Advanced Java Lab

Week-3

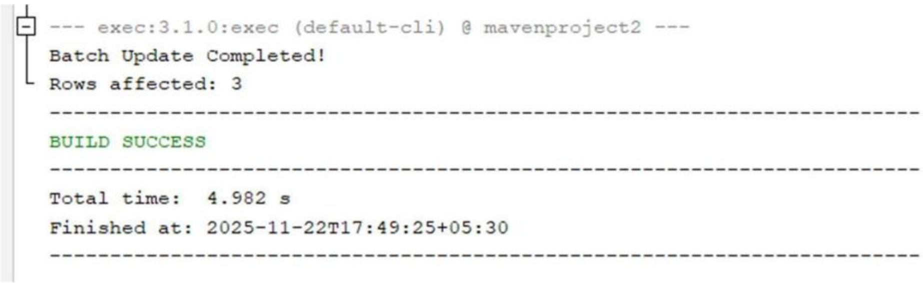
Roll Number: 248W5A1213

1. Implement batch update using JDBC.

Code:

```
import java.sql.*;


public class Mavenproject2 {
    public static void main(String[] args) {


        String url = "jdbc:mysql://localhost:3306/mydb";
        String user = "root";
        String password = "";


        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection con = DriverManager.getConnection(url, user, password);


            con.setAutoCommit(false); // REQUIRED FOR BATCH


            String sql = "INSERT INTO Person (PersonID, FirstName, City) VALUES (?, ?, ?)";
            PreparedStatement ps = con.prepareStatement(sql);


            // Record 1
            ps.setInt(1, 201);
            ps.setString(2, "Rohit");
            ps.setString(3, "Nagpur");
            ps.addBatch();

            // Record 2
            ps.setInt(1, 202);
            ps.setString(2, "Sneha");
            ps.setString(3, "Kolkata");
            ps.addBatch();

            // Record 3
            ps.setInt(1, 203);
            ps.setString(2, "Kavya");
            ps.setString(3, "Goa");
            ps.addBatch();

            // Execute all queries in one go
            int[] results = ps.executeBatch();

            con.commit();
            con.close();

            System.out.println("Batch Update Completed!");
            System.out.println("Rows affected: " + results.length);

        } catch (Exception e) {
            System.out.println("Error: " + e);
        }
    }
}
```

Output:



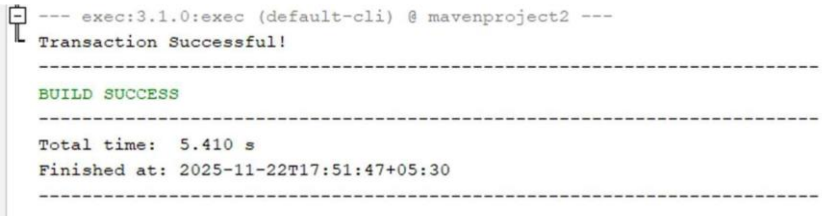
```
--- exec:3.1.0:exec (default-cli) @ mavenproject2 ---
Batch Update Completed!
Rows affected: 3
------------------------------------------------------------------------
BUILD SUCCESS
------------------------------------------------------------------------
Total time:  4.982 s
Finished at: 2025-11-22T17:49:25+05:30
------------------------------------------------------------------------
```

2. Create a CRUD application using JDBC with transaction

Code:

```
package com.mycompany.mavenproject2;


import java.sql.*;


public class Mavenproject2 {
    public static void main(String[] args) {


        String url = "jdbc:mysql://localhost:3306/mydb";
        String user = "root";
        String password = "";


        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection con = DriverManager.getConnection(url, user, password);


            con.setAutoCommit(false); // IMPORTANT


            // INSERT -------------------------------------------------------
            String insertSQL = "INSERT INTO Person (PersonID, FirstName, City) VALUES (?, ?, ?)";

            PreparedStatement  insert  =  con.prepareStatement(insertSQL);

            insert.setInt(1, 301);

            insert.setString(2,   "Anita");

            insert.setString(3,   "Surat");

            insert.executeUpdate();


            // UPDATE -------------------------------------------------------

            String updateSQL = "UPDATE Person SET City=? WHERE PersonID=?";

            PreparedStatement update = con.prepareStatement(updateSQL);

            update.setString(1, "Vadodara");

            update.setInt(2, 301);

            update.executeUpdate();


            // DELETE -------------------------------------------------------

            String deleteSQL = "DELETE FROM Person WHERE PersonID=?";

            PreparedStatement delete = con.prepareStatement(deleteSQL);

            delete.setInt(1, 202); // delete existing user

            delete.executeUpdate();


            // If everything successful → COMMIT

            con.commit();

            System.out.println("Transaction Successful!");


            con.close();

        }

        catch (SQLException e) {

            System.out.println("Database Error: " + e.getMessage());
            try {
                // ROLLBACK on failure
                Connection con = DriverManager.getConnection(url, user, password);
                con.rollback();
                System.out.println("Transaction Rolled Back!");
            } catch (SQLException ex) {
                System.out.println("Rollback Failed: " + ex.getMessage());
            }
        }
        catch (Exception ex) {
            System.out.println("Error: " + ex.getMessage());
        }
    }
}
```

Output:



```
--- exec:3.1.0:exec (default-cli) @ mavenproject2 ---
Transaction Successful!
------------------------------------------------------------------------
BUILD SUCCESS
------------------------------------------------------------------------
Total time:  5.410 s
Finished at: 2025-11-22T17:51:47+05:30
------------------------------------------------------------------------
```