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.

TASK 1:

-- **User Table**

```
CREATE TABLE Users (

    UserID INT PRIMARY KEY AUTO_INCREMENT,

    Name VARCHAR(255),

    Email VARCHAR(255) UNIQUE,

    Password VARCHAR(255),

    ContactNumber VARCHAR(20),

    Address TEXT

);
```

-- **Courier Table**

```
CREATE TABLE Couriers (

    CourierID INT PRIMARY KEY AUTO_INCREMENT,

    SenderName VARCHAR(255),

    SenderAddress TEXT,

    ReceiverName VARCHAR(255),

    ReceiverAddress TEXT,

    Weight DECIMAL(5, 2),

    Status VARCHAR(50),

    TrackingNumber VARCHAR(20) UNIQUE,

    DeliveryDate DATE

);
```

-- **Employee Table**

```
CREATE TABLE Employees (

    EmployeeID INT PRIMARY KEY AUTO_INCREMENT,

    Name VARCHAR(255),

    Email VARCHAR(255) UNIQUE,

    ContactNumber VARCHAR(20),

    Role VARCHAR(50),
```

```
    Salary DECIMAL(10, 2)

);
```

-- Location Table

```
CREATE TABLE Locations (

    LocationID INT PRIMARY KEY AUTO_INCREMENT,

    LocationName VARCHAR(100),

    Address TEXT

);
```

-- Payment Table

```
CREATE TABLE Payments (

    PaymentID INT PRIMARY KEY AUTO_INCREMENT,

    CourierID INT,

    LocationID INT,

    Amount DECIMAL(10, 2),

    PaymentDate DATE,

    FOREIGN KEY (CourierID) REFERENCES Couriers(CourierID),

    FOREIGN KEY (LocationID) REFERENCES Locations(LocationID)

);
```

Task 2: Select,Where

Solve the following queries in the Schema that you have created above

1. List all customers:

```
ERROR 1146 (42S02): Table 'cms.user' doesn't exist
mysql> select * from users;
+--------+------------------+----------------------+-------------+---------------+----------------+
| UserID | Name             | Email                | Password    | ContactNumber | Address        |
+--------+------------------+----------------------+-------------+---------------+----------------+
|      1 | John Doe         | john@example.com     | password123 | 123-456-7890  | 123 Main St    |
|      2 | Jane Smith       | jane@example.com     | password456 | 987-654-3210  | 456 Elm St     |
|      3 | Emily Brown      | emily@example.com    | password789 | 111-222-3333  | 789 Oak St     |
|      4 | Michael Johnson  | michael@example.com  | passwordABC | 444-555-6666  | 456 Maple St   |
|      5 | Sophia Wilson    | sophia@example.com   | passwordDEF | 777-888-9999  | 101 Pine St    |
|      6 | Oliver Taylor    | oliver@example.com   | passwordGHI | 123-456-7890  | 321 Cedar St   |
|      7 | Emma Davis       | emma@example.com     | passwordJKL | 333-444-5555  | 222 Walnut St  |
|      8 | William Martinez | william@example.com  | passwordMNO | 666-777-8888  | 555 Chestnut St|
|      9 | Isabella Anderson| isabella@example.com | passwordPQR | 999-000-1111  | 888 Oak St     |
|     10 | Sophie Thompson  | sophie@example.com   | passwordSTU | 222-333-4444  | 777 Maple St   |
+--------+------------------+----------------------+-------------+---------------+----------------+
```

2. List all orders for a specific customer:

```
mysql> select * from  couriers where sendername= 'sender A';
+-----------+------------+---------------+--------------+---------------+--------+-----------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status    | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+---------------+--------+-----------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
+-----------+------------+---------------+--------------+---------------+--------+-----------+----------------+--------------+
1 row in set (0.00 sec)
```

3. List all couriers:

```
mysql> select * from couriers;
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St |   2.20 | Delivered  | TRACK456       | 2024-04-10   |
|         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered  | TRACKLMN       | 2024-04-09   |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St |   1.90 | Delivered  | TRACKUVW       | 2024-04-08   |
|         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
10 rows in set (0.00 sec)
```

4. List all packages for a specific order

```
mysql> select * from couriers where sendername = 'sender d';
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
1 row in set (0.00 sec)
```

5. List all deliveries for a specific courier:

```
mysql> select * from couriers where courierid=5;
+-----------+------------+---------------+--------------+----------------+--------+-----------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status    | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+-----------+----------------+--------------+
|         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered | TRACKLMN       | 2024-04-09   |
+-----------+------------+---------------+--------------+----------------+--------+-----------+----------------+--------------+
1 row in set (0.00 sec)
```

6. List all undelivered packages:

```
mysql> select * from couriers where status <> 'delivered';
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
7 rows in set (0.00 sec)
```

7. List all packages that are scheduled for delivery today:

```
ERROR 1054 (42S22): Unknown column 'currentdate' in 'where clause'
mysql> SELECT * FROM couriers WHERE DeliveryDate = CURDATE();
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
1 row in set (0.00 sec)
```

8. List all packages with a specific status:

```
ERROR 1146 (42S02): Table 'cms.courier' doesn't exist
mysql> select * from couriers where status= 'in transit';
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
```

9. Calculate the total number of packages for each courier.

```
mysql> SELECT
    ->     CourierID,
    ->     COUNT(*) AS TotalPackages
    -> FROM
    ->     Couriers
    -> GROUP BY
    ->     CourierID;
+-----------+---------------+
| CourierID | TotalPackages |
+-----------+---------------+
|         1 |             1 |
|         2 |             1 |
|         3 |             1 |
|         4 |             1 |
|         5 |             1 |
|         6 |             1 |
|         7 |             1 |
|         8 |             1 |
|         9 |             1 |
|        10 |             1 |
+-----------+---------------+
```

10. Find the average delivery time for each courier

```
mysql> Select p.courierId, avg(datediff(c.deliveryDate,p.paymentDate)) as avgTime from payments p inner join couriers c on c.courierId =p.courierId grou
p by courierId;
+----------+---------+
| courierId | avgTime |
+----------+---------+
|         1 |  0.0000 |
|         2 |  0.0000 |
|         3 |  0.0000 |
|         4 |  0.0000 |
|         5 |  0.0000 |
|         6 |  6.0000 |
|         7 |  6.0000 |
|         8 |  2.0000 |
|         9 | 11.0000 |
|        10 | 13.0000 |
+----------+---------+
```

11. List all packages with a specific weight range:

```
mysql> select * from couriers where weight between 2.0 AND 3.0;
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St |   2.20 | Delivered  | TRACK456       | 2024-04-10   |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
3 rows in set (0.00 sec)
```

12. Retrieve employees whose names contain 'John'

```
mysql> select * from employees where name like '%John';
Empty set (0.00 sec)
```

13. Retrieve all courier records with payments greater than $50.

```
mysql> SELECT couriers.*
    -> FROM couriers
    -> JOIN payments ON couriers.courierid = payments.courierid
    -> WHERE payments.amount > 50.00;
Empty set (0.00 sec)
```

Task 3: GroupBy, Aggregate Functions, Having, Order By, where

14. Find the total number of couriers handled by each employee.

```
mysql> SELECT e.employeeid, COUNT(c.Courierid) AS Totalcouriershandled
    -> FROM employees e
    -> LEFT JOIN couriers c ON e.employeeid = c.courierid
    -> GROUP BY e.employeeid;
+------------+----------------------+
| employeeid | Totalcouriershandled |
+------------+----------------------+
|          1 |                    1 |
|          2 |                    1 |
|          3 |                    1 |
|          4 |                    1 |
|          5 |                    1 |
|          6 |                    1 |
|          7 |                    1 |
|          8 |                    1 |
|          9 |                    1 |
|         10 |                    1 |
+------------+----------------------+
```

15. Calculate the total revenue generated by each location

```
mysql> select locationid, sum(amount) as totalrevenue from payments group by
  locationid;
+------------+--------------+
| locationid | totalrevenue |
+------------+--------------+
|          1 |        10.00 |
|          2 |        20.00 |
|          3 |        30.00 |
|          4 |        15.00 |
|          5 |        10.00 |
|          6 |         5.00 |
|          7 |        25.00 |
|          8 |        12.00 |
|          9 |        18.00 |
|         10 |         8.00 |
+------------+--------------+
```

16. Find the total number of couriers delivered to each location

```
mysql> select LocationId,count(CourierId) from payments group by LocationId;
+------------+------------------+
| LocationId | count(CourierId) |
+------------+------------------+
|          1 |                1 |
|          2 |                1 |
|          3 |                1 |
|          4 |                1 |
|          5 |                1 |
|          6 |                1 |
|          7 |                1 |
|          8 |                1 |
|          9 |                1 |
|         10 |                1 |
+------------+------------------+
```

17. Find the courier with the highest average delivery time:

```
mysql> select p.courierid, avg(datediff(c.deliverydate, p.paymentdate)) as a
vgdeliverytime from payments p
    -> inner join couriers c on c.courierid = p.courierid group by courierid
 order by
    -> avgdeliverytime desc limit 1;
+-----------+----------------+
| courierid | avgdeliverytime |
+-----------+----------------+
|        10 |         13.0000 |
+-----------+----------------+
1 row in set (0.01 sec)
```

18. Find Locations with Total Payments Less Than a Certain Amount

```
mysql> select locationid, sum(amount) as Totalrevenue from payments group by
 locationid having totalrevenue < 25;\
+------------+--------------+
| locationid | Totalrevenue |
+------------+--------------+
|          1 |        10.00 |
|          2 |        20.00 |
|          4 |        15.00 |
|          5 |        10.00 |
|          6 |         5.00 |
|          8 |        12.00 |
|          9 |        18.00 |
|         10 |         8.00 |
+------------+--------------+
```

19. Calculate Total Payments per Location

```
mysql> select locationid, sum(amount) as totalpayments from payments group b
y locationid;
+------------+---------------+
| locationid | totalpayments |
+------------+---------------+
|          1 |         10.00 |
|          2 |         20.00 |
|          3 |         30.00 |
|          4 |         15.00 |
|          5 |         10.00 |
|          6 |          5.00 |
|          7 |         25.00 |
|          8 |         12.00 |
|          9 |         18.00 |
|         10 |          8.00 |
+------------+---------------+
```

20. Retrieve couriers who have received payments totaling more than $1000 in a specific location

(LocationID = X):

```
mysql> select courierid from payments where locationid=2 group by courierid
having sum(amount) > 10;
+-----------+
| courierid |
+-----------+
|         2 |
+-----------+
```

21. Retrieve couriers who have received payments totaling more than $1000 after a certain date

(PaymentDate > 'YYYY-MM-DD'):

```
mysql> select courierid from payment where paymentdate> '2024-04-08' group b
y courierid having sum(amount) >25;
ERROR 1146 (42S02): Table 'cms.payment' doesn't exist
mysql> select courierid from payments where paymentdate> '2024-04-08' group
by courierid having sum(amount) >25;
+-----------+
| courierid |
+-----------+
|         3 |
+-----------+
```

22. Retrieve locations where the total amount received is more than $5000 before a certain date

(PaymentDate > 'YYYY-MM-DD')

```
mysql> select locationid from payments where paymentdate> '2024-04-08' group
 by locationid having sum(amount) >5000;
Empty set (0.00 sec)
```

Task 4: Inner Join,Full Outer Join, Cross Join, Left Outer Join,Right Outer Join

23. Retrieve Payments with Courier Information

```
mysql> SELECT payments.*, couriers.*
    -> FROM payments
    -> JOIN couriers ON payments.courierid = couriers.courierid;
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate | CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
|         1 |         1 |          1 |  10.00 | 2024-04-12  |         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St | 3.50   | In Transit | TRACK123       | 2024-04-12   |
|         2 |         2 |          2 |  20.00 | 2024-04-10  |         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St | 2.20   | Delivered  | TRACK456       | 2024-04-10   |
|         3 |         3 |          3 |  30.00 | 2024-04-15  |         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St | 4.00   | Pending    | TRACK789       | 2024-04-15   |
|         4 |         4 |          4 |  15.00 | 2024-04-11  |         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St | 1.80   | In Transit | TRACKXYZ1      | 2024-04-11   |
|         5 |         5 |          5 |  10.00 | 2024-04-09  |         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St | 3.70   | Delivered  | TRACKLMN       | 2024-04-09   |
|         6 |         6 |          6 |   5.00 | 2024-04-08  |         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St | 2.50   | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 |         7 |          7 |  25.00 | 2024-04-07  |         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St | 5.20   | In Transit | TRACKRST       | 2024-04-13   |
|         8 |         8 |          8 |  12.00 | 2024-04-06  |         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St | 1.90   | Delivered  | TRACKUVW       | 2024-04-08   |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St | 3.30   | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St | 2.10   | In Transit | TRACK1234      | 2024-04-17   |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
10 rows in set (0.01 sec)
```

24. Retrieve Payments with Location Information

```
mysql> select payments.*, locations.* from payments join locations on paymen
ts.locationid = locations.locationid;
+-----------+-----------+------------+--------+-------------+------------+--------------------+-----------------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate | LocationID | LocationName       | Address               |
+-----------+-----------+------------+--------+-------------+------------+--------------------+-----------------------+
|         1 |         1 |          1 |  10.00 | 2024-04-12  |          1 | Warehouse A        | 789 Warehouse Ave     |
|         2 |         2 |          2 |  20.00 | 2024-04-10  |          2 | Warehouse B        | 101 Warehouse St      |
|         3 |         3 |          3 |  30.00 | 2024-04-15  |          3 | Warehouse C        | 555 Warehouse St      |
|         4 |         4 |          4 |  15.00 | 2024-04-11  |          4 | Warehouse D        | 777 Warehouse Ave     |
|         5 |         5 |          5 |  10.00 | 2024-04-09  |          5 | Office Headquarters | 123 Office St        |
|         6 |         6 |          6 |   5.00 | 2024-04-08  |          6 | Branch Office 1    | 456 Branch St         |
|         7 |         7 |          7 |  25.00 | 2024-04-07  |          7 | Branch Office 2    | 789 Branch St         |
|         8 |         8 |          8 |  12.00 | 2024-04-06  |          8 | Branch Office 3    | 101 Branch St         |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |          9 | Retail Store       | 555 Retail St         |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |         10 | Distribution Center | 888 Distribution Ave |
+-----------+-----------+------------+--------+-------------+------------+--------------------+-----------------------+
```

25. Retrieve Payments with Courier and Location Information

```
mysql> select payments.*, couriers.*, locations.* from payments join couriers on payments.courierid=couriers.courierid join locations on payments.locati
onid = locations.locationid;
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+------------+--------------------+-----------------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate | CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate | LocationID | LocationName       | Address               |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+------------+--------------------+-----------------------+
|         1 |         1 |          1 |  10.00 | 2024-04-12  |         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St | 3.50   | In Transit | TRACK123       | 2024-04-12   |          1 | Warehouse A        | 789 Warehouse Ave     |
|         2 |         2 |          2 |  20.00 | 2024-04-10  |         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St | 2.20   | Delivered  | TRACK456       | 2024-04-10   |          2 | Warehouse B        | 101 Warehouse St      |
|         3 |         3 |          3 |  30.00 | 2024-04-15  |         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St | 4.00   | Pending    | TRACK789       | 2024-04-15   |          3 | Warehouse C        | 555 Warehouse St      |
|         4 |         4 |          4 |  15.00 | 2024-04-11  |         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St | 1.80   | In Transit | TRACKXYZ1      | 2024-04-11   |          4 | Warehouse D        | 777 Warehouse Ave     |
|         5 |         5 |          5 |  10.00 | 2024-04-09  |         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St | 3.70   | Delivered  | TRACKLMN       | 2024-04-09   |          5 | Office Headquarters | 123 Office St        |
|         6 |         6 |          6 |   5.00 | 2024-04-08  |         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St | 2.50   | Pending    | TRACKOPQ       | 2024-04-14   |          6 | Branch Office 1    | 456 Branch St         |
|         7 |         7 |          7 |  25.00 | 2024-04-07  |         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St | 5.20   | In Transit | TRACKRST       | 2024-04-13   |          7 | Branch Office 2    | 789 Branch St         |
|         8 |         8 |          8 |  12.00 | 2024-04-06  |         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St | 1.90   | Delivered  | TRACKUVW       | 2024-04-08   |          8 | Branch Office 3    | 101 Branch St         |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St | 3.30   | Pending    | TRACKXYZ2      | 2024-04-16   |          9 | Retail Store       | 555 Retail St         |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St | 2.10   | In Transit | TRACK1234      | 2024-04-17   |         10 | Distribution Center | 888 Distribution Ave |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+------------+--------------------+-----------------------+
10 rows in set (0.01 sec)
```

26. List all payments with courier details

```
mysql> select * from payments p left join couriers c on p.courierid=c.courie
rid;
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate | CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
|         1 |         1 |          1 |  10.00 | 2024-04-12  |         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St | 3.50   | In Transit | TRACK123       | 2024-04-12   |
|         2 |         2 |          2 |  20.00 | 2024-04-10  |         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St | 2.20   | Delivered  | TRACK456       | 2024-04-10   |
|         3 |         3 |          3 |  30.00 | 2024-04-15  |         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St | 4.00   | Pending    | TRACK789       | 2024-04-15   |
|         4 |         4 |          4 |  15.00 | 2024-04-11  |         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St | 1.80   | In Transit | TRACKXYZ1      | 2024-04-11   |
|         5 |         5 |          5 |  10.00 | 2024-04-09  |         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St | 3.70   | Delivered  | TRACKLMN       | 2024-04-09   |
|         6 |         6 |          6 |   5.00 | 2024-04-08  |         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St | 2.50   | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 |         7 |          7 |  25.00 | 2024-04-07  |         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St | 5.20   | In Transit | TRACKRST       | 2024-04-13   |
|         8 |         8 |          8 |  12.00 | 2024-04-06  |         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St | 1.90   | Delivered  | TRACKUVW       | 2024-04-08   |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St | 3.30   | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St | 2.10   | In Transit | TRACK1234      | 2024-04-17   |
+-----------+-----------+------------+--------+-------------+-----------+------------+---------------+--------------+---------------+--------+------------+----------------+--------------+
```

27. Total payments received for each courier

```
mysql> select courierid, sum(amount) as totalpayments from payments group by
 courierid;
+-----------+---------------+
| courierid | totalpayments |
+-----------+---------------+
|         1 |         10.00 |
|         2 |         20.00 |
|         3 |         30.00 |
|         4 |         15.00 |
|         5 |         10.00 |
|         6 |          5.00 |
|         7 |         25.00 |
|         8 |         12.00 |
|         9 |         18.00 |
|        10 |          8.00 |
+-----------+---------------+
```

28. List payments made on a specific date

```
mysql> select * from payments where paymentdate='2024-04-06';
+-----------+-----------+------------+--------+-------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate |
+-----------+-----------+------------+--------+-------------+
|         8 |         8 |          8 |  12.00 | 2024-04-06  |
+-----------+-----------+------------+--------+-------------+
```

29. Get Courier Information for Each Payment

```
mysql> select * from couriers c where c.courierid in (select courierid from
payments);
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St |   2.20 | Delivered  | TRACK456       | 2024-04-10   |
|         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered  | TRACKLMN       | 2024-04-09   |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St |   1.90 | Delivered  | TRACKUVW       | 2024-04-08   |
|         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
```

30. Get Payment Details with Location

```
mysql> select payments.*, locations.* from payments left join locations on p
ayments.locationid = locations.locationid;
+-----------+-----------+------------+--------+-------------+------------+-------------------+---------------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate | LocationID | LocationName      | Address             |
+-----------+-----------+------------+--------+-------------+------------+-------------------+---------------------+
|         1 |         1 |          1 |  10.00 | 2024-04-12  |          1 | Warehouse A       | 789 Warehouse Ave   |
|         2 |         2 |          2 |  20.00 | 2024-04-10  |          2 | Warehouse B       | 101 Warehouse St    |
|         3 |         3 |          3 |  30.00 | 2024-04-15  |          3 | Warehouse C       | 555 Warehouse St    |
|         4 |         4 |          4 |  15.00 | 2024-04-11  |          4 | Warehouse D       | 777 Warehouse Ave   |
|         5 |         5 |          5 |  10.00 | 2024-04-09  |          5 | Office Headquarters | 123 Office St      |
|         6 |         6 |          6 |   5.00 | 2024-04-08  |          6 | Branch Office 1   | 456 Branch St       |
|         7 |         7 |          7 |  25.00 | 2024-04-07  |          7 | Branch Office 2   | 789 Branch St       |
|         8 |         8 |          8 |  12.00 | 2024-04-06  |          8 | Branch Office 3   | 101 Branch St       |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |          9 | Retail Store      | 555 Retail St       |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |         10 | Distribution Center | 888 Distribution Ave |
+-----------+-----------+------------+--------+-------------+------------+-------------------+---------------------+
```

31. Calculating Total Payments for Each Courier

```
mysql> select courierid, sum(amount) as totalpayments from payments group by
 courierid;
+-----------+---------------+
| courierid | totalpayments |
+-----------+---------------+
|         1 |         10.00 |
|         2 |         20.00 |
|         3 |         30.00 |
|         4 |         15.00 |
|         5 |         10.00 |
|         6 |          5.00 |
|         7 |         25.00 |
|         8 |         12.00 |
|         9 |         18.00 |
|        10 |          8.00 |
+-----------+---------------+
```

32. List Payments Within a Date Range

```
mysql> select * from payments where paymentdate between '2024-03-31' and '20
24-04-6';
+-----------+-----------+------------+--------+-------------+
| PaymentID | CourierID | LocationID | Amount | PaymentDate |
+-----------+-----------+------------+--------+-------------+
|         8 |         8 |          8 |  12.00 | 2024-04-06  |
|         9 |         9 |          9 |  18.00 | 2024-04-05  |
|        10 |        10 |         10 |   8.00 | 2024-04-04  |
+-----------+-----------+------------+--------+-------------+
```

33. Retrieve a list of all users and their corresponding courier records, including cases where there are

no matches on either side

```
    -> u.name = c.senderName; ^C
mysql> select u.*,c.courierId,c.status,c.TrackingNumber,c.DeliveryDate from users u left join couriers c on
    -> u.name = c.senderName;
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+--------+----------------+--------------+
| UserID | Name             | Email                | Password    | ContactNumber | Address         | courierId | status | TrackingNumber | DeliveryDate |
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+--------+----------------+--------------+
|      1 | John Doe         | john@example.com     | password123 | 123-456-7890 | 123 Main St     |      NULL | NULL   | NULL           | NULL         |
|      2 | Jane Smith       | jane@example.com     | password456 | 987-654-3210 | 456 Elm St      |      NULL | NULL   | NULL           | NULL         |
|      3 | Emily Brown      | emily@example.com    | password789 | 111-222-3333 | 789 Oak St      |      NULL | NULL   | NULL           | NULL         |
|      4 | Michael Johnson  | michael@example.com  | passwordABC | 444-555-6666 | 456 Maple St    |      NULL | NULL   | NULL           | NULL         |
|      5 | Sophia Wilson    | sophia@example.com   | passwordDEF | 777-888-9999 | 101 Pine St     |      NULL | NULL   | NULL           | NULL         |
|      6 | Oliver Taylor    | oliver@example.com   | passwordGHI | 123-456-7890 | 321 Cedar St    |      NULL | NULL   | NULL           | NULL         |
|      7 | Emma Davis       | emma@example.com     | passwordJKL | 333-444-5555 | 222 Walnut St   |      NULL | NULL   | NULL           | NULL         |
|      8 | William Martinez | william@example.com  | passwordMNO | 666-777-8888 | 555 Chestnut St |      NULL | NULL   | NULL           | NULL         |
|      9 | Isabella Anderson| isabella@example.com | passwordPQR | 999-000-1111 | 888 Oak St      |      NULL | NULL   | NULL           | NULL         |
|     10 | Sophie Thompson  | sophie@example.com   | passwordSTU | 222-333-4444 | 777 Maple St    |      NULL | NULL   | NULL           | NULL         |
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+--------+----------------+--------------+
```

35. Retrieve a list of all employees and their corresponding payments, including cases where there are

no matches on either side

```
mysql> select * from users cross join courierservices;
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+------------------+-------+
| UserID | Name             | Email                | Password    | ContactNumber | Address         | ServiceID | ServiceName      | Cost  |
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+------------------+-------+
|     10 | Sophie Thompson  | sophie@example.com   | passwordSTU | 222-333-4444 | 777 Maple St    |         1 | Standard Delivery | 10.00 |
|      9 | Isabella Anderson| isabella@example.com | passwordPQR | 999-000-1111 | 888 Oak St      |         1 | Standard Delivery | 10.00 |
|      8 | William Martinez | william@example.com  | passwordMNO | 666-777-8888 | 555 Chestnut St |         1 | Standard Delivery | 10.00 |
|      7 | Emma Davis       | emma@example.com     | passwordJKL | 333-444-5555 | 222 Walnut St   |         1 | Standard Delivery | 10.00 |
|      6 | Oliver Taylor    | oliver@example.com   | passwordGHI | 123-456-7890 | 321 Cedar St    |         1 | Standard Delivery | 10.00 |
|      5 | Sophia Wilson    | sophia@example.com   | passwordDEF | 777-888-9999 | 101 Pine St     |         1 | Standard Delivery | 10.00 |
|      4 | Michael Johnson  | michael@example.com  | passwordABC | 444-555-6666 | 456 Maple St    |         1 | Standard Delivery | 10.00 |
|      3 | Emily Brown      | emily@example.com    | password789 | 111-222-3333 | 789 Oak St      |         1 | Standard Delivery | 10.00 |
|      2 | Jane Smith       | jane@example.com     | password456 | 987-654-3210 | 456 Elm St      |         1 | Standard Delivery | 10.00 |
|      1 | John Doe         | john@example.com     | password123 | 123-456-7890 | 123 Main St     |         1 | Standard Delivery | 10.00 |
|     10 | Sophie Thompson  | sophie@example.com   | passwordSTU | 222-333-4444 | 777 Maple St    |         2 | Express Delivery  | 20.00 |
|      9 | Isabella Anderson| isabella@example.com | passwordPQR | 999-000-1111 | 888 Oak St      |         2 | Express Delivery  | 20.00 |
|      8 | William Martinez | william@example.com  | passwordMNO | 666-777-8888 | 555 Chestnut St |         2 | Express Delivery  | 20.00 |
|      7 | Emma Davis       | emma@example.com     | passwordJKL | 333-444-5555 | 222 Walnut St   |         2 | Express Delivery  | 20.00 |
|      6 | Oliver Taylor    | oliver@example.com   | passwordGHI | 123-456-7890 | 321 Cedar St    |         2 | Express Delivery  | 20.00 |
|      5 | Sophia Wilson    | sophia@example.com   | passwordDEF | 777-888-9999 | 101 Pine St     |         2 | Express Delivery  | 20.00 |
|      4 | Michael Johnson  | michael@example.com  | passwordABC | 444-555-6666 | 456 Maple St    |         2 | Express Delivery  | 20.00 |
|      3 | Emily Brown      | emily@example.com    | password789 | 111-222-3333 | 789 Oak St      |         2 | Express Delivery  | 20.00 |
|      2 | Jane Smith       | jane@example.com     | password456 | 987-654-3210 | 456 Elm St      |         2 | Express Delivery  | 20.00 |
|      1 | John Doe         | john@example.com     | password123 | 123-456-7890 | 123 Main St     |         2 | Express Delivery  | 20.00 |
|     10 | Sophie Thompson  | sophie@example.com   | passwordSTU | 222-333-4444 | 777 Maple St    |         3 | Same Day Delivery | 30.00 |
|      9 | Isabella Anderson| isabella@example.com | passwordPQR | 999-000-1111 | 888 Oak St      |         3 | Same Day Delivery | 30.00 |
|      8 | William Martinez | william@example.com  | passwordMNO | 666-777-8888 | 555 Chestnut St |         3 | Same Day Delivery | 30.00 |
|      7 | Emma Davis       | emma@example.com     | passwordJKL | 333-444-5555 | 222 Walnut St   |         3 | Same Day Delivery | 30.00 |
|      6 | Oliver Taylor    | oliver@example.com   | passwordGHI | 123-456-7890 | 321 Cedar St    |         3 | Same Day Delivery | 30.00 |
|      5 | Sophia Wilson    | sophia@example.com   | passwordDEF | 777-888-9999 | 101 Pine St     |         3 | Same Day Delivery | 30.00 |
+--------+------------------+----------------------+-------------+--------------+-----------------+-----------+------------------+-------+
```

36. List all users and all courier services, showing all possible combinations.

```
mysql> select * from employees cross join locations;
+------------+---------------+----------------------+--------------+----------------------+----------+------------+----------------+--------------------+
| EmployeeID | Name          | Email                | ContactNumber | Role                | Salary   | LocationID | LocationName   | Address            |
+------------+---------------+----------------------+--------------+----------------------+----------+------------+----------------+--------------------+
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          1 | Warehouse A    | 789 Warehouse Ave  |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          2 | Warehouse B    | 101 Warehouse St   |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          3 | Warehouse C    | 555 Warehouse St   |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          4 | Warehouse D    | 777 Warehouse Ave  |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          4 | Warehouse D    | 777 Warehouse Ave  |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          4 | Warehouse D    | 777 Warehouse Ave  |
```

37. List all employees and all locations, showing all possible combinations:

```
ERROR 1146 (42S02): Table 'cms.location' doesn't exist
mysql> Select * from employees cross join locations;
+------------+---------------+----------------------+--------------+----------------------+----------+------------+--------------------+--------------------+
| EmployeeID | Name          | Email                | ContactNumber | Role                | Salary   | LocationID | LocationName       | Address            |
+------------+---------------+----------------------+--------------+----------------------+----------+------------+--------------------+--------------------+
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          1 | Warehouse A        | 789 Warehouse Ave  |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          2 | Warehouse B        | 101 Warehouse St   |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          3 | Warehouse C        | 555 Warehouse St   |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          7 | Grace Martinez| grace@example.com    | 987-654-3210 | Driver               | 32000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          6 | Frank Wilson  | frank@example.com    | 321-654-9876 | Warehouse Manager    | 55000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          5 | Ella Taylor   | ella@example.com     | 123-456-7890 | Customer Service     | 35000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          4 | David Lee     | david@example.com    | 999-000-1111 | Accountant           | 45000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          3 | Charlie Brown | charlie@example.com  | 777-888-9999 | Dispatcher           | 40000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          2 | Bob Smith     | bob@example.com      | 444-555-6666 | Courier              | 30000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|          1 | Alice Johnson | alice@example.com    | 111-222-3333 | Manager              | 50000.00 |          4 | Warehouse D        | 777 Warehouse Ave  |
|         10 | Jack Evans    | jack@example.com     | 777-999-1111 | Security Officer     | 30000.00 |          5 | Office Headquarters| 123 Office St      |
|          9 | Ivy Adams     | ivy@example.com      | 111-333-5555 | Logistics Coordinator| 42000.00 |          5 | Office Headquarters| 123 Office St      |
|          8 | Henry Thomas  | henry@example.com    | 555-777-9999 | Supervisor           | 48000.00 |          5 | Office Headquarters| 123 Office St      |
```

38. Retrieve a list of couriers and their corresponding sender information (if available)

```
mysql> select * from couriers left join users on couriers.sendername=users.name;
+-----------+------------+---------------+--------------+-----------------+--------+-----------+----------------+--------------+--------+------+-------+----------+---------------+---------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status    | TrackingNumber | DeliveryDate | UserID | Name | Email | Password | ContactNumber | Address |
+-----------+------------+---------------+--------------+-----------------+--------+-----------+----------------+--------------+--------+------+-------+----------+---------------+---------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St | 3.50   | In Transit| TRACK123       | 2024-04-12   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St | 2.20   | Delivered | TRACK456       | 2024-04-10   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St | 4.00   | Pending   | TRACK789       | 2024-04-15   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St | 1.80   | In Transit| TRACKXYZ1      | 2024-04-11   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St | 3.70   | Delivered | TRACKLMN       | 2024-04-09   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St | 2.50   | Pending   | TRACKOPQ       | 2024-04-14   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St | 5.20   | In Transit| TRACKRST       | 2024-04-13   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St | 1.90   | Delivered | TRACKUVW       | 2024-04-08   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St | 3.30   | Pending   | TRACKXYZ2      | 2024-04-16   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St | 2.10   | In Transit| TRACK1234      | 2024-04-17   | NULL   | NULL | NULL  | NULL     | NULL          | NULL    |
```

39. Retrieve a list of couriers and their corresponding receiver information (if available):

```
mysql> select * from couriers left join users on couriers.receivername=users
.name;
```

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	UserID	Name	Email	Password	ContactNumber	Address
1	Sender A	123 Sender St	Receiver X	456 Receiver St	3.50	In Transit	TRACK123	2024-04-12	NULL	NULL	NULL	NULL	NULL	NULL
2	Sender B	789 Sender St	Receiver Y	101 Receiver St	2.20	Delivered	TRACK456	2024-04-10	NULL	NULL	NULL	NULL	NULL	NULL
3	Sender C	321 Sender St	Receiver Z	789 Receiver St	4.00	Pending	TRACK789	2024-04-15	NULL	NULL	NULL	NULL	NULL	NULL
4	Sender D	555 Sender St	Receiver W	888 Receiver St	1.80	In Transit	TRACKXYZ1	2024-04-11	NULL	NULL	NULL	NULL	NULL	NULL
5	Sender E	999 Sender St	Receiver V	222 Receiver St	3.70	Delivered	TRACKLMN	2024-04-09	NULL	NULL	NULL	NULL	NULL	NULL
6	Sender F	111 Sender St	Receiver U	333 Receiver St	2.50	Pending	TRACKOPQ	2024-04-14	NULL	NULL	NULL	NULL	NULL	NULL
7	Sender G	777 Sender St	Receiver T	444 Receiver St	5.20	In Transit	TRACKRST	2024-04-13	NULL	NULL	NULL	NULL	NULL	NULL
8	Sender H	888 Sender St	Receiver S	555 Receiver St	1.90	Delivered	TRACKUVW	2024-04-08	NULL	NULL	NULL	NULL	NULL	NULL
9	Sender I	222 Sender St	Receiver R	666 Receiver St	3.30	Pending	TRACKXYZ2	2024-04-16	NULL	NULL	NULL	NULL	NULL	NULL
10	Sender J	444 Sender St	Receiver Q	777 Receiver St	2.10	In Transit	TRACK1234	2024-04-17	NULL	NULL	NULL	NULL	NULL	NULL

42. Retrieve a list of locations and the total payment amount received at each location:

```
mysql> SELECT l.LocationID, l.LocationName, COALESCE(SUM(p.Amount), 0) AS To
talPayments
    -> FROM Locations l
    -> LEFT JOIN Payments p ON l.LocationID = p.LocationID
    -> GROUP BY l.LocationID, l.LocationName;
```

LocationID	LocationName	TotalPayments
1	Warehouse A	10.00
2	Warehouse B	20.00
3	Warehouse C	30.00
4	Warehouse D	15.00
5	Office Headquarters	10.00
6	Branch Office 1	5.00
7	Branch Office 2	25.00
8	Branch Office 3	12.00
9	Retail Store	18.00
10	Distribution Center	8.00

43. Retrieve all couriers sent by the same sender (based on SenderName).

```
mysql> select * from couriers where sendername in (select sendername from co
uriers group by sendername having count(*) > 1);
Empty set (0.01 sec)
```

44. List all employees who share the same role.

```
mysql> select e1.*, e2.* from employees e1, employees e2 where e1.role=e2.ro
le and e1.employeeid <> e2.employeeid;
Empty set (0.01 sec)
```

45. Retrieve all payments made for couriers sent from the same location.

```
mysql> select * from payments p1 inner join payments p2 on p1.locationid=p2.
locationid and p1.paymentid <> p2.paymentid;
Empty set (0.00 sec)
```

46. Retrieve all couriers sent from the same location (based on SenderAddress).

```
mysql> select * from couriers c1 inner join couriers c2 on c1.senderaddress=
c2.senderaddress and c1.courierid <> c2.courierid;
Empty set (0.00 sec)
```

Scope: Inner Queries, Non Equi Joins, Equi joins,Exist,Any,All

49. Find couriers that have a weight greater than the average weight of all couriers

```
mysql> select * from couriers where weight > (select avg(weight) from courie
rs);
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status    | TrackingNumber | DeliveryDate |
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|        1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|        3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|        5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered  | TRACKLMN       | 2024-04-09   |
|        7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|        9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
```

50. Find the names of all employees who have a salary greater than the average salary:

```
mysql> select name from employees where salary > (select avg(salary) from em
ployees);
+---------------+
| name          |
+---------------+
| Alice Johnson |
| David Lee     |
| Frank Wilson  |
| Henry Thomas  |
| Ivy Adams     |
+---------------+
```

51. Find the total cost of all courier services where the cost is less than the maximum cost

```
mysql> select sum(cost) as totalcost from courierservices where cost < (sele
ct max(cost) from courierservices);
+-----------+
| totalcost |
+-----------+
|    180.00 |
+-----------+
```

52. Find all couriers that have been paid for

```
mysql> select * from couriers c1 where weight > all(select weight from couri
ers c2 where c2.sendername='john');
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status    | TrackingNumber | DeliveryDate |
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
|        1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|        2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St |   2.20 | Delivered  | TRACK456       | 2024-04-10   |
|        3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|        4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|        5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered  | TRACKLMN       | 2024-04-09   |
|        6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|        7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|        8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St |   1.90 | Delivered  | TRACKUVW       | 2024-04-08   |
|        9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
|       10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+----------+------------+---------------+--------------+----------------+--------+------------+----------------+--------------+
```

53. Find the locations where the maximum payment amount was made

```
mysql> SELECT LocationID
    -> FROM Payments
    -> WHERE Amount = (SELECT MAX(Amount) FROM Payments);
+------------+
| LocationID |
+------------+
|          3 |
+------------+
```

54. Find all couriers whose weight is greater than the weight of all couriers sent by a specific sender

(e.g., 'SenderName'):

```
mysql> select * from couriers c1 where weight > all (select weight from cour
iers c2 where c2.sendername = 'john');
+-----------+------------+---------------+--------------+-----------------+--------+------------+----------------+--------------+
| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status     | TrackingNumber | DeliveryDate |
+-----------+------------+---------------+--------------+-----------------+--------+------------+----------------+--------------+
|         1 | Sender A   | 123 Sender St | Receiver X   | 456 Receiver St |   3.50 | In Transit | TRACK123       | 2024-04-12   |
|         2 | Sender B   | 789 Sender St | Receiver Y   | 101 Receiver St |   2.20 | Delivered  | TRACK456       | 2024-04-10   |
|         3 | Sender C   | 321 Sender St | Receiver Z   | 789 Receiver St |   4.00 | Pending    | TRACK789       | 2024-04-15   |
|         4 | Sender D   | 555 Sender St | Receiver W   | 888 Receiver St |   1.80 | In Transit | TRACKXYZ1      | 2024-04-11   |
|         5 | Sender E   | 999 Sender St | Receiver V   | 222 Receiver St |   3.70 | Delivered  | TRACKLMN       | 2024-04-09   |
|         6 | Sender F   | 111 Sender St | Receiver U   | 333 Receiver St |   2.50 | Pending    | TRACKOPQ       | 2024-04-14   |
|         7 | Sender G   | 777 Sender St | Receiver T   | 444 Receiver St |   5.20 | In Transit | TRACKRST       | 2024-04-13   |
|         8 | Sender H   | 888 Sender St | Receiver S   | 555 Receiver St |   1.90 | Delivered  | TRACKUVW       | 2024-04-08   |
|         9 | Sender I   | 222 Sender St | Receiver R   | 666 Receiver St |   3.30 | Pending    | TRACKXYZ2      | 2024-04-16   |
|        10 | Sender J   | 444 Sender St | Receiver Q   | 777 Receiver St |   2.10 | In Transit | TRACK1234      | 2024-04-17   |
+-----------+------------+---------------+--------------+-----------------+--------+------------+----------------+--------------+
```