**ASSIGNMENT : COURIER MANAGEMENT SYSTEM**

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**DAY 1**

**Task1 Database Design**

Design a SQL schema for a Courier Management System with tables for Customers, Couriers, Orders, and Parcels. Define the relationships between these tables using appropriate foreign keys.

Requirements:

• Define the Database Schema

• Create SQL tables for entities such as **User, Courier, Employee, Location, Payment**

• Define relationships between these tables **(one-to-many, many-to-many, etc.).**

• **Populate Sample Data** • Insert sample data into the tables to simulate real-world scenarios.

mysql> CREATE DATABASE CourierManagement;

Query OK, 1 row affected (0.02 sec)

mysql> USE CourierManagement;

Database changed

mysql> CREATE TABLE User (

-> UserID INT PRIMARY KEY AUTO\_INCREMENT,

-> Name VARCHAR(255) NOT NULL,

-> Email VARCHAR(255) UNIQUE NOT NULL,

-> Password VARCHAR(255) NOT NULL,

-> ContactNumber VARCHAR(20) NOT NULL,

-> Address TEXT NOT NULL

-> );

Query OK, 0 rows affected (0.05 sec)

mysql> desc User;

+---------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+---------------+--------------+------+-----+---------+----------------+

| UserID | int | NO | PRI | NULL | auto\_increment |

| Name | varchar(255) | NO | | NULL | |

| Email | varchar(255) | NO | UNI | NULL | |

| Password | varchar(255) | NO | | NULL | |

| ContactNumber | varchar(20) | NO | | NULL | |

| Address | text | NO | | NULL | |

+---------------+--------------+------+-----+---------+----------------+

6 rows in set (0.01 sec)

mysql> CREATE TABLE Courier (

-> CourierID INT PRIMARY KEY AUTO\_INCREMENT,

-> SenderID INT NOT NULL,

-> ReceiverID INT NOT NULL,

-> Weight DECIMAL(5, 2) NOT NULL,

-> Status VARCHAR(50) NOT NULL,

-> TrackingNumber VARCHAR(20) UNIQUE NOT NULL,

-> DeliveryDate DATE NOT NULL,

-> FOREIGN KEY (SenderID) REFERENCES User(UserID) ON DELETE CASCADE,

-> FOREIGN KEY (ReceiverID) REFERENCES User(UserID) ON DELETE CASCADE

-> );

Query OK, 0 rows affected (0.07 sec)

mysql> desc Courier;

+----------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+----------------+--------------+------+-----+---------+----------------+

| CourierID | int | NO | PRI | NULL | auto\_increment |

| SenderID | int | NO | MUL | NULL | |

| ReceiverID | int | NO | MUL | NULL | |

| Weight | decimal(5,2) | NO | | NULL | |

| Status | varchar(50) | NO | | NULL | |

| TrackingNumber | varchar(20) | NO | UNI | NULL | |

| DeliveryDate | date | NO | | NULL | |

+----------------+--------------+------+-----+---------+----------------+

7 rows in set (0.00 sec)

mysql> CREATE TABLE CourierServices (

-> ServiceID INT PRIMARY KEY AUTO\_INCREMENT,

-> ServiceName VARCHAR(100) NOT NULL,

-> Cost DECIMAL(8, 2) NOT NULL

-> );

Query OK, 0 rows affected (0.03 sec)

mysql> desc CourierServices;

+-------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+--------------+------+-----+---------+----------------+

| ServiceID | int | NO | PRI | NULL | auto\_increment |

| ServiceName | varchar(100) | NO | | NULL | |

| Cost | decimal(8,2) | NO | | NULL | |

+-------------+--------------+------+-----+---------+----------------+

3 rows in set (0.00 sec)

mysql> CREATE TABLE Employee (

-> EmployeeID INT PRIMARY KEY AUTO\_INCREMENT,

-> Name VARCHAR(255) NOT NULL,

-> Email VARCHAR(255) UNIQUE NOT NULL,

-> ContactNumber VARCHAR(20) NOT NULL,

-> Role VARCHAR(50) NOT NULL,

-> Salary DECIMAL(10, 2) NOT NULL

-> );

Query OK, 0 rows affected (0.04 sec)

mysql> desc Employee;

+---------------+---------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+----------------+

| EmployeeID | int | NO | PRI | NULL | auto\_increment |

| Name | varchar(255) | NO | | NULL | |

| Email | varchar(255) | NO | UNI | NULL | |

| ContactNumber | varchar(20) | NO | | NULL | |

| Role | varchar(50) | NO | | NULL | |

| Salary | decimal(10,2) | NO | | NULL | |

+---------------+---------------+------+-----+---------+----------------+

6 rows in set (0.00 sec)

mysql> CREATE TABLE Location (

-> LocationID INT PRIMARY KEY AUTO\_INCREMENT,

-> LocationName VARCHAR(100) NOT NULL,

-> Address TEXT NOT NULL

-> );

Query OK, 0 rows affected (0.03 sec)

mysql> desc Location;

+--------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+--------------+--------------+------+-----+---------+----------------+

| LocationID | int | NO | PRI | NULL | auto\_increment |

| LocationName | varchar(100) | NO | | NULL | |

| Address | text | NO | | NULL | |

+--------------+--------------+------+-----+---------+----------------+

3 rows in set (0.00 sec)

mysql> CREATE TABLE Payment (

-> PaymentID INT PRIMARY KEY AUTO\_INCREMENT,

-> CourierID INT NOT NULL,

-> LocationID INT NOT NULL,

-> Amount DECIMAL(10, 2) NOT NULL,

-> PaymentDate DATE NOT NULL,

-> FOREIGN KEY (CourierID) REFERENCES Courier(CourierID) ON DELETE CASCADE,

-> FOREIGN KEY (LocationID) REFERENCES Location(LocationID) ON DELETE CASCADE

-> );

Query OK, 0 rows affected (0.07 sec)

mysql> desc Payment;

+-------------+---------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+---------------+------+-----+---------+----------------+

| PaymentID | int | NO | PRI | NULL | auto\_increment |

| CourierID | int | NO | MUL | NULL | |

| LocationID | int | NO | MUL | NULL | |

| Amount | decimal(10,2) | NO | | NULL | |

| PaymentDate | date | NO | | NULL | |

+-------------+---------------+------+-----+---------+----------------+

5 rows in set (0.00 sec)

mysql> INSERT INTO User (UserID, Name, Email, Password, ContactNumber, Address) VALUES

-> (1, 'Raj', 'raj@gmail.com', 'raj123', '9876543210', 'Delhi'),

-> (2, 'Ani', 'ani@gmail.com', 'ani789', '8765432109', 'Mumbai'),

-> (3, 'Sam', 'sam@gmail.com', 'sam456', '7654321098', 'Kolkata'),

-> (4, 'Kiran', 'kiran@gmail.com', 'kiran321', '6543210987', 'Chennai'),

-> (5, 'Meera', 'meera@gmail.com', 'meera111', '5432109876', 'Hyderabad'),

-> (6, 'Vikram', 'vikram@gmail.com', 'vikram999', '4321098765', 'Pune'),

-> (7, 'Sita', 'sita@gmail.com', 'sita555', '3210987654', 'Bangalore');

Query OK, 7 rows affected (0.01 sec)

Records: 7 Duplicates: 0 Warnings: 0

mysql> Select \* from User;

+--------+--------+------------------+-----------+---------------+-----------+

| UserID | Name | Email | Password | ContactNumber | Address |

+--------+--------+------------------+-----------+---------------+-----------+

| 1 | Raj | raj@gmail.com | raj123 | 9876543210 | Delhi |

| 2 | Ani | ani@gmail.com | ani789 | 8765432109 | Mumbai |

| 3 | Sam | sam@gmail.com | sam456 | 7654321098 | Kolkata |

| 4 | Kiran | kiran@gmail.com | kiran321 | 6543210987 | Chennai |

| 5 | Meera | meera@gmail.com | meera111 | 5432109876 | Hyderabad |

| 6 | Vikram | vikram@gmail.com | vikram999 | 4321098765 | Pune |

| 7 | Sita | sita@gmail.com | sita555 | 3210987654 | Bangalore |

+--------+--------+------------------+-----------+---------------+-----------+

7 rows in set (0.00 sec)

mysql> INSERT INTO Courier (CourierID, SenderID, ReceiverID, Weight, Status, TrackingNumber, DeliveryDate) VALUES

-> (101, 1, 2, 3.20, 'Shipped', 'TRK987654', '2025-03-30'),

-> (102, 3, 5, 2.50, 'Delivered', 'TRK876543', '2025-03-28'),

-> (103, 4, 7, 5.00, 'Pending', 'TRK765432', '2025-04-01'),

-> (104, 6, 1, 4.20, 'Shipped', 'TRK654321', '2025-03-29'),

-> (105, 2, 4, 3.75, 'In Transit', 'TRK543210', '2025-03-31'),

-> (106, 7, 3, 6.50, 'Delivered', 'TRK432109', '2025-03-27'),

-> (107, 5, 6, 1.80, 'Pending', 'TRK321098', '2025-04-02');

Query OK, 7 rows affected (0.01 sec)

Records: 7 Duplicates: 0 Warnings: 0

mysql> Select \* from Courier;

+-----------+----------+------------+--------+------------+----------------+--------------+

| CourierID | SenderID | ReceiverID | Weight | Status | TrackingNumber | DeliveryDate |

+-----------+----------+------------+--------+------------+----------------+--------------+

| 101 | 1 | 2 | 3.20 | Shipped | TRK987654 | 2025-03-30 |

| 102 | 3 | 5 | 2.50 | Delivered | TRK876543 | 2025-03-28 |

| 103 | 4 | 7 | 5.00 | Pending | TRK765432 | 2025-04-01 |

| 104 | 6 | 1 | 4.20 | Shipped | TRK654321 | 2025-03-29 |

| 105 | 2 | 4 | 3.75 | In Transit | TRK543210 | 2025-03-31 |

| 106 | 7 | 3 | 6.50 | Delivered | TRK432109 | 2025-03-27 |

| 107 | 5 | 6 | 1.80 | Pending | TRK321098 | 2025-04-02 |

+-----------+----------+------------+--------+------------+----------------+--------------+

7 rows in set (0.00 sec)

mysql> INSERT INTO CourierServices (ServiceID, ServiceName, Cost) VALUES

-> (201, 'Standard', 5.99),

-> (202, 'Express', 12.99);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> Select \* from CourierServices;

+-----------+-------------+-------+

| ServiceID | ServiceName | Cost |

+-----------+-------------+-------+

| 201 | Standard | 5.99 |

| 202 | Express | 12.99 |

+-----------+-------------+-------+

2 rows in set (0.00 sec)

mysql> INSERT INTO Employee (EmployeeID, Name, Email, ContactNumber, Role, Salary) VALUES

-> (301, 'Amit', 'amit@gmail.com', '7654321098', 'Agent', 28000.00),

-> (302, 'Neha', 'neha@gmail.com', '6543210987', 'Manager', 45000.00),

-> (303, 'Suresh', 'suresh@gmail.com', '5432109876', 'Driver', 25000.00);

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> Select \* from Employee;

+------------+--------+------------------+---------------+---------+----------+

| EmployeeID | Name | Email | ContactNumber | Role | Salary |

+------------+--------+------------------+---------------+---------+----------+

| 301 | Amit | amit@gmail.com | 7654321098 | Agent | 28000.00 |

| 302 | Neha | neha@gmail.com | 6543210987 | Manager | 45000.00 |

| 303 | Suresh | suresh@gmail.com | 5432109876 | Driver | 25000.00 |

+------------+--------+------------------+---------------+---------+----------+

3 rows in set (0.00 sec)

mysql> INSERT INTO Location (LocationID, LocationName, Address) VALUES

-> (401, 'WH B', 'Chennai'),

-> (402, 'WH C', 'Mumbai'),

-> (403, 'WH D', 'Hyderabad');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> Select \* from Location;

+------------+--------------+-----------+

| LocationID | LocationName | Address |

+------------+--------------+-----------+

| 401 | WH B | Chennai |

| 402 | WH C | Mumbai |

| 403 | WH D | Hyderabad |

+------------+--------------+-----------+

3 rows in set (0.00 sec)

mysql> INSERT INTO Payment (PaymentID, CourierID, LocationID, Amount, PaymentDate) VALUES

-> (501, 101, 401, 5.99, '2025-03-25'),

-> (502, 102, 402, 12.99, '2025-03-26'),

-> (503, 103, 403, 5.99, '2025-03-27'),

-> (504, 104, 401, 12.99, '2025-03-28'),

-> (505, 105, 402, 5.99, '2025-03-29'),

-> (506, 106, 403, 12.99, '2025-03-30'),

-> (507, 107, 401, 5.99, '2025-03-31');

Query OK, 7 rows affected (0.01 sec)

Records: 7 Duplicates: 0 Warnings: 0

mysql> Select \* from Payment;

+-----------+-----------+------------+--------+-------------+

| PaymentID | CourierID | LocationID | Amount | PaymentDate |

+-----------+-----------+------------+--------+-------------+

| 501 | 101 | 401 | 5.99 | 2025-03-25 |

| 502 | 102 | 402 | 12.99 | 2025-03-26 |

| 503 | 103 | 403 | 5.99 | 2025-03-27 |

| 504 | 104 | 401 | 12.99 | 2025-03-28 |

| 505 | 105 | 402 | 5.99 | 2025-03-29 |

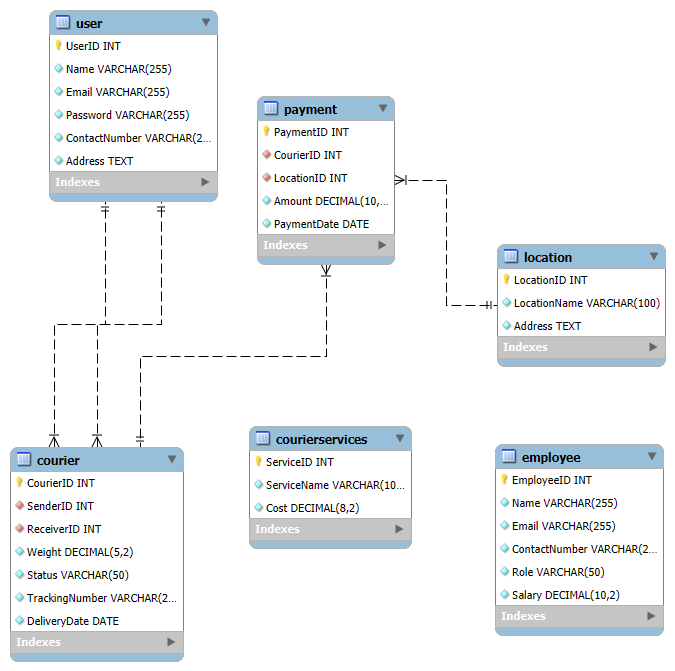
| 506 | 106 | 403 | 12.99 | 2025-03-30 |

| 507 | 107 | 401 | 5.99 | 2025-03-31 |

+-----------+-----------+------------+--------+-------------+

7 rows in set (0.00 sec)

**ER DIAGRAM :**

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