University of Toronto
CSC343, Summer 2019

JDBC Exercise

Follow these steps to connect a Java program to your postgreSQL database and run some queries from Java. **See the other side for the most common errors students make.**

1. Log on to `dbsrv1.teach.cs.toronto.edu`

2. Create a directory where you'd like to do this work and `cd` to it.

3. Get a copy of a file, which defines a small dataset (`jelly-beans.sql`) and some java code (`Example.java`) that you will use today:

   ```
   cp ~csc343h/summer/pub/in_class/w6/code/* .
   ```

   (You really do need that period at the end.)

4. Start postgreSQL:

   ```
   psql csc343h-<your username>
   ```

5. Import jelly-beans.sql into your database:

   ```
   \i jelly-beans.sql
   ```

6. Use `\d` to see what is defined and a `SELECT` query to examine the contents of table `guesses`. Then use `\q` to exit psql.

7. Get your bearings in the code. Find the parts where it:

   (a) Establishes a connection to the database.

   (b) Runs a query to find all the guesses by kids under 10, and iterates through the results to print them.

   (c) Builds a query to find all the guesses by a particular person, but with a *placeholder* for the person's name. The program then substitutes in a name entered by the user and goes on to run the query and print the results.

8. Edit `Example.java` to replace `dianeh` with your cdf userid on these two lines:

   ```
   url = "jdbc:postgresql://localhost:5432/csc343h-dianeh";
   conn = DriverManager.getConnection(url, "dianeh", "");
   ```

9. Compile the Java code:

   ```
   javac Example.java
   ```

10. Run the compiled code:

    ```
    java -cp /local/packages/jdbc-postgresql/postgresql-9.4.1212.jar: Example
    ```

    The path to the `jar` file is hard to type. Tip: Use filename completion! (And you really do need that colon.)

Additional Exercises

1. Prompt the user for an age, read the age, and then print the average guess among those from people who are at least that age.

2. Create an array of exactly the right size to hold every name in the table of guesses (without storing duplicates), and then put those name into the array.

Common errors

- If you forget the colon:

```
wolf% java -cp /local/packages/jdbc-postgresql/postgresql-9.4.1212.jar Example
Error: Could not find or load main class Example
```

- If you try to run the code on any machine other than dbsrv1:

```
wolf% java -cp /local/packages/jdbc-postgresql/postgresql-9.4.1212.jar: Example
SQL Exception.<Message>: Connection refused. Check that the hostname and port are correct
and that the postmaster is accepting TCP/IP connections.
```

- If you try to use an executeQuery statement to do an insert. You want to use executeUpdate instead.

```
SQL Exception.<Message>: No results were returned by the query.
```