



School of Engineering

Course: EGDF20 Diploma in Electronic and Computer Engineering

Module: EGE311 Database Design & Applications

Project:

Learning Objective:

1. To apply the database design and application knowledge to a typical real-life scenario.

Project Brief

A local food distribution company is seeking your help to digitise their ordering process by their merchandiser at their customers outlets.

The company employs staff in the position of manager, merchandiser, packer, and deliverer.

Manager overlooks the company's operation such as product management which includes procuring and making them available for ordering. Manager also manages all staff as well as customer outlets details.

Merchandiser is responsible for visiting customer's outlet and placing order for the products to be stocked for sales.

Packer is responsible for retrieving unfulfilled orders (based on the first unfulfilled order number) and update order status once order has been packed.

Deliverer is responsible for retrieving undelivered orders (based on the first undelivered order number) and update the order status once order has been delivered to the outlet.

Once delivery has been made, the order is deemed complete. Order status can be retrieved by any staff via order number and only staff with respective roles can make changes to the order and its status.

A summary of the different roles and their functions are listed below:

Manager

1. Add, Retrieve, Update, or Remove individual product (See Appendix A).
2. Add, Retrieve, Update, or Remove individual staff (See Appendix B).
3. Add, Retrieve, Update, or Remove individual outlet (See Appendix B).
4. Update quantity and unit selling price of existing product.
5. See the sales details made by individual merchandiser.
6. See the sales for individual product.
7. See the sales for all/individual product category.
8. See the sales for all/individual outlet.
9. See the sales by region (North, Central, East, West).
10. See the sales order details for individual outlet.
11. See individual sales order fulfilment details by packer and deliverer.

Merchandiser

1. Add, Retrieve, Update, or Remove own order for individual outlets.
2. Check stock level for individual product.
3. Check the fulfilment status for individual outlet.

Packer

1. Retrieve unfulfilled sales order.
2. Retrieve own fulfilled sales order.
3. Endorse sales order with date of fulfilment.

Deliverer

1. Retrieve undelivered order.
2. Retrieve own delivered order.
3. Endorse sales order with date of delivery.

Python Application

1. Interface will be command line based.
2. Only authorised users will be able to access the system.
3. Menu will be displayed based on the employed position of the user.
4. Interaction will be based on the menu item number for example Manager wants to add in a new product (See Appendix C).
5. Stock level should be updated when order is placed or cancelled by merchandiser.

Project Instructions

1. Project Type

This is an individual effort project.

2. Deliverables

- Report
 - Use the report template (in Microsoft Word Document) provided in BrightSpace.
 - The report must be type-written using “Arial”, font size 12 with single line spacing.
 - It should contain the original ER Diagram with relationships, the design rational as well as any assumptions you have made.
 - It should also contain the normalised ER Diagram with explanation (if applicable)
 - It should contain the final tables derived from the optimised ERD above.
- Database
 - Should contain the schema translated from the final ERD.
 - Database must be populated with a sample data provided (See Appendix A).
 - Any other extra functions (such as views, function, or stored procedures) used.
 - A copy of the exported database with views, function, or stored procedures (if used) from MySQL Workbench in the format “YourAdminNumber_project.sql” (without the double quotes).
- Python Code
 - A description of the input functions (and their parameters if applicable) used perform CRUD on the database.
 - A copy of the source code written in Python saved in the format “YourAdminNumber_project.py” (without the double quotes) used in the project.

3. Submission

- All deliverables (.docx, .sql, .py) must be compressed into a zip file with the format “YourAdminNumber_project.zip” (without the double quotes).
- Submission is to be done via BrightSpace.
- Dateline: **By Wednesday of Week 17 (23:59)**

4. Assessment

- This project constitutes 25% of the overall marks for the module.
- The rubrics used to grade the project are as follows

Report	30%
Scripts and Codes	70%

Appendix A: Products Information

Category	Item	Product Code	Price
Diary	Milk	DKRS35501	\$2.30
	Butter	DKRS35502	\$4.50
	Cheese Slices	DKRS35503	\$3.50
	Yogurt	DKRS35504	\$0.95
Bakery	Bread	BVR30221	\$2.70
	Cereal	BVR30222	\$7.00
	Crackers	BVR30223	\$3.10
Canned Goods	Tomato	CVOMS3681	\$1.45
	Mushroom	CVOMS3682	\$1.15
	Baking Bean	CVOMS3683	\$1.35
	Tuna Fish	CVOMS3684	\$1.45
Condiments	Fine Salt	CON2ASR801	\$0.80
	Chicken Stock	CON2ASR802	\$3.15
	Sesame Oil	CON2ASR803	\$4.95
Beverages	Green Tea	BRTE39861	\$5.00
	Orange Cordial	BRTE39862	\$3.90
	Pineapple juice	BRTE39863	\$0.80

Note: This is the base product for you to populate your database. Assessment of your project will perform insert of additional products.

Appendix B: Information Details

The following are examples of typical information used in the operation.

You are allowed to add in or modify the fields with explanation in your report as you deemed fit.

Example of Staff Details:

Berlin Liew, Manager, S7065843E

Peter Goh, Packer, S6556678E

Example of Sales Order Details:

Order By: Margaret Lim

Order Date: 22 Jun 2022

Delivery Customer: Cheers Hougang Central

Delivery Address: 810 Hougang Central, #03-10, Singapore 530810

Delivery Phone: 67589651

Product	Product Code	Unit Price	Quantity	Total
Tomato	CVOMS3681	\$1.45	100	\$145.00
Bread	BVR30221	\$2.70	10	\$27.00
Total				\$172.00

Packed By: Peter Goh

Delivered By: Samson Lim

Delivery Date: 24 Jun 2022

Example of Outlet Details:

Customer Name: Cheers Hougang Central

Outlet Address: 810 Hougang Central, #03-10, Singapore 530810

Outlet Phone: 67589651

Appendix C: Sample Menu Interaction

```
Manager Menu
=====
1. Add Product
2. Update Product
3. Remove Product
4. Retrieve Product
=====
Enter Selection: 1
```

Figure 1

```
Manager Menu: Add Product
=====
Enter Product Category: Dairy
Enter Product Name: Cheese Slices
Enter Product Code: DKRS35503
Enter Unit Price: 3.50
```

Figure 2

```
Manager Menu: Add Product Status
=====
Product: Dairy Cheese Slices (DKRS35503) $3.50 Added
Enter Q to Go back to Main Menu: Q
```

Figure 3

== = END OF PAPER == =