

# Lab – Java – MS Access DB and JDBC

## **Overview**

Write a Java application that uses an MS Access database. The application should use JDBC to connect to the database.

## **Create a MS Access Database**

- Create a database named Company in MS Access.
- Add a table named Employees to the database.
- Add the following fields to the table:

| <u>Column Name</u> | <u>Datatype</u> |
|--------------------|-----------------|
| Id (Primary Key)   | AutoNumber      |
| EmployeeName       | Short Text      |
| Salary             | Number          |

- Now add a few rows of data to the table in MS Access. Here is the data to add to the table:

| <u>Id</u> | <u>Name</u> | <u>Salary</u> |
|-----------|-------------|---------------|
| 1         | Rose Diaz   | 100000        |
| 2         | Mateo Lopez | 50000         |

## **Create Console Application**

Create a new Java console application to read data from the database. Make sure to do the following with the project:

- Add the Maven dependency to create MS Access files in code.
- Add the Maven dependency for the JDBC client driver.

## **Create MS Access Database Using Code**

Write a method to create a database School.accdb in code. It should only create it if the file does not exist. Call the method in main.

## **Create a Table in the Database Using Code**

Write a method to create a table named students in the School.accdb database using code. The program must execute an SQL statement in the Java program to create the table.

- Add the following fields to the table:

| <u>Column Name</u> | <u>Datatype</u> |
|--------------------|-----------------|
|--------------------|-----------------|

|       |               |
|-------|---------------|
| Name  | nvarchar(255) |
| Major | nvarchar(255) |

After running the program make sure the table was properly created in the School.accdb database.

Comment out the create table code in your program after you confirm that it worked.

### ***Insert Data into the Students Table***

Write a method to insert a student into the students table. It should take a Connection, a name, and a major as parameters. Call the method from main as necessary. Put in at least three records.

After running the program make sure the table was properly created in the School.accdb database.

Comment out the create code to insert after you confirm that it worked.

### ***Retrieve Data from DB and Display in Console***

Write a method to retrieve data from the students table and display all the data on the console.

### ***Delete a Record***

Write a method to delete students with a given name from the database. It should take a connection and name as parameters. Display the table data before and after deleting the record.

Comment out the delete code after you confirm that it worked.

### ***Save to File***

Write a method to save all DB data to a file. It should take a filename as a parameter. It should save the name and major for each record to the file. Put each piece of data on a separate line in the output file. Call the method from main.

### ***Read from File***

Write a method to read all data from a file and insert it into the student table. Assume each piece of data is on a separate line. Call the method from main.

### ***Clear data from the Students Table***

Write a method to clear all data from the students table. Call the method from main.

### ***Update Major***

Write a method to update the major of a student given a name. This method should take the name and the new major as parameters.