Consume newline
        System.out.print("Enter New Name: ");
        String name = scanner.nextLine();
        System.out.print("Enter New Age: ");
        int age = scanner.nextInt();
        scanner.nextLine(); // Consume newline
        System.out.print("Enter New Course: ");
        String course = scanner.nextLine();

        String sql = "UPDATE student SET name = ?, age = ?, course = ? WHERE student_id = ?";
        try (PreparedStatement statement = connection.prepareStatement(sql)) {
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            statement.setString(1, name);
            statement.setInt(2, age);
            statement.setString(3, course);
            statement.setInt(4, id);

            int rows = statement.executeUpdate();
            if (rows > 0) {
                System.out.println("Student updated successfully!");
            } else {
                System.out.println("Student ID not found.");
            }
        }
    } catch (SQLException e) {
        System.out.println("Error updating student: " + e.getMessage());
    }
}

private static void deleteStudent(Connection connection, Scanner scanner) {
    try {
        System.out.print("Enter Student ID to Delete: ");
        int id = scanner.nextInt();

        String sql = "DELETE FROM student WHERE student_id = ?";
        try (PreparedStatement statement = connection.prepareStatement(sql)) {
            statement.setInt(1, id);

            int rows = statement.executeUpdate();
            if (rows > 0) {
                System.out.println("Student deleted successfully!");
            } else {
                System.out.println("Student ID not found.");
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            }
        }
    } catch (SQLException e) {
        System.out.println("Error deleting student: " + e.getMessage());
    }
}

private static void displayStudents(Connection connection) {
    try {
        String sql = "SELECT * FROM student";
        try (Statement statement = connection.createStatement();
             ResultSet resultSet = statement.executeQuery(sql)) {

            System.out.println("\n--- Student Records ---");
            while (resultSet.next()) {
                int id = resultSet.getInt("student_id");
                String name = resultSet.getString("name");
                int age = resultSet.getInt("age");
                String course = resultSet.getString("course");

                System.out.println("ID: " + id + ", Name: " + name + ", Age: " + age + ", Course: " +
course);
            }
        }
    } catch (SQLException e) {
        System.out.println("Error displaying students: " + e.getMessage());
    }
}
}
```