# **ASSIGNMENT 4**

# Task 1: Database Design

# Create Database named CourierManagementSystem

```
mysql> CREATE DATABASE CourierManagementSystem;
Query OK, 1 row affected (0.01 sec)
mysql> show databases;
Database
| couriermanagementsystem
 hmbank
 information_schema
 mysql
 performance_schema
 petpals
 sakila
 sisdb
 subquery
 techshop
 world
12 rows in set (0.00 sec)
mysql> USE CourierManagementSystem;
Database changed
mysql>
```

## **Create Tables:**

- > User
- **Courier**
- **CourierServices**
- ➤ Employee
- **>** Location
- **>** Payment

```
mysql> CREATE TABLE Users (
           UserID INT PRIMARY KEY,
           Name VARCHAR(255),
Email VARCHAR(255) UNIQUE,
           Password VARCHAR(255),
           ContactNumber VARCHAR(20),
    ->
           Address TEXT
Query OK, 0 rows affected (0.10 sec)
mysql> desc Users;
| Field
                                 | Null | Key | Default | Extra |
                 | Type
                                           PRI
  UserID
                   int
                                   NO
                                                 NULL
  Name
                   varchar(255)
                                   YES
                                                  NULL
  Email
                   varchar(255)
                                           UNI
                                                  NULL
                                   YES
                   varchar(255)
                                   YES
                                                 NULL
  Password
  ContactNumber
                   varchar(20)
                                   YES
                                                  NULL
  Address
                   text
                                   YES
                                                 NULL
6 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE Courier (
            CourierID INT PRIMARY KEY,
            SenderName VARCHAR(255),
            SenderAddress TEXT,
ReceiverName VARCHAR(255),
    ->
            ReceiverAddress TEXT,
    ->
            Weight DECIMAL(5, 2),
Status VARCHAR(50),
TrackingNumber VARCHAR(20) UNIQUE,
    ->
    ->
            DeliveryDate DATE
Query OK, 0 rows affected (0.04 sec)
mysql> desc Courier;
| Field
                                     | Null | Key | Default | Extra |
                    Type
  CourierID
                      int
                                       NO
                                                PRI
                                                      NULL
  SenderName
                       varchar(255)
                                       YES
                                                       NULL
  SenderAddress
                      text
                                       YES
                                                       NULL
                                       YES
  ReceiverName
                      varchar(255)
                                                       NULL
  ReceiverAddress
                      text
                                       YES
                                                       NULL
                      decimal(5,2)
                                                       NULL
  Weight
                                       YES
  Status
                       varchar(50)
                                       YES
                                                       NULL
  TrackingNumber
                      varchar(20)
                                       YES
                                               UNI
                                                      NULL
                                       YES
  DeliveryDate
                      date
                                                      NULL
9 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE CourierServices (
           ServiceID INT PRIMARY KEY,
           ServiceName VARCHAR(100),
    ->
           Cost DECIMAL(8, 2)
    -> );
Query OK, 0 rows affected (0.03 sec)
mysql> desc CourierServices;
 Field
              | Type
                             | Null | Key | Default | Extra
 ServiceID
              | int
                               NO
                                      PRI
                                            NULL
 ServiceName | varchar(100)
                               YES
                                            NULL
              | decimal(8,2) | YES
                                            NULL
3 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE Employee (
           EmployeeID INT PRIMARY KEY,
           Name VARCHAR(255),
Email VARCHAR(255) UNIQUE,
           ContactNumber VARCHAR(20),
    ->
           Role VARCHAR(50),
           Salary DECIMAL(10, 2)
    ->
    -> );
Query OK, 0 rows affected (0.03 sec)
mysql> desc Employee;
| Field
                                    Null | Key | Default | Extra
                  Type
 EmployeeID
                   int
                                    NO
                                           PRI
                                                  NULL
 Name
                   varchar(255)
                                    YES
                                                  NULL
  Email
                   varchar(255)
                                    YES
                                           UNI
                                                  NULL
 ContactNumber
                   varchar(20)
                                    YES
                                                  NULL
                  varchar(50)
 Role
                                    YES
                                                  NULL
 Salary
                 | decimal(10,2) |
                                    YES
                                                  NULL
6 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE Location (
          LocationID INT PRIMARY KEY,
          LocationName VARCHAR(100),
          Address TEXT
   -> );
Query OK, 0 rows affected (0.03 sec)
mysql> desc Location;
 Field
                               Null | Key | Default | Extra
               Type
 LocationID
                                       PRI
                 int
                                NO
                                            NULL
                varchar(100)
                                YES
 LocationName
                                             NULL
 Address
                                YES
                                             NULL
               text
3 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE Payment (
-> PaymentID INT PRIMARY KEY,
-> CourierID INT,
-> LocationID INT,
-> Amount DECIMAL(10, 2),
                PaymentDate DATE,
FOREIGN KEY (CourierID) REFERENCES CourierManagementSystem.Courier(CourierID),
FOREIGN KEY (LocationID) REFERENCES CourierManagementSystem.Location(LocationID)
      ->
      ->
-> );
Query OK, 0 rows affected (0.04 sec)
mysql> desc Payment;
| Field
                                              | Null | Key | Default | Extra |
  PaymentID
                        int
  CourierID
                                                                     NULL
                        int
                                                 YES
                                                            MUL
                                                                     NULL
  LocationID
                        int
                                                            MUL
                        decimal(10,2)
   Amount
                                                                     NULL
  PaymentDate
                        date
                                                                     NULL
5 rows in set (0.00 sec)
```

## Insert at least 10 values in each of the table

```
mysql> INSERT INTO Users (UserID, Name, Email, Password, ContactNumber, Address)
-> VALUES
-> (1, 'John Doe', 'john.doe@example.com', 'password123', '1234567890', '123 Main St'),
-> (2, 'Jane Smith', 'jane.smith@example.com', 'securepass', '9876543210', '456 Oak Ave'),
-> (3, 'Bob Johnson', 'bob.johnson@example.com', 'pass123', '5678901234', '789 Pine Rd'),
-> (4, 'Alice Brown', 'alice.brown@example.com', 'mysecretpass', '6789012345', '101 Maple Ln'),
-> (5, 'Charlie Wilson', 'charlie.wilson@example.com', 'letmein', '7890123456', '202 Cedar Blvd'),
-> (6, 'Eva Davis', 'eva.davis@example.com', 'password456', '8901234567', '303 Elm St'),
-> (7, 'David White', 'david.white@example.com', 'davidpass', '9012345678', '404 Birch Dr'),
-> (8, 'Grace Miller', 'grace.miller@example.com', 'gracepass', '0123456789', '505 Pine St'),
-> (9, 'Frank Turner', 'frank turner@example.com', 'frank123', '34567890123', '707 Cedar Blvd');
-> (10, 'Helen Adams', 'helen.adams@example.com', 'helenpass', '4567890123', '707 Cedar Blvd');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
                 -> VALUES
  mysql> select * from Users;
        UserID | Name
                                                                                           | Email
                                                                                                                                                                                                 Password
                                                                                                                                                                                                                                                | ContactNumber | Address
                                     John Doe
Jane Smith
Bob Johnson
Alice Brown
                                                                                                                                                                                                                                                                                                          123 Main St
456 Oak Ave
789 Pine Rd
101 Maple Ln
202 Cedar Blvd
303 Elm St
                                                                                                 john.doe@example.com
jane.smith@example.com
                                                                                                                                                                                                                                                     1234567890
9876543210
                                                                                                                                                                                                   password123
                                                                                                                                                                                                  securepass
pass123
                                                                                               bob.johnson@example.com
alice.brown@example.com
charlie.wilson@example.com
eva.davis@example.com
                                                                                                                                                                                                                                                     5678901234
6789012345
                                                                                                                                                                                                  mysecretpass
letmein
password456
                                     Charlie Wilson
Eva Davis
                                                                                                                                                                                                                                                     7890123456
8901234567
                                                                                              eva.davis@example.com
david.white@example.com
grace.miller@example.com
frank.turner@example.com
helen.adams@example.com
                                                                                                                                                                                                                                                                                                         404 Birch Dr
505 Pine St
606 Oak Ave
707 Cedar Blvd
                                     David White
Grace Miller
                                                                                                                                                                                                   .
davidpass
                                                                                                                                                                                                                                                     9012345678
0123456789
                                                                                                                                                                                                  gracepass
frank123
helenpass
                      9 | Frank Turner
10 | Helen Adams
                                                                                                                                                                                                                                                     3456789012
4567890123
  10 rows in set (0.00 sec)
```

-> (3, '-> (4, '-> (5, '-> (6, '-> (7, '-> (8, '-> (9, '-> (10, ry OK, 10	Bob Sender', '789 Alice Sender', '16 Charlie Sender', '262 Eva Sender', '303 David Sender', '46 Grace Sender', '56 Frank Sender', '66	Maple Ln, CityE', 'Char' 31 Oak Ave, CityG', 'Dav' '202 Cedar Blvd, CityI', Birch Dr, CityK', 'Frani 94 Oak Ave, CityM', 'Grae' 95 Elm St, CityO', 'Frani 96 Pine St, CityO', 'Hel '707 Birch Dr, CityS', 'Jo .01 sec)	lie Receiver', '101 id Receiver', '202   'Eva Receiver', '3 k Receiver', '404 P ce Receiver', '505   k Receiver', '606 B en Receiver', '707	Rd, CityD', 1.8, 'Deliv', Cedar Blvd, CityF', 3.2 Pine St, CityH', 1.5, 'P. 93 Elm St, CityJ', 2.9, ine St, CityL', 2.8, 'De' Cedar Blvd, CityN', 1.2, inch Dr, CityF', 3.5, 'I Cedar Blvd, CityR', 2.2, Elm St, CityT', 1.9, 'De	, 'In Trai ending', 'Delivered livered', 'Deliveren Transit 'Pending	nsit', 'TRK12: 'TRK123004',   d', 'TRK123006', 'TRK123006', ed', 'TRK123006', ', 'TRK123008', 'TRK123008	3003', '2023-01-2' NULL), 5', '2023-01-22') '2023-01-25'), 07', '2023-01-28' ', NULL), ', NULL),	
ls color								
	·	SenderAddress	ReceiverName	+   ReceiverAddress	+   Weight	Status	+   TrackingNumber	DeliveryDate
urierID	SenderName	   SenderAddress      123 Main St, CityA	+   ReceiverName +   Alice Receiver	+	·	Status In Transit	+	++   DeliveryDate   +
urierID	SenderName 	·		+	·	In Transit	+	++
ourierID 1 2	SenderName John Sender Jane Sender	123 Main St, CityA   456 Elm St, CityC   789 Maple Ln, CityE	Alice Receiver	+   456 Oak Ave, CityB   789 Pine Rd, CityD	2.50 1.80	In Transit Delivered	+	2023-01-15
ourierID 1 2 3 4	SenderName John Sender Jane Sender Bob Sender Alice Sender	123 Main St, CityA 456 Elm St, CityC 789 Maple Ln, CityE 101 Oak Ave, CityG	Alice Receiver   Bob Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH	2.50 1.80	In Transit Delivered In Transit Pending	+	2023-01-15     2023-01-18     2023-01-20     NULL
urierID 1 2 3 4	SenderName John Sender Jane Sender Bob Sender Alice Sender	123 Main St, CityA   456 Elm St, CityC   789 Maple Ln, CityE	Alice Receiver   Bob Receiver   Charlie Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH 303 Elm St, CityJ	2.50 1.80 3.20	In Transit Delivered In Transit Pending	+	2023-01-15     2023-01-18     2023-01-20
urierID 1 2 3 4 5	SenderName John Sender Jane Sender Bob Sender Alice Sender	123 Main St, CityA 456 Elm St, CityC 789 Maple Ln, CityE 101 Oak Ave, CityG	Alice Receiver Bob Receiver Charlie Receiver David Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH 303 Elm St, CityJ 404 Pine St, CityJ	2.50   1.80   3.20   1.50   2.00   2.80	In Transit Delivered In Transit Pending Delivered	+	2023-01-15     2023-01-18     2023-01-20     NULL
1 2 3 4 5	SenderName John Sender Jane Sender Bob Sender Alice Sender Charlie Sender Eva Sender	123 Main St, CityA 456 Elm St, CityC 789 Maple Ln, CityE 101 Oak Ave, CityG 202 Cedar Blvd, CityI 303 Birch Dr, CityK 404 Oak Ave, CityM	Alice Receiver Bob Receiver Charlie Receiver David Receiver Eva Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH 303 Elm St, CityJ	2.50   1.80   3.20   1.50   2.00   2.80	In Transit Delivered In Transit Pending Delivered	TRK123001 TRK123002 TRK123003 TRK123004 TRK123005	2023-01-15     2023-01-18     2023-01-20     NULL     2023-01-22
urierID 1 2 3 4 5 6	SenderName John Sender Jane Sender Bob Sender Alice Sender Charlie Sender Eva Sender	123 Main St, CityA 456 Elm St, CityC 789 Maple Ln, CityE 101 Oak Ave, CityG 202 Cedar Blvd, CityI 303 Birch Dr, CityK	Alice Receiver Bob Receiver Charlie Receiver David Receiver Eva Receiver Frank Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH 303 Elm St, CityJ 404 Pine St, CityJ	2.50   1.80   3.20   1.50   2.00   2.80	In Transit Delivered In Transit Pending Delivered Delivered Delivered	TRK123001   TRK123002   TRK123003   TRK123004   TRK123005   TRK123006	2023-01-15     2023-01-18     2023-01-20     NULL     2023-01-22     2023-01-25
urierID 1 2 3 4 5 6 7 8	John Sender Jane Sender Bob Sender Alice Sender Charlie Sender Eva Sender David Sender Grace Sender	123 Main St, CityA 456 Elm St, CityC 789 Maple Ln, CityE 101 Oak Ave, CityG 202 Cedar Blvd, CityI 303 Birch Dr, CityK 404 Oak Ave, CityM	Alice Receiver Bob Receiver Charlie Receiver David Receiver Eva Receiver Frank Receiver Grace Receiver	456 Oak Ave, CityB 789 Pine Rd, CityD 101 Cedar Blvd, CityF 202 Pine St, CityH 303 Elm St, CityJ 404 Pine St, CityL 505 Cedar Blvd, CityN	2.50 1.80 3.20 1.50 2.00 2.80 1.20 3.50	In Transit Delivered In Transit Pending Delivered Delivered Delivered In Transit	TRK123001 TRK123002 TRK123003 TRK123004 TRK123005 TRK123006 TRK123006	2023-01-15   2023-01-18   2023-01-20   NULL   2023-01-22   2023-01-25   2023-01-28

```
mysql> INSERT INTO CourierServices (ServiceID, ServiceName, Cost)
-> VALUES
-> (1, 'Standard Shipping', 10.99),
-> (2, 'Express Shipping', 19.99),
-> (3, 'Overnight Shipping', 29.99),
-> (4, 'International Economy', 39.99),
-> (5, 'International Express', 49.99),
-> (6, 'Same-Day Delivery', 59.99),
-> (7, 'Special Handling', 9.99),
-> (8, 'Fragile Items Service', 14.99),
-> (9, 'Signature Confirmation', 4.99),
-> (10, 'Insurance Service', 7.99);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
          -> VALUES
 mysql> select * from CourierServices;
     ServiceID | ServiceName
                                                                           Cost
                             Standard Shipping
                                                                               10.99
                             Express Shipping
                                                                               19.99
                             Overnight Shipping
                                                                              29.99
                             International Economy
                                                                              39.99
                             International Express
                                                                              49.99
                            Same-Day Delivery
Special Handling
                                                                              59.99
                                                                                9.99
                             Fragile Items Service
                                                                              14.99
                             Signature Confirmation
                     9
                                                                                4.99
                   10
                             Insurance Service
                                                                                7.99
 10 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Employee (EmployeeID, Name, Email, ContactNumber, Role, Salary)
-> VALUES
-> (1, 'John Employee', 'john.employee@example.com', '123-4456-7890', 'Delivery Driver', 40000.00),
-> (2, 'Jane Employee', 'jane.employee@example.com', '987-654-3210', 'Customer Service Representative', 35000.00),
-> (3, 'Bob Employee', 'bob.employee@example.com', '567-890-1234', 'Warehouse Manager', 50000.00),
-> (4, 'Alice Employee', 'alice.employee@example.com', '678-901-2345', 'Logistics Coordinator', 45000.00),
-> (5, 'Charlie Employee', 'charlie.employee@example.com', '789-012-3456', 'IT Specialist', 60000.00),
-> (6, 'Eva Employee', 'eva.employee@example.com', '890-123-4567', 'Operations Manager', 55000.00),
-> (7, 'David Employee', 'david.employee@example.com', '901-234-5678', 'Human Resources Coordinator', 38000.00),
-> (8, 'Grace Employee', 'grace.employee@example.com', '912-345-6789', 'Accountant', 42000.00),
-> (9, 'Frank Employee', 'frank.employee@example.com', '312-345-6789', 'Security Officer', 32000.00),
-> (10, 'Helen Employee', 'helen.employee@example.com', '456-789-0123', 'Marketing Specialist', 48000.00);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
  mvsal> select * from Employee:
      EmployeeID | Name
                                                                                                                                                                                      | ContactNumber | Role
                                                                                                                                                                                                                                                                                                                                      | Salarv
                                                                                              | Email
                                             John Employee
                                                                                                    john.employee@example.com
                                                                                                                                                                                            123-456-7890
                                                                                                                                                                                                                                         Delivery Driver
                                                                                                                                                                                                                                                                                                                                            40000.00
                                           John Employee
Bob Employee
Bob Employee
Alice Employee
Charlie Employee
Eva Employee
David Employee
Grace Employee
Frank Employee
                                                                                                                                                                                                                                         Customer Service Representative
Warehouse Manager
Logistics Coordinator
                                                                                                                                                                                           987-654-3210
567-890-1234
678-901-2345
                                                                                                                                                                                                                                                                                                                                           35000.00
50000.00
45000.00
                                                                                                   jane.employee@example.com
bob.employee@example.com
                                                                                                   alice.employee@example.com
charlie.employee@example.com
eva.employee@example.com
                                                                                                                                                                                           789-012-3456
890-123-4567
                                                                                                                                                                                                                                         IT Specialist
Operations Manager
                                                                                                                                                                                                                                                                                                                                           60000.00
55000.00
                                                                                                   david.employee@example.com
grace.employee@example.com
frank.employee@example.com
                                                                                                                                                                                           901-234-5678
012-345-6789
                                                                                                                                                                                                                                         Human Resources Coordinator
                                                                                                                                                                                                                                                                                                                                            38000.00
42000.00
                                                                                                                                                                                                                                         Accountant
Security Officer
                                                                                                                                                                                             345-678-9012
                                                                                                                                                                                                                                                                                                                                             32000.00
                              10
                                            Helen Employee
                                                                                                   helen.employee@example.com
                                                                                                                                                                                            456-789-0123
                                                                                                                                                                                                                                         Marketing Specialist
                                                                                                                                                                                                                                                                                                                                           48000.00
 10 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Location (LocationID, LocationName, Address)
-> VALUES
-> (1, 'Office A', '123 Main St, CityA'),
-> (2, 'Warehouse B', '456 Oak Ave, CityB'),
-> (3, 'Store C', '789 Pine Rd, CityC'),
-> (4, 'Facility D', '101 Maple Ln, CityD'),
-> (5, 'Hub E', '202 Cedar Blvd, CityE'),
-> (6, 'Distribution Center F', '303 Elm St, CityF'),
-> (7, 'Office G', '404 Birch Dr, CityG'),
-> (8, 'Warehouse H', '505 Pine St, CityH'),
-> (9, 'Store I', '606 Oak Ave, CityI'),
-> (10, 'Facility J', '707 Cedar Blvd, CityJ');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
          -> VALUES
mysql> select * from Location;
    LocationID | LocationName
                                  Office A
                                                                                          123 Main St, CityA
                                                                                         456 Oak Ave, CityB
789 Pine Rd, CityC
                                  Warehouse B
                                  Store C
                                  Facility D
                                                                                         101 Maple Ln, CityD
                                                                                         202 Cedar Blvd, CityE
                                  Hub E
                          6
                                  Distribution Center F
                                                                                         303 Elm St, CityF
                                                                                        404 Birch Dr, CityG
505 Pine St, CityH
606 Oak Ave, CityI
707 Cedar Blvd, CityJ
                                  Office G
                                  Warehouse H
                          9
                                  Store I
                                  Facility J
                       10
10 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Payment (PaymentID, CourierID, LocationID, Amount, PaymentDate)
-> VALUES
-> (1, 1, 5, 15.99, '2023-01-15'),
-> (2, 2, 8, 25.50, '2023-01-18'),
-> (3, 3, 3, 20.75, '2023-01-20'),
-> (4, 4, 10, 18.00, '2023-01-22'),
-> (5, 5, 7, 30.25, '2023-01-25'),
-> (6, 6, 2, 22.99, '2023-01-28'),
-> (7, 7, 6, 15.50, NULL),
-> (8, 8, 9, 28.75, NULL),
-> (9, 9, 4, 19.00, '2023-02-01'),
-> (10, 10, 1, 23.50, '2023-02-05');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
         -> VALUES
 mysql> select * from Payment;
    PaymentID | CourierID | LocationID | Amount | PaymentDate |
                                                                                                 2023-01-15
                                                                                 25.50
                                                                                                 2023-01-18
                                                                                 20.75
                                                                                                 2023-01-20
                     4
5
                                                                     10
7
2
                                                                                 18.00
                                                                                                 2023-01-22
                                             5
                                                                                 30.25
                                                                                                 2023-01-25
                     6
7
                                             6
7
                                                                                 22.99
                                                                                                 2023-01-28
                                                                                 15.50
                                                                                                 NULL
                                                                       9
                     8
                                             8
                                                                                 28.75
                                                                                                 NULL
                                                                                                 2023-02-01
                     9
                                                                                 19.00
                   10
                                           10
                                                                                 23.50
                                                                                                 2023-02-05
 10 rows in set (0.00 sec)
```

# Task 2: Select, Where

# List all couriers

serID	Name	Email	Password	ContactNumber	Address
1	John Doe	john.doe@example.com	password123	1234567890	123 Main St
2	Jane Smith	jane.smith@example.com	securepass	9876543210	456 Oak Ave
3	Bob Johnson	bob.johnson@example.com	pass123	5678901234	789 Pine Rd
4	Alice Brown	alice.brown@example.com	mysecretpass	6789012345	101 Maple Ln
5	Charlie Wilson	charlie.wilson@example.com	letmein	7890123456	202 Cedar Blvd
6	Eva Davis	eva.davis@example.com	password456	8901234567	303 Elm St
7	David White	david.white@example.com	davidpass	9012345678	404 Birch Dr
8	Grace Miller	grace.miller@example.com	gracepass	0123456789	505 Pine St
9	Frank Turner	frank.turner@example.com	frank123	3456789012	606 Oak Ave
10	Helen Adams	helen.adams@example.com	helenpass	4567890123	707 Cedar Blvd

# List all packages for a specific order

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
7	David Sender	404 Oak Ave, CityM	Grace Receiver	505 Cedar Blvd, CityN	1.20	Delivered	TRK123007	2023-01-28
row in set	(0.00 sec)							,

# List all couriers

ourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	John Sender	123 Main St, CityA	Alice Receiver	456 Oak Ave, CityB	2.50	In Transit	TRK123001	2023-01-15
2	Jane Sender	456 Elm St, CityC	Bob Receiver	789 Pine Rd, CityD	1.80	Delivered	TRK123002	2023-01-18
3	Bob Sender	789 Maple Ln, CityE	Charlie Receiver	101 Cedar Blvd, CityF	3.20	In Transit	TRK123003	2023-01-20
4	Alice Sender	101 Oak Ave, CityG	David Receiver	202 Pine St, CityH	1.50	Pending	TRK123004	NULL
5	Charlie Sender	202 Cedar Blvd, CityI	Eva Receiver	303 Elm St, CityJ	2.00	Delivered	TRK123005	2023-01-22
6	Eva Sender	303 Birch Dr. CityK	Frank Receiver	404 Pine St, CityL	2.80	Delivered	TRK123006	2023-01-25
7	David Sender	404 Oak Ave, CityM	Grace Receiver	505 Cedar Blvd, CityN	1.20	Delivered	TRK123007	2023-01-28
8	Grace Sender	505 Elm St, CityÓ	Frank Receiver	606 Birch Dr, CityP	3.50	In Transit	TRK123008	NULL
9	Frank Sender	606 Pine St, CityQ	Helen Receiver	707 Cedar Blvd, CityR	2.20	Pending	TRK123009	NULL
10	Helen Sender	707 Birch Dr. CityS	John Receiver	808 Elm St. CitvT	1.90	Delivered	TRK123010	2023-02-01

# List all packages for a specific order

CourierID	SenderName	   SenderAddress	ReceiverName		Weight		TrackingNumber	
2	Jane Sender	456 Elm St, CityC	Bob Receiver	789 Pine Rd, CityD	1.80	Delivered	TRK123002	2023-01-18

#### List all deliveries for a specific courier

```
mysql> SELECT *
-> FROM Courier
-> WHERE CourierID=10 AND Status = 'Delivered';

| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status | TrackingNumber | DeliveryDate |
| 10 | Helen Sender | 707 Birch Dr, CityS | John Receiver | 808 Elm St, CityT | 1.90 | Delivered | TRK123010 | 2023-02-01 |
1 row in set (0.00 sec)

mysql>
```

#### List all undelivered packages

```
mysql> SELECT *
-> FROM Courier
-> WHERE Status <> 'Delivered';

| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status | TrackingNumber | DeliveryDate |
| 1 | John Sender | 123 Main St, CityA | Alice Receiver | 456 Oak Ave, CityB | 2.50 | In Transit | TRK123001 | 2023-01-15 |
| 3 | Bob Sender | 799 Maple In, CityE | Charlie Receiver | 101 Cedar Blvd, CityF | 3.20 | In Transit | TRK123003 | 2023-01-20 |
| 4 | Alice Sender | 101 Oak Ave, CityG | David Receiver | 202 Pine St, CityH | 1.50 | Pending | TRK123004 | NULL |
| 8 | Grace Sender | 505 Elm St, CityO | Frank Receiver | 606 Birch Dr, CityP | 3.50 | In Transit | TRK123008 | NULL |
| 9 | Frank Sender | 606 Pine St, CityO | Helen Receiver | 707 Cedar Blvd, CityR | 2.20 | Pending | TRK123009 | NULL |
| 5 rows in set (0.00 sec)
```

#### List all packages that are scheduled for delivery today

```
mysql> SELECT *
    -> FROM Courier
    -> WHERE DeliveryDate = CURRENT_DATE;
Empty set (0.00 sec)
mysql>
```

#### List all packages with a specific status

```
mysql> SELECT *
-> FROM Courier
-> WHERE Status ='In Transit';
  CourierID | SenderName | SenderAddress
                                                                                                                                                                    | Weight | Status
                                                                                                                                                                                                            | TrackingNumber |
                                                                                                                                                                                                                                            DeliveryDate |
                                                                                       ReceiverName
                                                                                                                         ReceiverAddress
                                                                                                                                                                          2.50 | In Transit
3.20 | In Transit
3.50 | In Transit
                1 | John Sender
3 | Bob Sender
8 | Grace Sender
                                                | 123 Main St, CityA |
| 789 Maple Ln, CityE |
| 505 Elm St, CityO |
                                                                                         Alice Receiver
Charlie Receiver
Frank Receiver
                                                                                                                           456 Oak Ave, CityB
101 Cedar Blvd, CityF
606 Birch Dr, CityP
                                                                                                                                                                                                             TRK123001
TRK123003
TRK123008
                                                                                                                                                                                                                                            2023-01-15
2023-01-20
NULL
3 rows in set (0.00 sec)
mysql>|
```

## Calculate the total number of packages for each courier

## List all packages with a specific weight range:

		+			·		+	++
CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	John Sender	123 Main St, CityA	Alice Receiver	456 Oak Ave, CityB	2.50	In Transit	TRK123001	2023-01-15
2	Jane Sender	456 Elm St, CityC	Bob Receiver	789 Pine Rd, CityD	1.80	Delivered	TRK123002	2023-01-18
4	Alice Sender	101 Oak Ave, CityG	David Receiver	202 Pine St, CityH	1.50	Pending	TRK123004	NULL
5	Charlie Sender	202 Cedar Blvd, CityI	Eva Receiver	303 Elm St, CityJ	2.00	Delivered	TRK123005	2023-01-22
6	Eva Sender	303 Birch Dr. CityK	Frank Receiver	404 Pine St, CityL	2.80	Delivered	TRK123006	2023-01-25
	David Sender	404 Oak Ave, CityM	Grace Receiver	505 Cedar Blvd, CityN	1.20	Delivered	TRK123007	2023-01-28
9	Frank Sender	606 Pine St, CityQ	Helen Receiver	707 Cedar Blvd, CityR	2.20	Pending	TRK123009	NULL
10	Helen Sender	707 Birch Dr. CityS	John Receiver	808 Elm St. CityT	1.90	Delivered	TRK123010	2023-02-01

## Retrieve employees whose names contain 'John'

```
mysql> SELECT *

-> FROM Employee

-> WHERE Name LIKE '%John%';

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

1 | John Employee | john.employee@example.com | 123-456-7890 | Delivery Driver | 40000.00 |

1 row in set (0.00 sec)

mysql> |
```

## Retrieve all courier records with payments greater than 20.

-> WHERE		urierID=p.CourierID +	+	+   ReceiverAddress	+		TrackingNumber		
2 3 5 6 8	Jane Sender Bob Sender Charlie Sender Eva Sender Grace Sender Helen Sender	456 Elm St, CityC 789 Maple Ln, CityE 202 Cedar Blvd, CityI 303 Birch Dr, CityK 505 Elm St, CityO 707 Birch Dr, CityS	Bob Receiver Charlie Receiver Eva Receiver Frank Receiver Frank Receiver John Receiver	789 Pine Rd, CityD 101 Cedar Blvd, CityF 303 Elm St, CityJ 404 Pine St, CityL 606 Birch Dr, CityP 808 Elm St, CityT	1.80 3.20 2.00 2.80 3.50 1.90	Delivered In Transit Delivered Delivered In Transit Delivered	TRK123005 TRK123006	2023-01-18 2023-01-20 2023-01-22 2023-01-25 NULL 2023-02-01	25.50   20.75   30.25   22.99   28.75   23.50
rows in se	t (0.00 sec)	<b>!</b>	·	<b>!</b>	<b>+</b>			·	+ <b>+</b>

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

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

## Calculate the total revenue generated by each location

```
mysql> SELECT l.LocationID, l.LocationName, SUM(p.Amount) AS TotalRevenue
    -> FROM Location l
    -> JOIN Courier c ON l.LocationID = c.CourierID
    -> JOIN Payment p ON c.CourierID = p.CourierID
-> GROUP BY l.LocationID, l.LocationName;
| LocationID | LocationName
                                          | TotalRevenue |
                 Office A
                                                    15.99
                                                    25.50
20.75
            2
                Warehouse B
            3
                Store C
                 Facility D
                                                    18.00
            5
                Hub E
                                                    30.25
                                                    22.99
            6
7
                Distribution Center F
                Office G
                                                    15.50
                                                    28.75
            8
                Warehouse H
            9
                Store I
                                                    19.00
                Facility J
           10
                                                    23.50
10 rows in set (0.00 sec)
```

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

#### Find Locations with Total Payments Less Than a Certain Amount

```
mysql> SELECT
           l.LocationID,
           l.LocationName,
SUM(p.Amount) AS TotalPayments
    ->
   -> FROM
           Location l
    -> JOIN
           Courier c ON l.LocationID = c.CourierID
    -> JOIN
           Payment p ON c.CourierID = p.CourierID
    -> GROUP BY
    ->
           l.LocationID, l.LocationName
    -> HAVING
           SUM(p.Amount) < 20;
 LocationID | LocationName | TotalPayments |
           1
               Office A
                                        15.99
           4
               Facility D
                                        18.00
           7
                                        15.50
               Office G
           9
               Store I
                                        19.00
4 rows in set (0.00 sec)
```

#### Calculate Total Payments per Location

```
mysql> SELECT
           l.LocationID,
           l.LocationName,
           SUM(p.Amount) AS TotalPayments
    -> FROM
           Location l
           Courier c ON l.LocationID = c.CourierID
    -> JOIN
           Payment p ON c.CourierID = p.CourierID
    ->
    -> GROUP BY
           l.LocationID, l.LocationName;
                                       | TotalPayments |
 LocationID | LocationName
               Office A
                                                 25.50
               Warehouse B
                                                 20.75
18.00
               Store C
               Facility D
           4
               Hub E
                                                 30.25
           6
               Distribution Center F
                                                 22.99
               Office G
                                                 15.50
           8
               Warehouse H
                                                 28.75
               Store I
Facility J
                                                 19.00
                                                 23.50
10 rows in set (0.00 sec)
```

# Retrieve couriers who have received payments totaling more than \$1000 in a specific location

```
mysql> SELECT
   ->
           c.CourierID,
           c.SenderName,
           c.ReceiverName,
    ->
           SUM(p.Amount) AS TotalPayments
    ->
    -> FROM
           Courier c
   ->
   -> JOIN
           Payment p ON c.CourierID = p.CourierID
   ->
   -> WHERE
           p.LocationID = 5
   ->
   -> GROUP BY
          c.CourierID, c.SenderName, c.ReceiverName
   ->
   -> HAVING
          SUM(p.Amount) > 1000;
   ->
Empty set (0.00 sec)
```

Retrieve couriers who have received payments totaling more than \$1000 after a certain date (PaymentDate > 'YYYY-MM-DD')

```
mysql> SELECT
          c.CourierID,
   ->
   ->
           c.SenderName,
          c.ReceiverName,
   ->
          SUM(p.Amount) AS TotalPayments
   ->
   -> FROM
          Courier c
   -> JOIN
          Payment p ON c.CourierID = p.CourierID
   ->
   -> WHERE
           p.PaymentDate >'2023-01-22'
   ->
   -> GROUP BY
          c.CourierID, c.SenderName, c.ReceiverName
   ->
   -> HAVING
          SUM(p.Amount) > 1000;
   ->
Empty set (0.00 sec)
```

Retrieve locations where the total amount received is more than \$5000 before a certain date (PaymentDate > 'YYYY-MM-DD')

```
mysql> SELECT
           l.LocationID,
    ->
           l.LocationName,
SUM(p.Amount) AS TotalAmountReceived
    -> FROM
   ->
           Location l
    -> JOIN
           Courier c ON l.LocationID = c.CourierID
   ->
    -> JOIN
   ->
           Payment p ON c.CourierID = p.CourierID
   -> WHERE
           p.PaymentDate > '2023-01-20'
   -> GROUP BY
          l.LocationID, l.LocationName
   ->
    -> HAVING
           SUM(p.Amount) > 5000;
Empty set (0.00 sec)
```

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

#### Retrieve Payments with Courier Information

```
mysql> SELECT
            p.PaymentID,
           p.CourierID,
    ->
    ->
            c.SenderName
    ->
           c.ReceiverName,
           p.Amount,
p.PaymentDate
    -> FROM
           Payment p
    ->
    -> JOIN
            Courier c ON p.CourierID = c.CourierID;
  PaymentID
              CourierID | SenderName
                                            | ReceiverName
                                                                  Amount |
                                                                             PaymentDate
          1
                            John Sender
                                              Alice Receiver
                                                                    15.99
                                                                             2023-01-15
          2
3
                            Jane Sender
                       2
                                                                    25.50
                                              Bob Receiver
                                                                             2023-01-18
                                              Charlie Receiver
                            Bob Sender
                                                                    20.75
                                                                             2023-01-20
                            Alice Sender
                                              David Receiver
                                                                    18.00
                                                                             2023-01-22
                            Charlie Sender
                                              Eva Receiver
                                                                             2023-01-25
                                                                    30.25
                                              Frank Receiver
Grace Receiver
                                                                    22.99
          6
                       6
                            Eva Sender
                                                                             2023-01-28
          7
                            David Sender
                                                                    15.50
                                                                             NULL
          8
                       8
                                              Frank Receiver
                                                                    28.75
                                                                             NULL
                            Grace Sender
                                                                             2023-02-01
                                                                    19.00
          9
                       9
                            Frank Sender
                                              Helen Receiver
         10
                      10 |
                           Helen Sender
                                              John Receiver
                                                                    23.50
                                                                             2023-02-05
10 rows in set (0.00 sec)
```

#### Retrieve Payments with Location Information

```
mysql> SELECT
            p.PaymentID,
            p.CourierID,
l.LocationName,
    ->
    ->
           p.Amount,
p.PaymentDate
    ->
    ->
    -> FROM
    ->
            Payment p
    -> JOIN
    ->
            Courier c ON p.CourierID = c.CourierID
    -> JOIN
            Location l ON p.LocationID = l.LocationID;
  PaymentID
               CourierID | LocationName
                                                       Amount |
                                                                 PaymentDate
                                                        15.99
          1
                            Hub E
                                                                 2023-01-15
           2
3
                        2
                            Warehouse H
                                                        25.50
                                                                 2023-01-18
                        3
                                                                 2023-01-20
                            Store C
                                                        20.75
          4
                            Facility J
                                                        18.00
                                                                 2023-01-22
                            Office G
                                                        30.25
                                                                 2023-01-25
          6
                        6
                            Warehouse B
                                                        22.99
                                                                 2023-01-28
                                                        15.50
           7
                        7
                            Distribution Center F
                                                                 NULL
          8
                        8
                            Store I
                                                        28.75
                                                                 NULL
                            Facility D
           9
                        9
                                                        19.00
                                                                 2023-02-01
                                                                 2023-02-05
          10
                       10
                            Office A
                                                        23.50
10 rows in set (0.00 sec)
```

## Retrieve Payments with Courier and Location Information

```
mysql> SELECT
                p.PaymentID,
c.CourierID,
                 c.SenderName,
c.ReceiverName,
      ->
->
                 l.LocationName,
                p.Amount,
p.PaymentDate
      -> FROM
                 Payment p
      -> JOIN
                 Courier c ON p.CourierID = c.CourierID
      -> JOIN
                 Location | ON p.LocationID = l.LocationID;
  PaymentID | CourierID | SenderName
                                                                    ReceiverName
                                                                                                 | LocationName
                                                                                                                                          Amount | PaymentDate |
                                         John Sender
                                                                     Alice Receiver
                                                                                                    Hub E
                                                                                                                                             15.99
                                                                                                                                                          2023-01-15
                                                                                                                                            25.50
20.75
18.00
30.25
22.99
15.50
                                                                                                                                                         2023-01-13
2023-01-18
2023-01-20
2023-01-22
2023-01-25
2023-01-28
NULL
                                         Jane Sender
Bob Sender
                                                                     Bob Receiver
Charlie Receiver
                                                                                                    Warehouse H
                                                                                                    Store C
Facility J
Office G
                                                                    David Receiver
Eva Receiver
Frank Receiver
Grace Receiver
                                         Alice Sender
Charlie Sender
                                         Eva Sender
David Sender
Grace Sender
Frank Sender
                                                                                                    Warehouse B
Distribution Center F
                                                                                                   Store I
Facility D
Office A
                                                                                                                                                         NULL
2023-02-01
2023-02-05
                                                                     Frank Receiver
Helen Receiver
                                                                                                                                            28.75
19.00
              10
                                 10
                                         Helen Sender
                                                                     John Receiver
                                                                                                                                             23.50
10 rows in set (0.00 sec)
```

#### List all payments with courier details

```
mysql> SELECT
           p.PaymentID,
            c.CourierID,
            c.SenderName
            c.ReceiverName,
    ->
           p.Amount,
           p.PaymentDate
    ->
    -> FROM
    ->
           Payment p
    -> JOTN
           Courier c ON p.CourierID = c.CourierID;
 PaymentID | CourierID | SenderName
                                            | ReceiverName
                                                                 Amount
                                                                          | PaymentDate
                                                                    15.99
                                                                             2023-01-15
                            John Sender
                                              Alice Receiver
                                                                    25.50
20.75
          2
                       2
                            Jane Sender
                                              Bob Receiver
                                                                             2023-01-18
                            Bob Sender
                                              Charlie Receiver
                                                                             2023-01-20
                            Alice Sender
Charlie Sender
                                                                            2023-01-22
2023-01-25
                                              David Receiver
                                                                    18.00
                                              Eva Receiver
                                                                    30.25
                            Eva Sender
                                              Frank Receiver
                                                                    22.99
                                                                             2023-01-28
                            David Sender
                                              Grace Receiver
                                                                    15.50
                                                                             NULL
                            Grace Sender
                                              Frank Receiver
                                                                    28.75
                                                                             NULL
                       9
                            Frank Sender
                                              Helen Receiver
                                                                    19.00
                                                                             2023-02-01
          10
                      10
                            Helen Sender
                                              John Receiver
                                                                    23.50
                                                                             2023-02-05
10 rows in set (0.00 sec)
```

#### Total payments received for each courier

```
mysql> SELECT
             c.CourierID,
             c.SenderName,
             c.ReceiverName,
SUM(p.Amount) AS TotalPaymentsReceived
    -> FROM
             Courier c
    -> JOIN
             Payment p ON c.CourierID = p.CourierID
    -> GROUP BY
             c.CourierID, c.SenderName, c.ReceiverName;
  CourierID | SenderName
                                   ReceiverName
                                                          | TotalPaymentsReceived |
                John Sender
Jane Sender
Bob Sender
                                     Alice Receiver
                                                                                 15.99
            1 I
                                                                                25.50
20.75
            2 | 3 |
                                     Bob Receiver
Charlie Receiver
                Alice Sender
Charlie Sender
                                                                                18.00
                                     David Receiver
                                                                                 30.25
                                     Eva Receiver
                Eva Sender
David Sender
                                     Frank Receiver
Grace Receiver
                                                                                22.99
                                                                                 15.50
                Grace Sender
Frank Sender
                                                                                28.75
19.00
                                     Frank Receiver
            9
                                     Helen Receiver
          10 | Helen Sender
                                     John Receiver
                                                                                23.50
10 rows in set (0.00 sec)
```

#### List payments made on a specific date

```
mysql> SELECT
    ->
           PaymentID,
           CourierID,
    ->
           Amount,
           PaymentDate
    ->
    -> FROM
    ->
           Payment
    -> WHERE
           PaymentDate = '2023-01-20';
 PaymentID | CourierID | Amount | PaymentDate
                       3 |
                            20.75 | 2023-01-20
          3 |
1 row in set (0.00 sec)
```

#### Get Courier Information for Each Payment

```
mysql> SELECT
             p.PaymentID,
     ->
    ->
             c.CourierID,
             c.SenderName
    ->
    ->
             c.ReceiverName,
             p.Amount,
p.PaymentDate
    ->
    ->
    -> FROM
             Payment p
    ->
    -> JOIN
             Courier c ON p.CourierID = c.CourierID;
 PaymentID | CourierID | SenderName
                                                  | ReceiverName
                                                                                       PaymentDate |
                                                                          | Amount |
                                                                             15.99
                                                                                       2023-01-15
                               John Sender
                                                     Alice Receiver
            2
                               Jane Sender
Bob Sender
                                                                             25.50
20.75
18.00
                                                     Bob Receiver
                                                                                       2023-01-18
                                                     Charlie Receiver
                                                                                       2023-01-20
                          3
                               Alice Sender
Charlie Sender
                                                                                       2023-01-22
                          Ц
                                                     David Receiver
            5
6
7
                                                    Eva Receiver
Frank Receiver
Grace Receiver
                                                                             30.25
22.99
                                                                                       2023-01-25
                                                                                       2023-01-28
                               Eva Sender
David Sender
                          6
                          7
                                                                             15.50
                                                                                       NULL
                                                    Frank Receiver
                               Grace Sender
Frank Sender
                                                                             28.75
19.00
                                                                                       NULL
                          8
                                                     Helen Receiver
                                                                                       2023-02-01
            9
                          9
                                                                                       2023-02-05
                                                                             23.50
           10
                         10
                               Helen Sender
                                                     John Receiver
10 rows in set (0.00 sec)
```

#### Get Payment Details with Location

```
mysql> SELECT
                 p.PaymentID,
c.CourierID,
l.LocationName,
                 c.SenderName,
c.ReceiverName,
                 p.Amount,
p.PaymentDate
       -> FROM
                 Payment p
      -> JOIN
                 Courier c ON p.CourierID = c.CourierID
                 Location | ON p.LocationID = l.LocationID;
                                                                                  SenderName
                                                                                                            ReceiverName
   PaymentID | CourierID | LocationName
                                                                                                                                            | Amount | PaymentDate
                                                                                                                                                             2023-01-15
2023-01-18
2023-01-20
2023-01-22
2023-01-25
2023-01-28
                                                                                                                                                15.99
25.50
20.75
18.00
30.25
22.99
15.50
28.75
19.00
23.50
                                          Hub E
Warehouse H
                                                                                   John Sender
Jane Sender
                                                                                                               Alice Receiver
Bob Receiver
                                    1
2
3
4
5
6
7
8
9
                                          Store C
Facility J
Office G
                                                                                  Bob Sender
Alice Sender
Charlie Sender
                                                                                                               Charlie Receiver
David Receiver
                                                                                                               Eva Receiver
                                                                                                               Frank Receiver
Grace Receiver
                                           Warehouse B
                                                                                   Eva Sender
                                                                                  David Sender
Grace Sender
Frank Sender
                                                                                                                                                             NULL
NULL
                                           Distribution Center F
                                          Store I
Facility D
Office A
                                                                                                               Frank Receiver
Helen Receiver
                                                                                                                                                             2023-02-01
2023-02-05
               10
                                  10
                                                                                   Helen Sender
                                                                                                              John Receiver
10 rows in set (0.00 sec)
```

#### Calculating Total Payments for Each Courier

```
mysql> SELECT
           c.CourierID,
           c.SenderName,
           c.ReceiverName,
           SUM(p.Amount) AS TotalPayments
    ->
    -> FROM
    ->
            Courier c
           Payment p ON c.CourierID = p.CourierID
    -> GROUP BY
           c.CourierID, c.SenderName, c.ReceiverName;
    ->
 CourierID | SenderName
                               | ReceiverName
                                                    | TotalPayments |
               John Sender
                                 Alice Receiver
                                                              15.99
                                                              25.50
20.75
              Jane Sender
Bob Sender
                                 Bob Receiver
                                 Charlie Receiver
          3
                                 David Receiver
                                                              18.00
               Alice Sender
               Charlie Sender
                                 Eva Receiver
                                                              30.25
               Eva Sender
                                 Frank Receiver
                                                              22.99
              David Sender
Grace Sender
                                 Grace Receiver
                                                              15.50
                                 Frank Receiver
                                                              28.75
          8
               Frank Sender
          9
                                 Helen Receiver
                                                              19.00
         10
                                                              23.50
              Helen Sender
                                 John Receiver
10 rows in set (0.00 sec)
```

#### List Payments Within a Date Range

```
mysql> SELECT
    ->
            PaymentID,
    ->
            CourierID,
            Amount,
    ->
            PaymentDate
    ->
    -> FROM
    ->
            Payment
    -> WHERE
            PaymentDate BETWEEN '2023-01-18' AND '2023-02-01';
  PaymentID | CourierID |
                            Amount | PaymentDate
                        2
                             25.50
                                      2023-01-18
           3
                        3
                             20.75
                                      2023-01-20
           4
                             18.00
                                      2023-01-22
                        5
                             30.25
                                      2023-01-25
                             22.99
                                      2023-01-28
           6
                        6
           9
                        9
                             19.00
                                      2023-02-01
6 rows in set (0.00 \text{ sec})
```

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

```
mysql> SELECT
           u.UserID,
u.Name AS UserName,
           cs.ServiceID,
    ->
           cs.ServiceName,
           cs.Cost
    -> FROM
    ->
           Users u
       CROSS JOIN
           CourierServices cs;
 UserID | UserName
                              ServiceID | ServiceName
                                                                     Cost
                                           Standard Shipping
      10
           Helen Adams
                                                                       10.99
       9
           Frank Turner
                                           Standard Shipping
                                                                       10.99
       8
           Grace Miller
                                       1
                                           Standard Shipping
                                                                       10.99
                                           Standard Shipping
           David White
                                                                       10.99
                                           Standard Shipping
                                                                       10.99
       6
           Eva Davis
                                       1
       5
           Charlie Wilson
                                           Standard Shipping
                                                                       10.99
                                       1
                                           Standard Shipping
           Alice Brown
                                                                       10.99
                                           Standard Shipping
                                                                       10.99
           Bob Johnson
                                           Standard Shipping
           Jane Smith
                                                                       10.99
           John Doe
                                       1
                                           Standard Shipping
                                                                       10.99
       1
                                           Express Shipping
Express Shipping
           Helen Adams
Frank Turner
                                       2
2
2
2
                                                                       19.99
      10
                                                                       19.99
       9
       8
           Grace Miller
                                           Express Shipping
                                                                       19.99
           David White
                                           Express Shipping
                                                                       19.99
       6
           Eva Davis
                                       2
2
2
                                           Express Shipping
                                                                       19.99
           Charlie Wilson
                                           Express Shipping
       5
                                                                       19.99
           Alice Brown
                                           Express Shipping
                                                                       19.99
                                       2
                                           Express Shipping
           Bob Johnson
                                                                       19.99
       3
                                       2 2 3
       2
           Jane Smith
                                           Express Shipping
                                                                       19.99
                                           Express Shipping
           John Doe
                                                                       19.99
                                           Overnight Shipping
           Helen Adams
                                                                       29.99
      10
                                       3
           Frank Turner
                                           Overnight Shipping
Overnight Shipping
       9
                                                                       29.99
                                                                       29.99
       8
           Grace Miller
           David White
                                           Overnight Shipping
                                                                       29.99
                                           Overnight Shipping
Overnight Shipping
                                       3
       6
           Eva Davis
                                                                       29.99
           Charlie Wilson
                                                                       29.99
       5
           Alice Brown
                                           Overnight Shipping
                                                                       29.99
                                           Overnight Shipping
       3
           Bob Johnson
                                       3
                                                                       29.99
                                       3
                                           Overnight Shipping
           Jane Smith
                                                                       29.99
       2
                                                                       29.99
           John Doe
                                           Overnight Shipping
      10
           Helen Adams
                                       4
                                           International Economy
                                                                       39.99
           Frank Turner
                                           International Economy
       9
                                       4
                                                                       39.99
                                       4
       8
           Grace Miller
                                           International Economy
                                                                       39.99
           David White
                                       4
                                           International Economy
                                                                       39.99
       6
                                           International Economy
                                                                       39.99
           Eva Davis
                                           International Economy
           Charlie Wilson
                                                                       39.99
```

1				1
7	David White	6	Same-Day Delivery	59.99
6	Eva Davis	6	Same-Day Delivery	59.99
5	Charlie Wilson	6	Same-Day Delivery	59.99
4	Alice Brown	6	Same-Day Delivery	59.99
] 3	Bob Johnson	6	Same-Day Delivery	59.99
2	Jane Smith	6	Same-Day Delivery	59.99
1	John Doe	6	Same-Day Delivery	59.99
10	Helen Adams	7	Special Handling	9.99
9	Frank Turner	7	Special Handling	9.99
8	Grace Miller	7	Special Handling	9.99
7	David White	7	Special Handling	9.99
6	Eva Davis	7	Special Handling	9.99
5	Charlie Wilson	7	Special Handling	9.99
4	Alice Brown	7	Special Handling	9.99
3	<b>Bob Johnson</b>	7	Special Handling	9.99
2	Jane Smith	7	Special Handling	9.99
1	John Doe	7	Special Handling	9.99
10	Helen Adams	8	Fragile Items Service	14.99
9	Frank Turner	8	Fragile Items Service	14.99
8	Grace Miller	8	Fragile Items Service	14.99
7	David White	8	Fragile Items Service	14.99
6	Eva Davis	8	Fragile Items Service	14.99
5	Charlie Wilson	8	Fragile Items Service	14.99
4	Alice Brown	8	Fragile Items Service	14.99
3	Bob Johnson	8	Fragile Items Service	14.99
2	Jane Smith	8	Fragile Items Service	14.99
1 1	John Doe	8	Fragile Items Service	14.99
10	Helen Adams	9	Signature Confirmation	4.99
9	Frank Turner	9	Signature Confirmation	4.99
8	Grace Miller	9	Signature Confirmation	4.99
7	David White	9	Signature Confirmation	4.99
6	Eva Davis	9	Signature Confirmation	4.99
5	Charlie Wilson	9	Signature Confirmation	4.99
4	Alice Brown	9	Signature Confirmation	4.99
3	Bob Johnson	9	Signature Confirmation	4.99
2	Jane Smith	9	Signature Confirmation	4.99
1 1	John Doe	9	Signature Confirmation	4.99
10	Helen Adams	10	Insurance Service	7.99
9	Frank Turner	10	Insurance Service	7.99
8	Grace Miller	10	Insurance Service	7.99
7	David White	10	Insurance Service	7.99
6	Eva Davis	10	Insurance Service	7.99
5	Charlie Wilson	10	Insurance Service	7.99
j 4 j	Alice Brown	10	Insurance Service	7.99
j 3 j	Bob Johnson	10	Insurance Service	7.99
j 2 j	Jane Smith	10	Insurance Service	7.99
j <u>1</u> j	John Doe	10	Insurance Service	7.99
,				

100 rows in set (0.00 sec)

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

```
mysql> SELECT
           e.EmployeeID,
           e.Name ÁS EmployeeName,
           l.LocationID,
           l.LocationName
    ->
    -> FROM
   -> Employee e
-> CROSS JOIN
           Location 1;
 EmployeeID | EmployeeName
                                 | LocationID | LocationName
          10
               Helen Employee
                                                 Office A
           9
               Frank Employee
                                                 Office A
           8
               Grace Employee
                                            1
                                                 Office A
               David Employee
                                                 Office A
               Eva Employee
           6
                                            1
                                                 Office A
               Charlie Employee
           5
                                            1
                                                 Office A
           4
               Alice Employee
                                            1
                                                 Office A
                                                Office A
                                            1
               Bob Employee
           2
               Jane Employee
                                                Office A
           1
                                                Office A
               John Employee
          10
               Helen Employee
                                                 Warehouse B
               Frank Employee
           9
                                                Warehouse B
           8
               Grace Employee
                                                Warehouse B
           7
               David Employee
                                                Warehouse B
           6
               Eva Employee
                                                Warehouse B
           5
               Charlie Employee
                                                Warehouse B
           4
               Alice Employee
                                                Warehouse B
               Bob Employee
                                                Warehouse B
           2
               Jane Employee
                                                Warehouse B
               John Employee
                                                 Warehouse B
           1
          10
               Helen Employee
                                                 Store C
           9
               Frank Employee
                                                 Store C
           8
                                                 Store C
               Grace Employee
           7
               David Employee
                                                 Store C
               Eva Employee
                                                 Store C
               Charlie Employee
                                            3
                                                 Store C
           4
               Alice Employee
                                                 Store C
           3
               Bob Employee
                                            3
                                                 Store C
               Jane Employee
                                                 Store C
                                                 Store C
Facility D
           1
               John Employee
               Helen Employee
                                            4
          10
               Frank Employee
                                                 Facility D
                                            4
                                                 Facility D
               Grace Employee
           7
               David Employee
                                                 Facility D
                                                 Facility D
               Eva Employee
                                            Ц
               Charlie Employee
                                                 Facility D
           4
                                            4
                                                 Facility D
               Alice Employee
               Bob Employee
                                                 Facility D
```

```
7
6
     David Employee
                                        Distribution Center F
                                   6
                                   6
                                        Distribution Center F
     Eva Employee
     Charlie Employee
                                   6
                                        Distribution Center F
                                        Distribution Center F
     Alice Employee
                                   6
3
     Bob Employee
Jane Employee
                                        Distribution Center F
                                   6
                                   6
                                        Distribution Center F
     John Employee
                                        Distribution Center F
10
     Helen Employee
                                   7
7
7
                                        Office G
                                        Office G
9
     Frank Employee
8
                                        Office G
     Grace Employee
7
6
     David Employee
                                   7
7
7
                                        Office G
     Eva Employee
                                        Office G
     Charlie Employee
                                        Office G
                                   7
7
                                        Office G
     Alice Employee
     Bob Employee
3
                                        Office G
                                   .
7
7
                                        Office G
     Jane Employee
     John Employee
10
     Helen Employee
                                   8
                                        Warehouse H
     Frank Employee
9
                                   8
                                        Warehouse H
8
                                        Warehouse H
     Grace Employee
                                   8
     David Employee
                                        Warehouse H
6
     Eva Employee
                                   8
                                        Warehouse H
5
     Charlie Employee
                                   8
                                        Warehouse H
4
     Alice Employee
                                        Warehouse H
     Bob Employee
                                   8
                                        Warehouse H
     Jane Employee
2
                                   8
                                        Warehouse H
                                   8
1
                                        Warehouse H
     John Employee
10
                                   9
     Helen Employee
                                        Store I
9
     Frank Employee
                                   9
                                        Store I
     Grace Employee
David Employee
8
                                   9
                                        Store I
7
6
                                   9
                                        Store I
                                   9
     Eva Employee
                                        Store
5
     Charlie Employee
                                   9
                                        Store
     Alice Employee
                                   9
4
                                        Store I
3
2
                                   9
     Bob Employee
                                        Store I
                                   9
     Jane Employee
                                        Store
1
     John Employee
                                   9
                                        Store I
10
                                  10
                                        Facility J
     Helen Employee
9
                                  10
     Frank Employee
                                        Facility
     Grace Employee
                                  10
                                        Facility J
7
6
     David Employee
                                        Facility J
                                  10
                                        Facility
     Eva Employee
                                  10
     Charlie Employee
                                        Facility J
                                  10
                                        Facility J
 4
     Alice Employee
                                  10
     Bob Employee
                                        Facility J
 3
                                  10
 2
                                  10
                                        Facility J
     Jane Employee
 1
     John Employee
                                  10
                                        Facility J
```

100 rows in set (0.00 sec)

#### Retrieve a list of couriers and their corresponding sender information (if available

```
mysql> SELECT
             CourierID,
             SenderName,
             SenderAddress
    ->
    -> FROM
             Courier;
 CourierID | SenderName
                                    SenderAddress
                                     123 Main St, CityA
456 Elm St, CityC
                John Sender
                Jane Sender
           2
                Bob Sender
                                     789 Maple Ln, CityE
           3
                Alice Sender
                                     101 Oak Ave, CityG
           5
                Charlie Sender
                                    202 Cedar Blvd, CityI
                                    303 Birch Dr, Cityk
404 Oak Ave, CityM
505 Elm St, CityO
606 Pine St, CityQ
           6
                Eva Sender
           7
                David Sender
           8
                Grace Sender
                Frank Sender
           9
                                   | 707 Birch Dr, CityS
                Helen Sender
          10
10 rows in set (0.00 sec)
```

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

```
mysql> SELECT
           CourierID,
           ReceiverName,
    ->
           ReceiverAddress
    -> FROM
           Courier;
  CourierID | ReceiverName
                                  ReceiverAddress
                                  456 Oak Ave, CityB
789 Pine Rd, CityD
              Alice Receiver
          1
          2
              Bob Receiver
                                  101 Cedar Blvd, CityF
              Charlie Receiver
              David Receiver
                                  202 Pine St, CityH
                                   303 Elm St, CityJ
          5
              Eva Receiver
          6
              Frank Receiver
                                  404 Pine St, CityL
          7
              Grace Receiver
                                   505 Cedar Blvd, CityN
              Frank Receiver
                                   606 Birch Dr, CityP
          8
                                   707 Cedar Blvd, CityR
          9
              Helen Receiver
              John Receiver
                                  808 Elm St, CityT
         10
10 rows in set (0.00 sec)
mysql>
```

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

```
mysql> SELECT
           CourierID,
           SenderName,
           ReceiverName,
    ->
           Weight,
           Status,
TrackingNumber,
           DeliveryDate
   -> FROM
          Courier
   -> WHERE
           SenderName = 'Charlie Sender';
 CourierID | SenderName
                              | ReceiverName | Weight | Status
                                                                   | TrackingNumber | DeliveryDate |
          5 | Charlie Sender | Eva Receiver |
                                                 2.00 | Delivered | TRK123005
                                                                                      2023-01-22
1 row in set (0.00 sec)
mysql>
```

## List all employees who share the same role.

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

```
mysql> SELECT
          p.PaymentID,
          p.CourierID,
    ->
   ->
       p.Amoune,
p.PaymentDate
          p.Amount,
   -> FROM
          Payment p
   -> JOIN
          Courier c ON p.CourierID = c.CourierID
   ->
   -> WHERE
   -> p.LocationID =6;
 PaymentID | CourierID | Amount | PaymentDate |
          7 |
                      7 | 15.50 | NULL
1 row in set (0.00 sec)
mysql>
```

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

```
mysql> SELECT

-> CourierID,
-> SenderName,
-> SenderAddress,
-> ReceiverName,
-> ReceiverAddress,
-> Weight,
-> Status,
-> TrackingNumber,
-> DeliveryDate
-> FROM
-> Courier
-> WHERE
-> SenderAddress = '303 Birch Dr, CityK';

| CourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status | TrackingNumber | DeliveryDate |
-> GourierID | SenderName | SenderAddress | ReceiverName | ReceiverAddress | Weight | Status | TrackingNumber | DeliveryDate |
-> I row in set (0.00 sec)

mysql> |
```

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

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

```
mysql> SELECT
    ->
           CourierID,
    ->
           SenderName,
           ReceiverName,
    ->
           Weight
    ->
    -> FROM
           Courier
    -> WHERE
           Weight > (SELECT AVG(Weight) FROM Courier);
  CourierID | SenderName
                            ReceiverName
                                                 Weight
          1
              John Sender
                             Alice Receiver
                                                   2.50
          3
              Bob Sender
                             Charlie Receiver
                                                   3.20
              Eva Sender
                                                   2.80
          6
                              Frank Receiver
            | Grace Sender | Frank Receiver
          8
                                                   3.50
4 rows in set (0.00 sec)
mysql>
```

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

```
mysql> SELECT
                EmployeeID,
               Name,
Email,
                ContactNumber,
                Role,
               Salary
      -> FROM
               .
Employee
                Salary > (SELECT AVG(Salary) FROM Employee);
  EmployeeID | Name
                                                | Email
                                                                                                ContactNumber |
                                                                                                                         Role
                                                                                                                                                           | Salary
                      Bob Employee
Alice Employee
Charlie Employee
                                                  bob.employee@example.com
alice.employee@example.com
charlie.employee@example.com
                                                                                                                          Warehouse Manager
Logistics Coordinator
IT Specialist
                                                                                                                                                              50000.00
45000.00
                                                                                                 567-890-1234
                                                                                                 678-901-2345
                                                                                                  789-012-3456
                                                                                                                                                              60000.00
                     Eva Employee
Helen Employee
                                                  eva.employee@example.com
helen.employee@example.com
                                                                                                 890-123-4567
456-789-0123
                                                                                                                          Operations Manager
Marketing Specialist
                                                                                                                                                              55000.00
5 rows in set (0.00 sec)
mysql>
```

#### 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 < (SELECT MAX(Cost) FROM CourierServices);
+-----+
| TotalCost |
+-----+
| 188.91 |
+-----+
1 row in set (0.00 sec)</pre>
mysql>
```

#### Find all couriers that have been paid for

```
c.CourierID,
c.SenderName,
c.ReceiverName,
                                 C.Reterverwame,
c.Weight,
c.Status,
c.TrackingNumber,
c.DeliveryDate,
p.Amount AS PaymentAmount,
p.PaymentDate
             -> FROM
                                  Courier c
                                   .
Payment p ON c.CourierID = p.CourierID;
       CourierID | SenderName | ReceiverName | Weight | Status
                                                                                                                                                                                                                                | TrackingNumber | DeliveryDate | PaymentAmount | PaymentDate |
                                                                                             Alice Receiver
Bob Receiver
Charlie Receiver
David Receiver
Eva Receiver
Frank Receiver
Grace Receiver
Frank Receiver
Helen Receiver
John Receiver
                                                                                                                                                                    2.50 | In Transit
1.80 | Delivered
3.20 | In Transit
1.50 | Pending
2.00 | Delivered
2.80 | Delivered
1.20 | Delivered
3.50 | In Transit
2.20 | Pending
1.90 | Delivered
                                                                                                                                                                                                                                                                                           2023-01-15
2023-01-18
2023-01-20
NULL
2023-01-22
2023-01-25
2023-01-28
NULL
NULL
2023-02-01
                                                                                                                                                                                                                                                                                                                                                                    15.99 | 2023-01-15

25.56 | 2023-01-18

20.75 | 2023-01-20

18.00 | 2023-01-25

30.25 | 2023-01-25

22.99 | 2023-01-25

15.50 | NULL

28.75 | NULL

19.00 | 2023-02-01

23.50 | 2023-02-05
                              1 | John Sender
2 | Jane Sender
3 | Bob Sender
4 | Alice Sender
5 | Charlie Sender
                                                                                                                                                                                                                                     TRK123001
TRK123002
TRK123003
TRK123004
TRK123005
                           6 | Eva Sender
7 | David Sender
8 | Grace Sender
9 | Frank Sender
10 | Helen Sender
                                                                                                                                                                                                                                     TRK123005
TRK123006
TRK123007
TRK123008
TRK123009
TRK123010
10 rows in set (0.00 sec)
```

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

```
mysql> SELECT
            CourierID,
SenderName,
            ReceiverName,
            Weight
    -> FROM
            Courier
    -> WHERE
            Weight > (
SELECT MAX(Weight)
                 FROM Courier
                WHERE SenderName = 'David Sender');
                                  ReceiverName
 CourierID | SenderName
                                                       | Weight |
                                   Alice Receiver
               John Sender
                                                           2.50
               Jane Sender
Bob Sender
                                                           1.80
                                   Bob Receiver
                                   Charlie Receiver
                                                           3.20
               Alice Sender
                                   David Receiver
                                                           1.50
                                   Eva Receiver
Frank Receiver
                                                           2.00
2.80
           5
               Charlie Sender
               Eva Sender
           6
               Grace Sender
                                   Frank Receiver
                                                           3.50
          9 | Frank Sender
10 | Helen Sender
                                                           2.20
                                   Helen Receiver
                                   John Receiver
                                                           1.90
9 rows in set (0.00 sec)
mysql>
```

# **Entity Relationship Diagram**

