**Manage customer data (GUI)**

## C:\Users\Joel\Documents\MMA Current\Beginning Java with NetBeans IG\22-3a.png

## Operation

* This application begins by displaying a table of customer data.
* If the user clicks the Add button, the application allows the user to add customer data to the table (and the underlying database).
* If the user selects a customer row and clicks the Edit button, the application allows the user to update the data for the selected customer row in the table (and the database).
* If the user selects a customer row and clicks the Delete button, the application deletes the selected customer row from the table (and the database).

## Specifications

* Create a table in the mma database described in chapter 19 to store the necessary data. To do that, you can use the SQL script stored in the create\_customer\_table.sql file that’s supplied. If this script isn’t supplied, you can create your own SQL script.
* Create a class named Customer that stores data for the user’s id, email address, first name, and last name.
* Create a class named CustomerDB that contains the methods necessary to get an array list of Customer objects, to get a Customer object for the customer with the specified id, and to add, update, or delete the specified customer.
* Create a CustomerManagerFrame class like the one shown above. This frame should display a table of customer data as well as the Add, Edit, and Delete buttons. This class should use the Customer and CustomerDB classes to work with the customer data.
* Create a CustomerForm class that allows the user to add or edit customer data.

Create a Java Customer Management program with NetBeans that satisfies the specifications above.

Put **General Comments** at the beginning of the project that includes (1) your name, (2) the project name, (3) the date, and (4) a description of the project.

Create screen shots of the GUI output by using **Alt-Print Screen**. This will capture the active window of the GUI only, not the entire screen. Then use Paste to copy the GUI image into the Word document. This will be the documentation for testing the program. Show multiple screen shots of the program to verify that the validation works properly.

Report an **estimate** of the **time** it took to complete the project. Report a single value in hours. Also give a single **rating** of the project, on an ordinal scale, as either (1) Easy, (2) Moderate, (3) Hard, OR (4) Challenging.