**ASSIGNMENT : COURIER MANAGEMENT SYSTEM**

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**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 (0.01 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 (0.09 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,

-> SenderName VARCHAR(255) NOT NULL,

-> SenderAddress TEXT NOT NULL,

-> ReceiverName VARCHAR(255) NOT NULL,

-> ReceiverAddress TEXT NOT NULL,

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

-> Status VARCHAR(50) NOT NULL,

-> TrackingNumber VARCHAR(20) UNIQUE NOT NULL,

-> DeliveryDate DATE NOT NULL

-> );

Query OK, 0 rows affected (0.05 sec)

mysql> desc Courier;

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

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

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

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

| SenderName | varchar(255) | NO | | NULL | |

| SenderAddress | text | NO | | NULL | |

| ReceiverName | varchar(255) | NO | | NULL | |

| ReceiverAddress | text | NO | | NULL | |

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

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

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

| DeliveryDate | date | NO | | NULL | |

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

9 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 (0.02 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 (0.02 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 (0.08 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@example.com', 'raj123', '9876543210', 'Delhi'),

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

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> Select \* from User;

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

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

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

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

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

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

2 rows in set (0.00 sec)

mysql> INSERT INTO Courier (CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate) VALUES

-> (1, 'Raj', 'Delhi', 'Ram', 'Bangalore', 3.20, 'Shipped', 'TRK987654', '2025-03-30'),

-> (2, 'Ani', 'Pune', 'Priya', 'Bangalore', 3.25, 'Shipped', 'TRK587416', '2025-03-20');

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> Select \* from Courier;

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

| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress |Weight | Status | TrackingNumber | DeliveryDate |

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

| 1 | Raj | Delhi | Ram | Bangalore | 3.20 | Shipped | TRK987654 | 2025-03-30 |

| 2 | Ani | Pune | Priya | Bangalore | 3.25 | Shipped | TRK587416 | 2025-03-20 |

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

2 rows in set (0.00 sec)

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

-> (1, 'Standard', 100),

-> (2, 'Express', 200);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> Select \* from CourierServices;

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

| ServiceID | ServiceName | Cost |

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

| 1 | Standard | 100.00 |

| 2 | Express | 200.00 |

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

2 rows in set (0.00 sec)

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

-> (1, 'Amit', 'amit@example.com', '7654321098', 'Agent', 28000.00);

Query OK, 1 row affected (0.01 sec)

mysql> Select \* from Employee;

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

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

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

| 1 | Amit | amit@example.com | 7654321098 | Agent | 28000.00 |

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

1 row in set (0.00 sec)

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

-> (1, 'West Nagar', 'Chennai');

Query OK, 1 row affected (0.01 sec)

mysql> Select \* from Location;

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

| LocationID | LocationName | Address |

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

| 1 | West Nagar | Chennai |

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

1 row in set (0.00 sec)

mysql> ^C

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

-> (1, 1, 1, 500, '2025-03-25');

Query OK, 1 row affected (0.01 sec)

mysql> Select \* From Payment;

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

| PaymentID | CourierID | LocationID | Amount | PaymentDate |

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

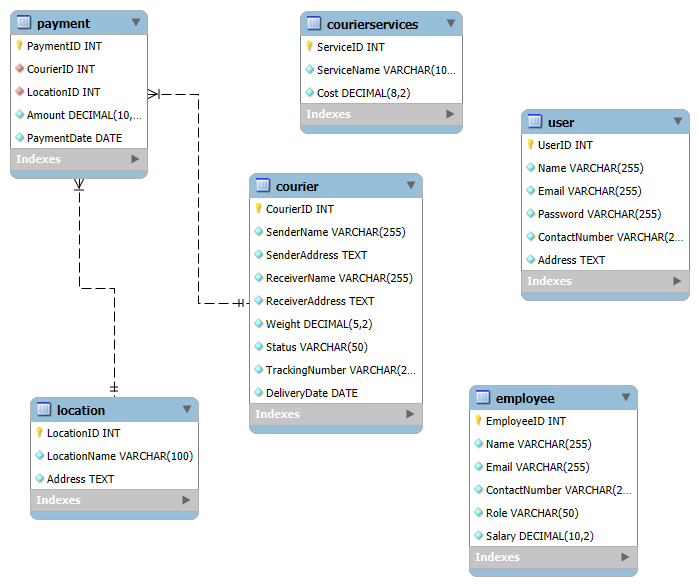
| 1 | 1 | 1 | 500.00 | 2025-03-25 |

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

1 row in set (0.00 sec)

mysql>

**ER DIAGRAM :**

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