**Advanced Java**

**Assignment 5**

**JDBC Programming**

**Banking Example**

**Name:**  **100**  **points**  **Due: 11/4/202021**

1. Create a new project and copy the code I provided from the assignment5 package into your new project. Do not use our CS3-2021 project for your code. Copy the files you need to a new project.
2. Create a file called **Tables.sql** in the assignment5 package that contains the SQL code for the tables you need to store Customers, Accounts and Addresses. Your primary keys can be auto generated. You will be graded on your table design and SQL code. **(10 points)**
3. Use our MYSQL\_Helper class with your database connection information placed in a property file for full credit with this assignment. Copy any required files into your new project for this assignment.
4. Write a class in the assignment5 package called **CreateTables** to create the tables you designed in question 2 and to store (1) Customers with the primary key being the customer identification number and (2) Accounts with the primary key being the account number. A foreign key in account will be to the customer who is the owner of this account. (3) Addresses for our customers. **(10 points)**
5. You need to link addresses with customers. Assume multiple customers can have the same address, but each customer only has one address. (**5 points**)
6. The main program of the create tables class should also insert at least 5 customers and accounts with realistic names, addresses, birthdates, and such. Part of your grade will be on how realistic the data you store in your tables appears to me. This class should drop any tables that exist when it executes (like my code) (**10 points**).
7. Write the missing JavaDoc comments for my Database class **(10 points).**
8. Write a class called **DatabaseMySQLImpl** that implements the interface Database (**25 points).**
9. Write a main test program in the class **TestDatabase** to test **each** of your methods. And verify they work. **(20 points).** This code needs to use each method three times and test error conditions, like withdrawing too much money. You can only earn these points if questions 1 to 7 are correctly completed.
10. Copy this document to your drop box folder with your name typed in the appropriate places ( -5 if not accomplished correctly)
11. Copy only the assignment5 package to your drop box folder as text files, not compressed files (-10 if not accomplished correctly).

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| Requirement - Notes | Points Possible | Points Earned |
| Tables.sql | 10 |  |
| SQL statements to create tables | 10 |  |
| Insert statements in create tables code | 10 |  |
| Documentation of CreateTables class and Database.java | 20 |  |
| Explain how you linked customers and addresses | 5 |  |
| DatabaseMySQLImpl | 25 |  |
| Test database main program | 20 |  |
| Total | 100 |  |

**Explain how you linked customers and addresses here. Assume multiple customers can have the same address, but each customer only has one address. (5 points)**