

Final Project Report

I. About

Online Retail Store is a Java application in which users are able to access information about an online retail store, and depending on the type of user they are (a customer, an administrator, or a manager), the user is granted different levels of access to the online store.

Customers are allowed to view stores within their area as well as the products within a certain store. They can place an order for a product at a store within 30 miles.

Managers can view recent Product updates, the five most popular items and customers, update products, and place supply requests for the stores that they manage.

Administrators can do everything managers can, but are not restricted to only the stores they are attached to. Administrators can also update user

II. Task Division

A. Andre

1. View Stores within 30 miles of User
2. View Products within Store
3. Order Products
4. Browse Order List
5. Permissions for Manager and Admin
6. Administrator User Update
7. Refactoring
8. Testing

B. Jasmine

1. Top 5 Products
2. Top 5 Customers
3. Update Products
4. Top 5 Recent Product Updates
5. Put Supply Request
6. Product Menu
7. Permissions for Manager and Admin
8. Testing

III. Source Code: <https://github.com/Alamode89/project>

IV. Challenges

- A. It was our first time having to program a functional product in Java. Since we had no background knowledge, implementing more advanced features proved to be a difficult task. Being virtually first-timers with Java, having to deal with SQL alongside Java compatibility was difficult especially when we wanted to create restrictions on what functionality the different types of users can access.
- B. IP ban, resulting in an increased pressure to finish on time and inability to utilize any and all UCR resources for a couple of days
- C. Poor communication of project requirements
 - 1. Many clarifications came through Piazza and Discord (which is an unorthodox method of communicating with students), with some changing the core functionality of the SQL queries.
 - a) Managers having two different accounts
<https://piazza.com/class/l8chn2w3fpj2ad/post/47>
 - b) Managers only are able to see information for one of the store(s) they manage instead of all the stores they manage.
<https://piazza.com/class/l8chn2w3fpj2ad/post/30>

V. Any Schema or Table Modifications

Added to create_tables.sql

```
CREATE OR REPLACE FUNCTION calculate_distance(lat1
decimal, long1 decimal, lat2 decimal, long2 decimal)
RETURNS decimal AS $dist$
BEGIN RETURN sqrt((lat1 - lat2) * (lat1 - lat2) +
(long1 - long2) * (long1 - long2));
END;
$dist$ LANGUAGE plpgsql;
```

The following functions were added to Retail.java

getProduct() : Handles case where User would input an invalid product by having them choose from a different menu

updateUser() : An admin function where an administrator can update user information

VI. Special Requirements for Compilation

- A. `source ./startPostgreDB.sh`
(Make sure server runs using `pg_ctl status`)
(If not started, run above command again)

- B. `source ./createPostgreDB.sh`
- C. `cd data/*.csv /tmp/$USER$/myDB/data/`
- D. `source ./sql/scripts/create_db.sh`
- E. `source ./java/scripts/compile.sh`