ICT 1411 Database Systems II
Project Assignment

Deadline	: 20th August 2023	
Viva Dates	: 4th Week of August 2023	
Weightage	: 20% of the module marks (Viva 75% | Report 25%)	
Penalties	: Plagiarism	10 Marks
	Late Submission	5 Marks

**The penalties will be deducted from the earned marks.

Case Study

The CZ online clothing store is in need of developing a database system to manage their customer details, orders, stocks and supplies and delivery information. Their main goal is to ensure a smooth and satisfying shopping experience for customers. The following details are provided regarding the activities of their requirements.

Clothing Items:

- The database should include a table to store different clothing categories such as t-shirts, shirts, dresses, sportswear, etc.
- Clothing item includes name, category, material/s, color/s, size/s and brand/s.

Customer Orders:

- When a customer places an order, their details (name, contact information, shipping address) are recorded in the database.
- The ordered items, including their specific details like size, color, and material, are associated with the order.
- Stock availability is checked to ensure the ordered items are in sufficient quantity.
- If the items are available, the customer is informed about the order confirmation and estimated delivery date.
- The order has a status (e.g., processing/ delivered/ cancelled), payment status (e.g. full payment/ Advance payment) and order date in the database.

Stock Management:

- The database should maintain information about the available stock of each clothing item, including its size, color, material and quantity.
- When an order is confirmed, the stock quantities are adjusted accordingly, deducting the ordered items from the available stock.
- Clothing items are supplied by the suppliers associated with the company.

Suppliers:

- The database should store details of each supplier, including their name, contact information, and the clothing items they supply.

Delivery Information:

- The database should track delivery information, including the delivery status (Cancelled/ delivered) and the actual delivery date **for an order.**
- Once an order is delivered, the delivery status is updated in the database.
- The customer is informed about the delivery date and any relevant tracking information.

Income Management:

- The database should include functionality to track income details for each order.
- The payment information is recorded, and the income associated with the order is updated accordingly.

Additional Functionalities:

- Employee/Staff: The database can include employee details, such as their name, role, and contact information, to manage staff members involved in order processing and customer support.
- Discounts/Promotions: The database can store information about any ongoing discounts or promotions, for the clothing items including discount percentage, duration, status (active/ expired/ disable) etc.

A relational database management system needs to be implemented based on the client requirements of CZ online clothing company mentioned above.

1. **Design and implementation of the database.**
    1.1. Provide an analysis of entities, attributes and relationships with cardinalities of the given scenario and draw an ER diagram by including cardinality constraints.

Note: Clearly define the assumptions you may use in the analysis if any.

1.2. Translate the ER diagram into relational schemas by showing the relation with **each through primary keys and foreign keys.**
1.3. Design a relational database system according to the ER diagram you have created (Use MySQL **DDL** statements. Primary keys and foreign key/s are compulsory in implementation).

*Note: You may use any other constraints that are required for the tables according to your assumptions. Provide **clear and visible full-screen captures** including the statements.*

2. **Use of querying tools.**

Perform following MySQL queries using the tables that have created in task 1.2. Provide evidence for MySQL queries and results.

2.1. Retrieve the details of a customer's order, including the clothing items ordered, their sizes, and the delivery status.
2.2. Delete a specific customer's order along with all the associated order details, such as the clothing items and delivery information.
2.3. Update the customer's order status to "Cancelled" if they decide to cancel the order before delivery.
2.4. Create a stored procedure to find the customer details and the order details who purchased any product from a given category (Input category from the keyboard).
2.5. Create a view to find the supplier details, product and the stock details as a summary.
2.6. Create a trigger that automatically updates the stock quantity of clothing items according to the order payment status.
2.7. Create two roles as ‘database admin’ and ‘stock keeper’ for the database. Create users under ‘database admin’ and ‘stock keeper’. Grant following privileges to users under each role.

- Database admin - Grant full access to all tables, allowing users assigned to this role to access and modify any table within the database.

- Stock keeper - Grant CRUD (Create, Read, Update, Delete) operations only for the stocks, ensuring that users in this role can only perform actions related to managing stock data.

You need to provide evidence that the users have access only to the operations they have been granted privileges for, and the database system effectively prevents them from performing any actions beyond their authorized privileges.

*Note: Provide **clear and visible full-screen captures** including the statement.*

Assignment – Grading Rubric

Description	Maximum marks	Given Marks	Feedback
Design and implementation of the database			
1.1 Identify entities, attributes and relationships of the given scenario and draw an ER diagram by including cardinality constraints.	10		
1.2 Translate the ER diagram into relational schemas by showing the relation with each through primary keys and foreign keys.	10		
1.3 Design a relational database system according to the ER diagram you have created (Use MySQL DDL statements.	10		
Use of querying tools.			
2.1. Retrieve the details of a customer's order, including the clothing items ordered, their sizes, and the delivery status	10		
2.2. Delete a specific customer's order along with all the associated order details, such as the clothing items and delivery information.	10		
2.3. Update the customer's order status to "Cancelled" if they decide to cancel the order before delivery.	05		
2.4. Create a stored procedure to find the customer details and the order details who purchased any product from a given category (Input category from the keyboard)	10		

2.5. Create a view to find the supplier details, product and the total quantity supplied in a particular duration.	10		
2.6. Create a trigger that automatically updates the stock quantity of clothing items according to the order payment status.	10		
2.7. Create roles and users and grant the privileges.	10		
3.1. Documentation (Cover page, Formatting, References)	05		
Total Marks	**100**		