**Lab 2**

**Q1. Design an ERD/LDM for the above entities.**

To begin with, you'd first need to gather the entities involved. Let’s assume you’re working with a Customer Classification system (though the entities are not explicitly mentioned, we’ll work with a typical scenario).

For example, let's use:

**Customer**, **Customer Classification**, **Order**, **Product**

, **Payment**

In an Entity-Relationship Diagram (ERD), we’ll define relationships between these entities:

* **Customer** can have many **Orders**.
* **Order** contains many **Products**.
* **Order** is linked to **Payment**.
* **Customer** has a **Customer Classification**.

The relationships might look something like this:

* One-to-many relationship between Customer and Order (a customer can place multiple orders).
* Many-to-many relationship between Order and Product (an order can contain multiple products, and a product can appear in multiple orders).
* One-to-one relationship between Customer and Customer Classification (each customer is classified uniquely).

**Q2. Define the physical tables in the table format given as sample for Customer Classification with the data type, size and explanation of each field. This is to teach the importance of documentation at each level. In the industry it is very important that there is enough documentation provided so that it becomes easy to learn and maintain it.**

We can now define the table for Customer Classification, which could have the following fields:

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Size** | **Explanation** |
| **ClassificationID** | INT | 4 | Primary Key. Unique identifier for each customer classification. |
| **ClassificationName** | VARCHAR | 100 | Name of the classification (e.g., Regular, Premium, VIP). |
| **Description** | TEXT | - | A description of the classification type. |
| **CreatedDate** | DATETIME | - | The date and time the classification was created. |
| **ModifiedDate** | DATETIME | - | The date and time when the classification details were last updated. |

**Q3. Create Schema and tables SQL’s, also create the DDL scripts for table creation.**

Once we have the structure, we can create the schema and tables using SQL.

**Schema Creation (assuming the schema is "CustomerDB"):**

CREATE SCHEMA CustomerDB;

**Table Creation for Customer Classification:**

CREATE TABLE CustomerDB.CustomerClassification (

ClassificationID INT PRIMARY KEY,

ClassificationName VARCHAR(100),

Description TEXT,

CreatedDate DATETIME,

ModifiedDate DATETIME

);

**4. DML Operations on table created - SELECT, UPDATE and DELETE.**

Once the table is created, you'll need to perform DML (Data Manipulation Language) operations. Let’s cover a few examples:

**SELECT: Retrieve all customer classifications.**

SELECT \* FROM CustomerDB.CustomerClassification;

**UPDATE: Update the description of a classification.**

UPDATE CustomerDB.CustomerClassification

SET Description = 'Premium customers with more benefits.'

WHERE ClassificationID = 1;

**DELETE: Delete a specific customer classification.**

DELETE FROM CustomerDB.CustomerClassification

WHERE ClassificationID = 1;