Database Management Systems
Final Lab Exam

Instructions:

This exam consists of one project for a total of 100 points. Follow the directions below:

- You are allowed to use all and any online resources during the test. Don't get lost in the weeds. If you, by a slim chance, find any of the methods / functions online, you must report your findings.
- If you use any code-snippets online, add a reference URL in the code as comments.
- Plagiarism and cheating are serious offenses and will result in getting an F on the project
- Code that is shared will result in everyone involved to be penalized. Proving that you were the one who wrote the code is not a defense.
- Getting external help is strictly forbidden.
- Project should be implemented in **JAVA using JDBC**
- Submit the replit link of your project to your Lab Instructor by email
  no later than **April 17th,11:59 PM**
- The time of your submission will be the time we receive your email.
- Make sure the subject of your email submission is "**FirstName Last Name <> Final Lab Project**"

Best of Luck();

Supermarket System (100 points)

You are asked to write a program that simulates a Supermarket system designed for administrative users only. As a project, it is designed to give you some practice on **Databases and SQL** using **JAVA**

When the admin runs the code, the computer first asks the user if he/she has an account. If so, the user must enter their email and password. Otherwise, the user must create an account using a SignUp form (Full Name, Email, and Password).

The Flow of The System:

After Authentication, the program starts by greeting the user and displaying this menu:

1. **Display Statistics**
2. **List Products**
3. **Add New Product**
4. **Remove Product**
5. **Edit Product**
6. **Display Single Product**
7. **Change Currency**
8. **Exit**

- If the user chooses (1), the system should display some statistics to the user: Total Number of Products, Most expensive product, Least expensive product, and the number of products with quantity equal to 0.
- If the user chooses (2), the program should ask the user if he/she wants to list all the products, the most expensive products (Top 5), or the least expensive products (Top 5). In any case, display the products sorted based on the price.
- If the user chooses (3), the user shall be able to add a new product to the Database. The program prompts for product name, quantity and its price.
- If the user chooses (4), the user shall be able to search and remove a specific product from the Database using its ID. A message will be displayed if the product is not found.
- If the user chooses (5), the user shall be able to search for any product by ID and then update its information inside the Database. A message will be displayed if the product is not found.
- If the user chooses (6), the system prompts for the name of the product or its ID and the system will display its information (quantity, price, etc) if found. A message will be displayed if the product is not found. (When the user searches by name, the system should display all occurrences (using "Like"

keyword)

- If the user chooses (7), the user shall be able to change the currency of the products in the Database (One currency for all the products). The system should display the current currency used in the system. Then, the user shall be able to enter the USD/LBP rate of his/her choice and the system will do the conversion for all the products in the DB.
- If the user chooses (8), the program will terminate with a cute message.

After each option, the menu is displayed again. The user can use the system multiple times.

N.B: Use good programming habits. Good Luck *.*