

Project Milestone 2 - Database Implementation

- **Type:** Group work (maximum 4-5 students - same students as milestone 1)
- **Worth:** 15%
- **Due:** December 15, 2020 @ 23:59
- **Penalty:** Late submissions lose 10% per day to a maximum of 3 days. Nothing is accepted after 3 days and a grade of 0% will be given
- **Submission:** Submit a single `.pdf` file called `Project-2-ID1-ID2-ID3-ID4-ID5.pdf`. One team member submits only.

Requirements

1. SQL

- Provide the script for creating all the tables present in your physical ERD.
- Write an SQL statement to display all orders and order details of all customers, include the quantity and price paid for every item in the order and the total price paid for each order.
- Write an SQL query to display the frequency distribution of how many orders were placed by how many customers. Name your columns as 'number of orders' and 'number of customers'.

Include the above scripts in your **report**.

2. Data

- Populate your database with meaningful data. You need to insert into every table at least 20 records. Include the script in your **report**.
- Make sure you have scripts ready to **Demo** the cycle of how a customer places an order. You should be able to quickly modify values in your script to insert any information given to you during the **Demo**.
 - Create a new account/customer.
 - Insert new products/items with the number of inventory available for each product and who supplied the product/item.
 - Select payment method. Before placing an order a customer selects a method of payment. Thus, insert the details of the method of payment chosen.
 - Place an order. Insertion into order and order_detail tables. An order can have multiple items and a customer can buy several from each item. Make sure you are keeping track of the price paid per item and total price.
 - Insert information about when the order or an order item/s were shipped and to which address.
 - If you have cart and cart_detail implemented, the items in the cart should be moved to order and order_detail tables when a customer pays or places the order and the cart emptied subsequently.

3. Normalization

- Prove that your order, order_detail, customer, and product/item tables are in 3NF. If not, Normalize to 3NF. Note: your tables may have different names, but they should reflect the same data.

Include the proof in the **report**.

4. Indexes

- Identify at least 2 queries that will be run often and create indexes for them. These could be search results, management reports, etc.

Justify your choices in the **report**.

5. Database Users, Roles, and Permissions

- Create the below two roles:
 - Registered Customer
 - Administrator
- It is up to you to define what permissions each role will have. Justify your decisions in the **report**.
- Ensure that each role only has the minimum number of permissions they require to function properly.
- Create users and assign the roles to them.

You should be able to **Demo** the privileges given to the users through roles.

6. Views

- Create two views for the two different roles at the company. Ensure that each role can only access information from tables that make sense. Justify your decisions in the **report**.

7. Triggers

- Write a trigger that updates your inventory after an order has been placed.
- Write a trigger that checks if the item quantities a customer wishes to buy are available in the inventory before the order is placed. An order is placed when you are trying to insert into your order and order_detail tables.

Report Requirements

In addition to the scripts and required justification stated above, your report should include:

- The names and ID-s of all people in the team.
- The conceptual and physical **ERD**-s of your database
 - Include the link to your LucidChart, **and**
 - Include the images of the conceptual and physical **ERD**-s.
- A **neat** and **organized** layout. Title page, section headings, good spacing, etc.

Note: All team members should be aware of and ready to answer questions on any part of the milestone during the **Demo**. **Demo**-s will take place on 17,18, and 21 December. Choose your slot [here](#).

Rubric

⚡ Ensure that you consult the rubric constantly while working and before you submit ⚡

Late Penalty	1 Day 2 Day 3 Day
	-1.5 points -3 points -4.5 points
Submission Penalty	Did not meet submission criteria
	-1 points
Report	1 points
Q1	2 points
Q2	2 points (1for Demo)
Q3	2 points
Q4	2 points
Q5	2 points (1 for Demo)
Q6	2 points
Q7	2 points