# LAB 7

Program 1:

```
import java.sql.Connection; import java.sql.DriverManager; import
java.sql.SQLException; import java.sql.Statement; public class StudentDatabase {
private static final String JDBC_URL = "jdbc:mysql://localhost:3306/student_database";
private static final String USERNAME = "your_username";     private static final String
PASSWORD = "your_password";  public static void main(String[] args) {
      String createTableSQL = "CREATE TABLE students ("
              + "id INT AUTO_INCREMENT PRIMARY KEY,"
              + "name VARCHAR(100),"
              + "age INT,"
              + "grade VARCHAR(10)"
              + ")";
String insertDataSQL = "INSERT INTO students (name, age, grade) VALUES "
              + "('John Doe', 20, 'A'),"
              + "('Jane Smith', 21, 'B'),"
              + "('Mike Johnson', 22, 'C')";
  try (Connection connection = DriverManager.getConnection(JDBC_URL, USERNAME,
PASSWORD);             Statement statement = connection.createStatement()) {
statement.execute(createTableSQL);
          System.out.println("Table created successfully."); statement.executeUpdate(insertDataSQL);
          System.out.println("Data inserted successfully.");
} catch (SQLException e) {
          e.printStackTrace();
      }
   }
}
```

Program 2:

```
import java.sql.*; public class StudentDatabase {     static final String
JDBC_URL = "jdbc:mysql://localhost:3306/student_db";     static final String
```

```
USERNAME = "username";     static final String PASSWORD = "password";
public static void main(String[] args) {
       try (Connection connection = DriverManager.getConnection(JDBC_URL, USERNAME,
PASSWORD)) {
         createTable(connection);  insertData(connection, "John
Doe", 25, "Computer Science");   updateData(connection,
"John Doe", 26);  deleteData(connection, "John Doe");        }
catch (SQLException e) {
           e.printStackTrace();
       }
   }
 private static void createTable(Connection connection) throws SQLException {
       String sql = "CREATE TABLE IF NOT EXISTS students (" +
                   "id INT AUTO_INCREMENT PRIMARY KEY," +
                   "name VARCHAR(255) NOT NULL," +
                   "age INT NOT NULL," +
                   "major VARCHAR(255) NOT NULL)";  try
(Statement statement = connection.createStatement()) {
statement.execute(sql);
       }
   }
 private static void insertData(Connection connection, String name, int age, String major) throws
SQLException {
       String sql = "INSERT INTO students (name, age, major) VALUES (?, ?, ?)";   try
(PreparedStatement preparedStatement = connection.prepareStatement(sql)) {
preparedStatement.setString(1, name);            preparedStatement.setInt(2, age);
preparedStatement.setString(3, major);  preparedStatement.executeUpdate();
       }
   }
 private static void updateData(Connection connection, String name, int newAge) throws
SQLException {
        String sql = "UPDATE students SET age = ? WHERE name = ?"; try
(PreparedStatement preparedStatement = connection.prepareStatement(sql)) {
preparedStatement.setInt(1, newAge);            preparedStatement.setString(2,
name);           preparedStatement.executeUpdate();
        }
    }
 private static void deleteData(Connection connection, String name) throws SQLException {
String sql = "DELETE FROM students WHERE name = ?"; try (PreparedStatement
preparedStatement = connection.prepareStatement(sql)) {
preparedStatement.setString(1, name);     preparedStatement.executeUpdate();
        }
    }
}
```