

Task 1: Schema Design

-- Schema design of Courier Management System

```
CREATE TABLE User (
    UserID INT PRIMARY KEY,
    Name VARCHAR(255),
    Email VARCHAR(255) UNIQUE,
    Password VARCHAR(255),
    ContactNumber VARCHAR(20),
    Address TEXT
);
```

```
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
);
```

```
CREATE TABLE CourierServices (
```

```
ServiceID INT PRIMARY KEY,  
ServiceName VARCHAR(100),  
Cost DECIMAL(8, 2)  
);
```

```
CREATE TABLE Employee (  
EmployeeID INT PRIMARY KEY,  
Name VARCHAR(255),  
Email VARCHAR(255) UNIQUE,  
ContactNumber VARCHAR(20),  
Role VARCHAR(50),  
Salary DECIMAL(10, 2)  
);
```

```
CREATE TABLE Location (  
LocationID INT PRIMARY KEY,  
LocationName VARCHAR(100),  
Address TEXT  
);
```

```
CREATE TABLE Payment (  
PaymentID INT PRIMARY KEY,  
CourierID INT,
```

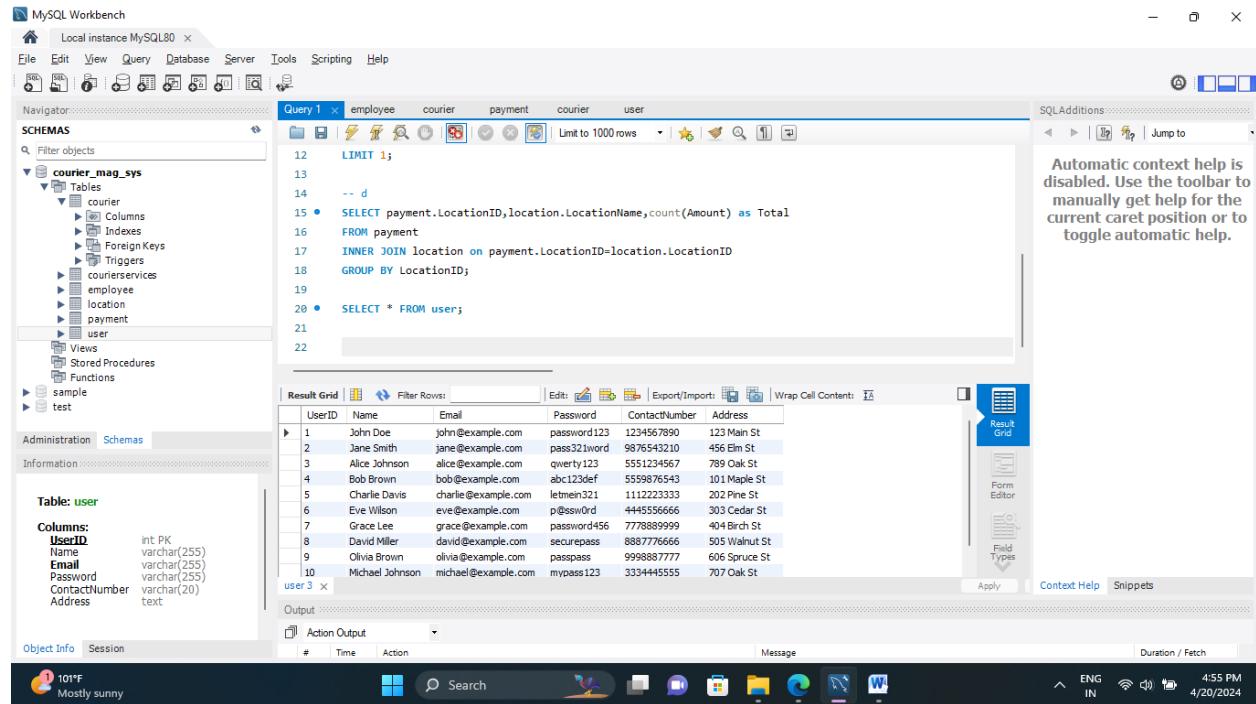
```
LocationID INT,  
Amount DECIMAL(10 , 2 ),  
PaymentDate DATE,  
FOREIGN KEY (CourierID)  
    REFERENCES Courier (CourierID),  
FOREIGN KEY (LocationID)  
    REFERENCES Location (LocationID)  
);
```

--Queries

Task 2: Select,Where

1. List all customers:

```
SELECT * FROM user;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the schema `courier_mag_sys` with tables `courier`, `payment`, `user`, and `location`.
- Query Editor:** Displays the SQL query:

```
12    LIMIT 1;
13
14    -- d
15 •   SELECT payment.LocationID,location.LocationName,count(Amount) as Total
16     FROM payment
17     INNER JOIN location on payment.LocationID=location.LocationID
18     GROUP BY LocationID;
19
20 •   SELECT * FROM user;
21
22
```
- Result Grid:** Shows the results of the `user` table:

User ID	Name	Email	Password	Contact Number	Address
1	John Doe	john@example.com	password123	123 Main St	
2	Jane Smith	jane@example.com	pass321word	9876543210	456 Elm St
3	Alice Johnson	alice@example.com	qwerty123	551234567	789 Oak St
4	Bob Brown	bob@example.com	abc123def	559876543	101 Maple St
5	Charlie Davis	charlie@example.com	lethmein321	111222333	202 Pine St
6	Eve Wilson	eve@example.com	p@ssw0rd	445556666	303 Cedar St
7	Grace Lee	grace@example.com	password456	777889999	404 Birch St
8	David Miller	david@example.com	securepass	888776666	505 Walnut St
9	Olivia Brown	olivia@example.com	passpass	999887777	606 Spruce St
10	Michael Johnson	michael@example.com	mypass123	333445555	707 Oak St
- Information:** Shows the `user` table definition with columns: `User ID` (int PK), `Name` (varchar(255)), `Email` (varchar(255)), `Password` (varchar(255)), `Contact Number` (varchar(20)), and `Address` (text).
- Action Output:** Shows the status bar with weather information: 101°F Mostly sunny, and system status: ENG IN, 4:55 PM, 4/20/2024.

2. List all orders for a specific customer:

```
SELECT *  
FROM courier  
WHERE SenderName = 'John Doe'
```

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
16  FROM payment  
17  INNER JOIN location ON payment.LocationID=location.LocationID  
18  GROUP BY LocationID;  
19  
20 •  SELECT * FROM user;  
21  
22 •  SELECT * |  
23  FROM courier  
24  WHERE SenderName = 'John Doe'  
25  
26
```

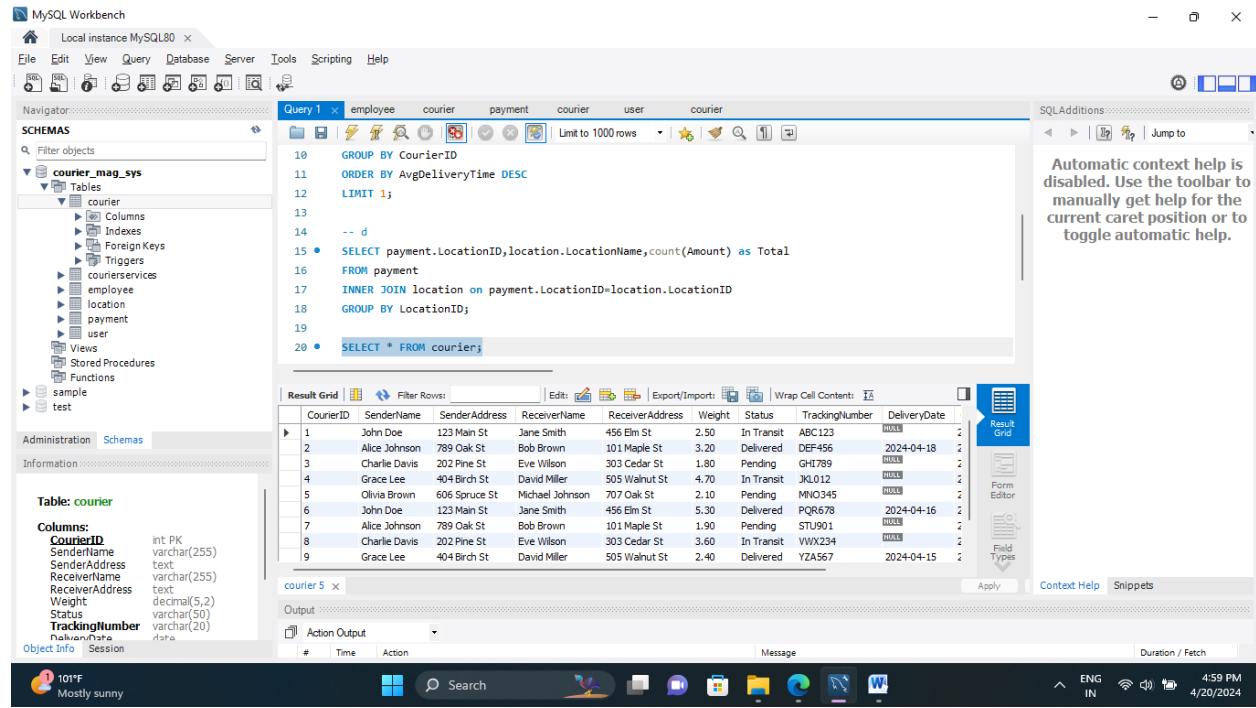
The results grid displays the following data:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	NULL	2024-04-16
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-16
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

A tooltip message in the center right states: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

3. List all couriers:

SELECT * FROM courier;



The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** courier_mag_sys
- Tables:** courier
- Query Editor:** Contains the following SQL code:

```
10 GROUP BY CourierID
11 ORDER BY AvgDeliveryTime DESC
12 LIMIT 1;
13
14 -- d
15 • SELECT payment.LocationID,location.LocationName,count(Amount) as Total
16 FROM payment
17 INNER JOIN location ON payment.LocationID=location.LocationID
18 GROUP BY LocationID;
19
20 • SELECT * FROM courier;
```
- Result Grid:** Displays the results of the query:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	NULL
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	NULL
9	Grace Lee	404 Birch St	David Miller	505 Walnut St	2.40	Delivered	YZA567	2024-04-15

4. List all packages for a specific order:

```
SELECT *  
FROM courier
```

```
WHERE SenderName='Alice Johnson';
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
-- 4  
48 •   SELECT *  
49   FROM courier  
50   WHERE SenderName='Alice Johnson'  
51   -- 5  
52 •   SELECT *
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, and Order. The data shows two rows for Alice Johnson.
- Output Window:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	14:26:50	SELECT * FROM courier_mag_sys.courier LIMIT 0, 1000	10 row(s) returned	0.016 sec / 0.000 sec
2	14:27:01	SELECT * FROM courier WHERE SenderName='Alice Johnson' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
- System Tray:** Shows the weather (93°F, Sunny), search bar, and various system icons.

5. List all deliveries for a specific courier:

```
SELECT *  
FROM courier  
WHERE CourierID=1
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL code:

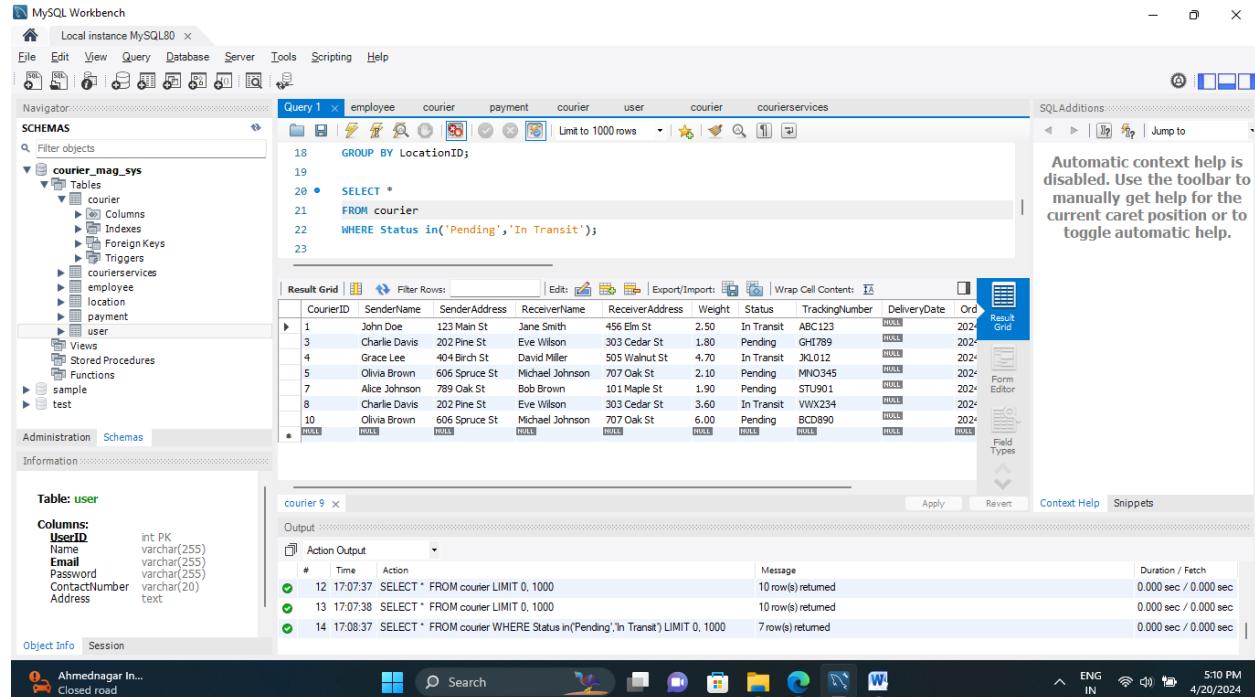
```
50 WHERE SenderName='Alice Johnson';  
51 -- 5  
52 • SELECT *  
53 FROM courier  
54 WHERE CourierID=1
```
- Result Grid:** Displays the results of the query:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-04-21
- Output Window:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	14:26:50	SELECT * FROM courier_mag_sys.courier LIMIT 0, 1000	10 row(s) returned	0.016 sec / 0.000 sec
2	14:27:01	SELECT * FROM courier WHERE SenderName='Alice Johnson' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
3	14:27:41	SELECT * FROM courier WHERE CourierID=1 LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
- System Tray:** Shows the Windows taskbar with icons for Start, Search, File Explorer, Task View, and others.

6. List all undelivered packages:

```
SELECT *  
FROM courier  
WHERE Status in('Pending','In Transit');
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
18 GROUP BY LocationID;  
19  
20 • SELECT *  
21 FROM courier  
22 WHERE Status in('Pending','In Transit');  
23
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, and Ord. The data includes rows for John Doe, Charlie Davis, Grace Lee, Olivia Brown, Alice Johnson, and others.
- Output Window:** Shows the action history with the following entries:

#	Time	Action	Message	Duration / Fetch
12	17:07:37	SELECT * FROM courier LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
13	17:07:38	SELECT * FROM courier LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
14	17:08:37	SELECT * FROM courier WHERE Status in('Pending','In Transit') LIMIT 0, 1000	7 row(s) returned	0.000 sec / 0.000 sec
- System Bar:** Includes icons for search, file operations, and system status (Ahmednagar IN, Closed road, ENG IN, 5:10 PM, 4/20/2024).

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

```
SELECT *  
FROM courier  
WHERE DeliveryDate=current_date();
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
56 -- 7  
57  
58 • SELECT *  
59   FROM courier  
60   WHERE DeliveryDate=current_date();
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, Order, and Order. One row is shown:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order	Order
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-04-21	2024-04-21
- Output Window:** Shows the execution history with three entries:

#	Time	Action	Message	Duration / Fetch
3	14:27:41	SELECT * FROM courier WHERE CourierID=1 LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
4	14:30:03	SELECT * FROM courier WHERE DeliveryDate=current_date() LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
5	14:30:40	SELECT * FROM courier WHERE DeliveryDate=current_date() LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
- System Tray:** Shows the weather as 93°F Sunny, system icons, and the date/time as 4/21/2024 2:30 PM.

8. List all packages with a specific status:

```
SELECT *  
FROM courier  
WHERE Status ='Delivered';
```

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Schemas:** couriers_mag_sys (selected), containing tables like courier, payment, user, and courierservices.
- Query Editor:** Shows the SQL query:

```
18 GROUP BY LocationID;  
19  
20 • SELECT *  
21   FROM courier  
22   WHERE Status ='Delivered';  
23
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, Order, and Order. The data includes rows for Alice Johnson, John Doe, Jane Smith, Grace Lee, and David Miller.
- Output Window:** Shows the action history with entries for SELECT queries and their execution times.
- System Bar:** Current temp, Near record, Search, and various system icons.
- Status Bar:** ENG IN, 5:13 PM, 4/20/2024.

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

```
SELECT SenderName, COUNT(CourierID)
```

```
FROM courier
```

```
GROUP BY SenderName;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Displays the SQL query:

```
62 -- 9
63
64 • SELECT SenderName, COUNT(CourierID)
  FROM courier
  GROUP BY SenderName;
```
- Result Grid:** Shows the output of the query:

SenderName	COUNT(CourierID)
John Doe	2
Alice Johnson	2
Charlie Davis	2
Grace Lee	2
Olivia Brown	2
- Action Output:** Shows the history of actions taken in the session:

#	Time	Action	Message	Duration / Fetch
4	14:30:03	SELECT * FROM courier WHERE DeliveryDate=current_date() LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
5	14:30:40	SELECT * FROM courier WHERE DeliveryDate=current_date() LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
6	14:33:04	SELECT SenderName, COUNT(CourierID) FROM courier GROUP BY SenderName ...	5 row(s) returned	0.015 sec / 0.000 sec
- System Bar:** Includes icons for weather (93°F, Sunny), search, taskbar, and system status (ENG IN, 2:33 PM, 4/21/2024).

10. Find the average delivery time for each courier

```
SELECT CourierID, DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime
```

```
FROM Courier
```

```
WHERE DeliveryDate IS NOT NULL;
```

The screenshot shows the MySQL Workbench interface. The 'Query 1' tab contains the following SQL code:

```
27
28 •    SELECT CourierID, DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime
29     FROM Courier
30     WHERE DeliveryDate IS NOT NULL;
31
32 •    SELECT *
```

The 'Result Grid' shows the results of the query:

CourierID	AvgDeliveryTime
2	4
6	10
9	4

The 'Output' pane at the bottom right shows the following log entries:

#	Time	Action	Message	Duration / Fetch
20	17:18:34	SELECT CourierID, DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime.cou...	Error Code: 1140. In aggregated query without GROUP BY, expression #1 of SELEC...	0.000 sec
21	17:18:46	SELECT DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime.count(Courierl...	Error Code: 1140. In aggregated query without GROUP BY, expression #1 of SELEC...	0.000 sec
22	17:19:24	SELECT CourierID, DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime FR...	3 row(s) returned	0.000 sec / 0.000 sec

11. List all packages with a specific weight range:

```
SELECT *  
FROM courier  
WHERE Weight BETWEEN 2.50 AND 4.0;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** courier_mag_sys
- Tables:** courier, employee, payment, location, user
- Query Editor:** Contains the SQL query:

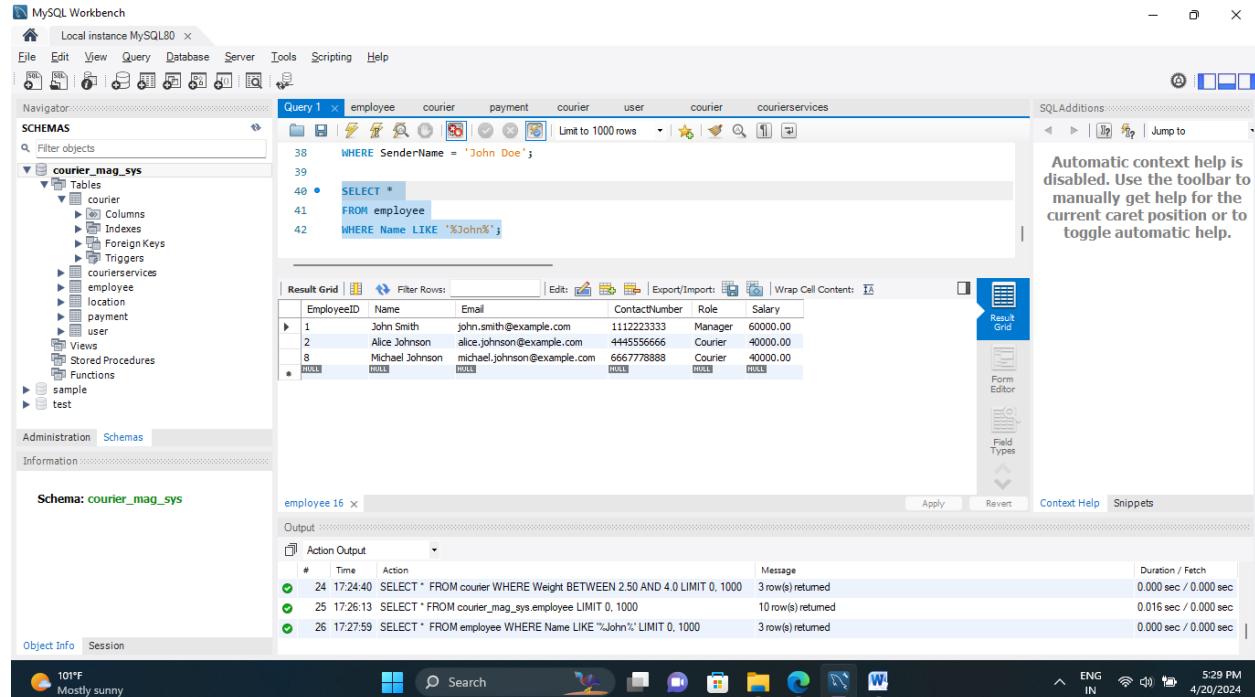
```
31  
32 • SELECT *  
33 FROM courier  
34 WHERE Weight BETWEEN 2.50 AND 4.0;  
35  
36 • SELECT *
```
- Result Grid:** Displays the results of the query:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	NULL	2024-04-18 17:24:40
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	NULL	2024-04-18 17:24:40
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	NULL	2024-04-18 17:24:40
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
- Output Window:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
22	17:19:24	SELECT CourierID, DATEDIFF(DeliveryDate, Order_Date) AS AvgDeliveryTime FR...	3 row(s) returned	0.000 sec / 0.000 sec
23	17:24:13	SELECT * FROM courier WHERE Weight BETWEEN 2.50 AND 3.0 LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
24	17:24:40	SELECT * FROM courier WHERE Weight BETWEEN 2.50 AND 4.0 LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec

12. Retrieve employees whose names contain 'John'

```
SELECT *  
FROM employee  
WHERE Name LIKE '%John%';
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
38 WHERE SenderName = 'John Doe';  
39  
40 • SELECT *  
41 FROM employee  
42 WHERE Name LIKE '%John%'
```
- Result Grid:** Displays the results of the query:

EmployeeID	Name	Email	ContactNumber	Role	Salary
1	John Smith	john.smith@example.com	11223333	Manager	60000.00
2	Alice Johnson	alice.johnson@example.com	4445556666	Courier	40000.00
8	Michael Johnson	michael.johnson@example.com	6667778888	Courier	40000.00
- Output Window:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
24	17:24:40	SELECT * FROM courier WHERE Weight BETWEEN 2.50 AND 4.0 LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
25	17:26:13	SELECT * FROM courier_mag_sys.employee LIMIT 0, 1000	10 row(s) returned	0.016 sec / 0.000 sec
26	17:27:59	SELECT * FROM employee WHERE Name LIKE '%John%' LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
- System Bar:** Includes weather information (101°F, Mostly sunny), system icons (Search, File Explorer, Task View, etc.), and system status (ENG IN, 5:29 PM, 4/20/2024).

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

SELECT CourierID FROM

payment

WHERE Amount > 50;

The screenshot shows the MySQL Workbench interface. In the top-left pane, the 'Schemas' tree is visible, with 'courier_mag_sys' selected. Under 'Tables', several tables are listed: courier, payment, employee, location, and user. The 'Query 1' tab contains the following SQL code:

```
42 WHERE Name LIKE '%John%';
43
44 • SELECT CourierID FROM
45 payment
46 WHERE Amount > 50;
47
```

The 'Result Grid' pane displays the results of the last query, which is a single column named 'CourierID' containing three rows: 1, 1, and 10. The 'payment 19' tab in the bottom-left shows the following log output:

#	Time	Action	Message	Duration / Fetch
28	17:31:15	SELECT * FROM courier_mag_sys.payment LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
29	17:31:36	SELECT CourierID FROM payment WHERE Amount > 50 LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
30	17:32:05	SELECT CourierID FROM payment WHERE Amount > 50 LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec

The status bar at the bottom right shows the date and time as 4/20/2024 5:32 PM.

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

```
SELECT Employee_name,COUNT(CourierID) as "Total no of Courier"
```

```
FROM courier
```

```
GROUP BY Employee_name;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
1  SELECT Employee_name,COUNT(CourierID) as "Total no of Courier"
2  FROM courier
3  GROUP BY Employee_name;
```
- Result Grid:** Displays the results of the query:

Employee_name	Total no of Courier
NULL	7
Alice Johnson	2
Bob Brown	1
- Action Output:** Shows the history of actions taken in the session:

#	Time	Action	Message	Duration / Fetch
11	16:42:43	SELECT * FROM courier_mag_sys.courier LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
12	16:45:05	SELECT COUNT(courier_id) as "Total no of Couriers" FROM courier GROUP BY E...	Error Code: 1054. Unknown column 'courier_id' in field list'	0.000 sec
13	16:45:36	SELECT COUNT(CourierID) as "Total no of Couriers" FROM courier GROUP BY E...	3 row(s) returned	0.000 sec / 0.000 sec
14	16:45:53	SELECT Employee_name,(CourierID) as "Total no of Couriers" FROM courier GRO...	Error Code: 1055. Expression #2 of SELECT list is not in GROUP BY clause and con...	0.000 sec
15	16:46:51	SELECT Employee_name,COUNT(CourierID) as "Total no of Couriers" FROM courier ...	3 row(s) returned	0.000 sec / 0.000 sec
16	16:47:02	SELECT Employee_name,COUNT(CourierID) as "Total no of Couriers" FROM courier ...	3 row(s) returned	0.000 sec / 0.000 sec
17	16:50:47	SELECT Employee_name,COUNT(CourierID) as "Total no of Courier" FROM courier ...	3 row(s) returned	0.000 sec / 0.000 sec
- System Status:** Shows the weather as "Partly sunny" at 103°F.
- System Icons:** Includes icons for search, file, folder, and other system functions.
- System Bar:** Shows the date (4/19/2024), time (4:50 PM), and language (ENG IN).

15. Calculate the total revenue generated by each location

```
SELECT payment.LocationID,location.LocationName,sum(Amount) as Total
```

```
FROM payment
```

```
INNER JOIN location on payment.LocationID=location.LocationID
```

```
GROUP BY LocationID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database schema for the `courier_mag_sys` database, including tables like `courier`, `employee`, `courierservices`, and `location`.
- SQL Editor:** Displays the query:

```
1 SELECT payment.LocationID,location.LocationName,sum(Amount) as Total
2 FROM payment
3 INNER JOIN location on payment.LocationID=location.LocationID
4 GROUP BY LocationID;
```
- Result Grid:** Shows the results of the query in a grid format:

LocationID	LocationName	Total
1	Main Office	70.00
2	Warehouse	20.00
3	Distribution Center	25.00
4	Branch Office	30.00
5	Hub Center	35.00
6	Service Center	40.00
7	Regional Office	45.00
8	Dispatch Center	50.00
10	Terminal	60.00

- Status Bar:** Shows "Query Completed" and system information like "93°F Smoke".
- System Tray:** Shows icons for battery, signal, and date/time.

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

SELECT ReceiverAddress , COUNT(CourierID) as "Total no of Couriers"

FROM courier

group by ReceiverAddress;

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 •   SELECT ReceiverAddress , COUNT(CourierID) as "Total no of Couriers"
2   FROM courier
3   group by ReceiverAddress;
```

The results grid displays the following data:

ReceiverAddress	Total no of Couriers
456 Elm St	2
101 Maple St	2
303 Cedar St	2
505 Walnut St	2
707 Oak St	2

The status bar at the bottom right indicates the session is "Smoke" and the date and time are "4/19/2024 11:42 AM".

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

```
SELECT CourierID, AVG(DATEDIFF(DeliveryDate, Order_Date)) AS AvgDeliveryTime  
FROM Courier  
WHERE DeliveryDate IS NOT NULL  
GROUP BY CourierID  
ORDER BY AvgDeliveryTime DESC  
LIMIT 1;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database schema for the `courier_mag_sys` database, including tables like `courier`, `courierservices`, `employee`, `location`, and `payment`.
- Query Editor:** Contains the SQL query:

```
6  
7 •  SELECT CourierID, AVG(DATEDIFF(DeliveryDate, Order_Date)) AS AvgDeliveryTime  
8   FROM Courier  
9   WHERE DeliveryDate IS NOT NULL  
10  GROUP BY CourierID  
11  ORDER BY AvgDeliveryTime DESC  
12  LIMIT 1;  
13  
14
```
- Result Grid:** Displays the result of the query:

CourierID	AvgDeliveryTime
6	10.0000
- Output:** Shows the log of actions taken during the session, including the execution of the query and its results.
- System Bar:** Includes icons for search, file operations, and system status (weather, battery, network, etc.).

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

```
SELECT payment.LocationID,location.LocationName,sum(Amount) as Total
```

```
FROM payment
```

```
INNER JOIN location on payment.LocationID=location.LocationID
```

```
GROUP BY LocationID
```

```
HAVING sum(Amount)<60;
```

The screenshot shows the MySQL Workbench interface with a query editor window titled "SQL File 1" containing the following SQL code:

```
1 •  SELECT payment.LocationID,location.LocationName,sum(Amount) as Total
2   FROM payment
3   INNER JOIN location on payment.LocationID=location.LocationID
4   GROUP BY LocationID
5   HAVING sum(Amount)<60;
6
7
8
```

The "Result Grid" pane displays the following data:

LocationID	LocationName	Total
2	Warehouse	20.00
3	Distribution Center	25.00
4	Branch Office	30.00
5	Hub Center	35.00
6	Service Center	40.00
7	Regional Office	45.00
8	Dispatch Center	50.00

The "Output" pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
17	14:17:56	SELECT courier.* FROM courier JOIN Payment ON courier.CourierID = payment.CourierID	1 row(s) returned	0.015 sec / 0.000 sec
18	14:23:36	SELECT payment.LocationID,location.LocationName,sum(Amount) as Total FROM ...	7 row(s) returned	0.000 sec / 0.000 sec

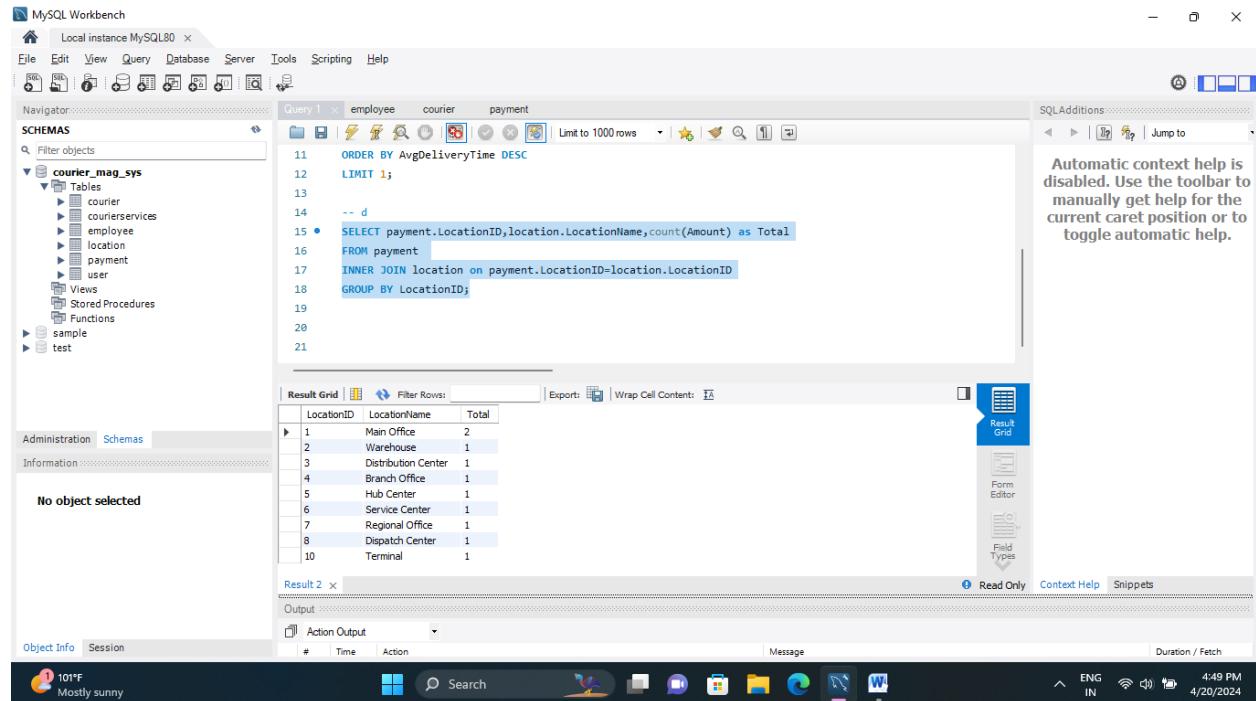
19. Calculate Total Payments per Location

```
SELECT payment.LocationID,location.LocationName,count(Amount) as Total
```

```
FROM payment
```

```
INNER JOIN location on payment.LocationID=location.LocationID
```

```
GROUP BY LocationID;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
11 ORDER BY AvgDeliveryTime DESC
12 LIMIT 1;
13
14 -- d
15 • SELECT payment.LocationID,location.LocationName,count(Amount) as Total
16 FROM payment
17 INNER JOIN location on payment.LocationID=location.LocationID
18 GROUP BY LocationID;
19
20
21
```
- Result Grid:** Displays the results of the query in a table format:

LocationID	LocationName	Total
1	Main Office	2
2	Warehouse	1
3	Distribution Center	1
4	Branch Office	1
5	Hub Center	1
6	Service Center	1
7	Regional Office	1
8	Dispatch Center	1
10	Terminal	1
- System Bar:** Shows the weather (101°F, Mostly sunny), system icons (Search, File Explorer, Task View, etc.), and system status (ENG IN, 4:49 PM, 4/20/2024).

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

(LocationID = X):

```
SELECT courier.*
```

```
FROM courier
```

```
INNER JOIN Payment ON courier.CourierID = payment.CourierID
```

```
WHERE payment.LocationID = 1
```

```
GROUP BY courier.CourierID
```

```
HAVING SUM(payment.Amount) > 1000;
```

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Toolbar:** Includes icons for New Connection, Open Connection, Save, Print, Copy, Paste, Find, Replace, and others.
- Navigator:** Shows the schema `courier_mag_sys` with tables `courier`, `payment`, and others like `courierservices`, `employee`, `location`.
- SQL Editor:** Contains the query:

```
1 • SELECT courier.*  
2   FROM courier  
3   INNER JOIN Payment ON courier.CourierID = payment.CourierID  
4   WHERE payment.LocationID = 1  
5   GROUP BY courier.CourierID  
6   HAVING SUM(payment.Amount) > 1000;  
7  
8
```
- Result Grid:** Displays the result of the query:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-01-15 14:09:44
- Output Tab:** Shows the log output:

#	Time	Action	Message	Duration / Fetch
15	14:09:36	SELECT * FROM courier JOIN Payment ON courier.CourierID = payment.CourierID ...	Error Code: 1055. Expression #10 of SELECT list is not in GROUP BY clause and co...	0.000 sec
16	14:09:44	SELECT courier.* FROM courier JOIN Payment ON courier.CourierID = payment.Co...	1 row(s) returned	0.000 sec / 0.000 sec
- System Bar:** Shows system status including battery level (98%), network, and date/time (2:10 PM, 4/19/2024).

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

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

```
SELECT courier.*
```

```
FROM courier
```

```
JOIN Payment ON courier.CourierID = payment.CourierID
```

```
WHERE payment.PaymentDate > 2024-04-15
```

```
GROUP BY courier.CourierID
```

```
HAVING SUM(payment.Amount) > 1000;
```

The screenshot shows the MySQL Workbench interface with a query editor window titled "SQL File 1". The query is a SELECT statement that joins the "courier" and "payment" tables, filters payments made after April 15, 2024, groups by courier ID, and includes a HAVING clause to filter couriers with total payments over \$1000. The results are displayed in a grid with one row, showing a courier named John Doe with tracking number ABC123.

```
8 •  SELECT courier.*  
9   FROM courier  
10  JOIN Payment ON courier.CourierID = payment.CourierID  
11  WHERE payment.PaymentDate > 2024-04-15  
12  GROUP BY courier.CourierID  
13  HAVING SUM(payment.Amount) > 1000;  
14
```

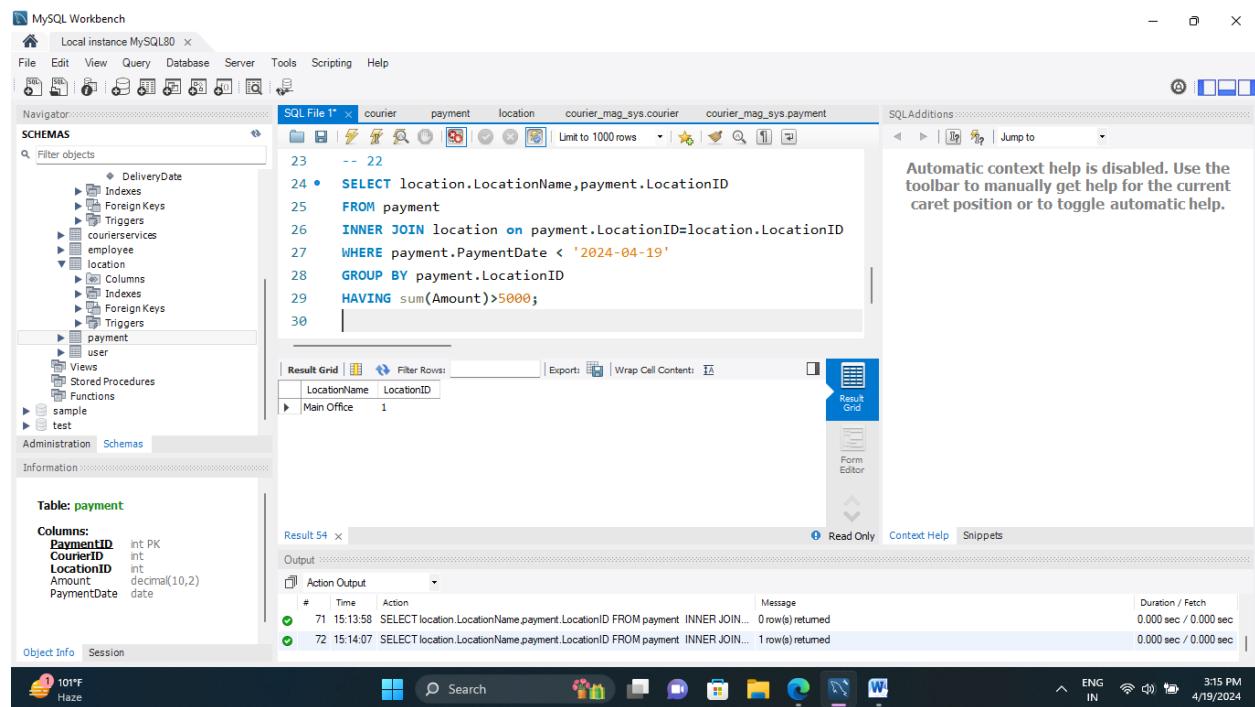
erID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumbr
	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123

Output:

#	Time	Action	Message	Duration / Fetch
16	14:09:44	SELECT courier.* FROM courier JOIN Payment ON courier.CourierID = payment.CourierID WHERE payment.PaymentDate > 2024-04-15 GROUP BY courier.CourierID HAVING SUM(payment.Amount) > 1000;	1 row(s) returned	0.000 sec / 0.000 sec
17	14:17:56	SELECT courier.* FROM courier JOIN Payment ON courier.CourierID = payment.CourierID WHERE payment.PaymentDate > 2024-04-15 GROUP BY courier.CourierID HAVING SUM(payment.Amount) > 1000;	1 row(s) returned	0.015 sec / 0.000 sec

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

```
SELECT location.LocationName,payment.LocationID
FROM payment
INNER JOIN location on payment.LocationID=location.LocationID
WHERE payment.PaymentDate < '2024-04-19'
GROUP BY payment.LocationID
HAVING sum(Amount)>5000;
```



The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Schemas Navigator:** Shows the database structure with Schemas like courier, payment, location, courier_mag_sys.courier, and courier_mag_sys.payment.
- SQL Editor:** Contains the query:

```
23 -- 22
24 • SELECT location.LocationName,payment.LocationID
25 FROM payment
26 INNER JOIN location on payment.LocationID=location.LocationID
27 WHERE payment.PaymentDate < '2024-04-19'
28 GROUP BY payment.LocationID
29 HAVING sum(Amount)>5000;
30
```
- Result Grid:** Displays the result of the query:

LocationName	LocationID
Main Office	1
- Output Window:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
71	15:13:58	SELECT location.LocationName,payment.LocationID FROM payment INNER JOIN...	0 row(s) returned	0.000 sec / 0.000 sec
72	15:14:07	SELECT location.LocationName,payment.LocationID FROM payment INNER JOIN...	1 row(s) returned	0.000 sec / 0.000 sec
- System Tray:** Shows battery level (101%), network status (Haze), and system time (3:15 PM IN 4/19/2024).

23. Retrieve Payments with Courier Information

```
SELECT courier.*,p.LocationID,p.Amount,p.PaymentDate
```

```
FROM courier
```

```
INNER JOIN payment p on courier.CourierID=p.CourierID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
65  FROM courier
66  GROUP BY SenderName;
67
68  -- 23
69  ●  SELECT courier.*,p.LocationID,p.Amount,p.PaymentDate
70  FROM courier
71  INNER JOIN payment p on courier.CourierID=p.CourierID;
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, and DeliveryDate. The data is as follows:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	NULL

- Action Output:** Shows the history of actions taken by the user, including the execution of the query and other database operations.
- System Bar:** Includes icons for weather (93°F, Sunny), search, file, and various application icons.
- Bottom Bar:** Shows the date and time (4/21/2024, 2:46 PM).

24. Retrieve Payments with Location Information

```
SELECT location.* , p.CourierID , p.Amount , p.PaymentDate
```

```
FROM location
```

```
INNER JOIN payment p ON location.LocationID = p.LocationID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the following SQL code:

```
70  FROM courier
71  INNER JOIN payment p ON courier.CourierID=p.CourierID;
72
73  -- 24
74  • SELECT location.* , p.CourierID , p.Amount , p.PaymentDate
75  FROM location
76  INNER JOIN payment p ON location.LocationID=p.LocationID;
```
- Result Grid:** Displays the results of the query, showing 8 rows of data from the location and payment tables joined by LocationID. The columns are LocationID, LocationName, Address, CourierID, Amount, and PaymentDate.
- Action Output:** Shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
9	14:44:25	SELECT courier.* , p.CourierID , p.LocationID , p.Amount , p.PaymentDate FROM courier	Error Code: 1054. Unknown column 'payment.CourierID' in 'on clause'	0.000 sec
10	14:44:57	SELECT courier.* , p.CourierID , p.LocationID , p.Amount , p.PaymentDate FROM courier	... 10 row(s) returned	0.000 sec / 0.000 sec
11	14:46:11	SELECT courier.* , p.LocationID , p.Amount , p.PaymentDate FROM courier INNER JOIN payment p ON location.LocationID = p.LocationID	10 row(s) returned	0.000 sec / 0.000 sec
12	14:48:17	SELECT location.* , p.CourierID , p.Amount , p.PaymentDate FROM location INNER JOIN payment p ON location.LocationID = p.LocationID	10 row(s) returned	0.016 sec / 0.000 sec
- System Status:** Shows the system status bar at the bottom with the date (4/21/2024), time (2:48 PM), battery level (1%), and network connection.

25. Retrieve Payments with Courier and Location Information

```
SELECT *  
FROM Payment p  
JOIN Courier c ON p.CourierID = c.CourierID  
JOIN Location l ON p.LocationID = l.LocationID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the schema `courier_mag_sys` with tables: `courier`, `courierservices`, `employee`, `location`, `payment`, and `user`.
- Query Editor:** Displays the SQL query:

```
75  FROM location  
76    INNER JOIN payment p ON location.LocationID=p.LocationID;  
77  
78  -- 25  
79  •  SELECT *  
80  FROM Payment p  
81  JOIN Courier c ON p.CourierID = c.CourierID  
82  JOIN Location l ON p.LocationID = l.LocationID;
```
- Result Grid:** Shows the results of the query in a tabular format. The columns are: PaymentID, CourierID, LocationID, Amount, PaymentDate, CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress. The data is as follows:

PaymentID	CourierID	LocationID	Amount	PaymentDate	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress
1	1	1	1500.00	2024-04-18	1	John Doe	123 Main St	Jane Smith	456 Elm St
2	2	2	20.00	2024-04-17	2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St
3	3	3	25.00	2024-04-16	3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St
4	4	4	30.00	2024-04-15	4	Grace Lee	404 Birch St	David Miller	505 Walnut St
5	5	5	35.00	2024-04-14	5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St
6	6	6	40.00	2024-04-13	6	John Doe	123 Main St	Jane Smith	456 Elm St
7	7	7	45.00	2024-04-12	7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St
8	8	8	50.00	2024-04-11	8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St
9	1	1	55.00	2024-04-10	1	John Doe	123 Main St	Jane Smith	456 Elm St
10	10	10	60.00	2024-04-09	10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St

- Output:** Shows the action output with two entries:
 - 9 14:44:25 SELECT courier.* , p.CourierID,p.LocationID,p.Amount,p.PaymentDate FROM courier... Error Code: 1054. Unknown column 'payment.CourierID' in 'on clause' 0.000 sec
 - 10 14:44:57 SELECT courier.* , p.CourierID,p.LocationID,p.Amount,p.PaymentDate FROM courier... 10 row(s) returned 0.000 sec / 0.000 sec
- System Bar:** Shows the system status with icons for battery, signal, and date/time (4/21/2024, 2:58 PM).

26. List all payments with courier details

SELECT *

FROM payment p

JOIN courier c ON p.CourierID = c.CourierID;

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
83
84 -- 26
85
86 • SELECT *
87   FROM payment p
88   JOIN courier c ON p.CourierID = c.CourierID;
89
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are: PaymentID, CourierID, LocationID, Amount, PaymentDate, CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress. The data is as follows:

PaymentID	CourierID	LocationID	Amount	PaymentDate	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress
1	1	1	1500.00	2024-04-18	1	John Doe	123 Main St	Jane Smith	456 Elm St
2	2	2	200.00	2024-04-17	2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St
3	3	3	25.00	2024-04-16	3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St
4	4	4	30.00	2024-04-15	4	Grace Lee	404 Birch St	David Miller	505 Walnut St
5	5	5	35.00	2024-04-14	5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St
6	6	6	40.00	2024-04-13	6	John Doe	123 Main St	Jane Smith	456 Elm St
7	7	7	45.00	2024-04-12	7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St
8	8	8	50.00	2024-04-11	8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St
9	1	1	55.00	2024-04-10	1	John Doe	123 Main St	Jane Smith	456 Elm St
10	10	10	60.00	2024-04-09	10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St

27. Total payments received for each courier

```
SELECT p.CourierID,SUM(p.Amount)
```

```
FROM payment p
```

```
GROUP BY p.CourierID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
88 JOIN courier c ON p.CourierID = c.CourierID;
89
90 -- 27
91 • SELECT p.CourierID,SUM(p.Amount)
92 FROM payment p
93 GROUP BY p.CourierID;
```
- Result Grid:** Displays the results of the query:

CourierID	SUM(p.Amount)
1	1555.00
2	20.00
3	25.00
4	30.00
5	35.00
6	40.00
7	45.00
8	50.00
9	60.00
- Action Output:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
15	14:54:47	SELECT courier.*,location.*,p.Amount,p.PaymentDate FROM courier INNER JOIN...	10 row(s) returned	0.000 sec / 0.000 sec
16	14:56:40	SELECT * FROM Payment p JOIN Courier c ON p.CourierID = c.CourierID JOIN Loc...	10 row(s) returned	0.000 sec / 0.000 sec
17	15:00:17	SELECT * FROM payment p JOIN courier c ON p.CourierID = c.CourierID LIMIT 0,1...	10 row(s) returned	0.000 sec / 0.000 sec
18	15:07:41	SELECT SUM(p.Amount) FROM payment p GROUP BY p.CourierID LIMIT 0,1000	9 row(s) returned	0.000 sec / 0.000 sec
19	15:08:38	SELECT COUNT(CourierID) In Amount FROM payment p GROUP BY CourierID LIMIT 0,1	Error Code: 1055. Expression #2 of SELECT list is not in GROUP BY clause and contains...	0.000 sec
- System Status:** Shows the system status bar at the bottom.

28. List payments made on a specific date

SELECT p.*

FROM payment p

WHERE p.PaymentDate='2024-04-18';

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
94 -- 28
95 •   SELECT p.*
96   FROM payment p
97   WHERE p.PaymentDate='2024-04-18';
98 -- 29
99 •   SELECT Payment.*,courier.*
100  FROM payment
101
```
- Result Grid:** Displays the results of the query:

PaymentID	CourierID	LocationID	Amount	PaymentDate
1	NULL	NULL	1500.00	NULL
*	NULL	NULL	NULL	NULL
- Action Output:** Shows the history of actions taken:

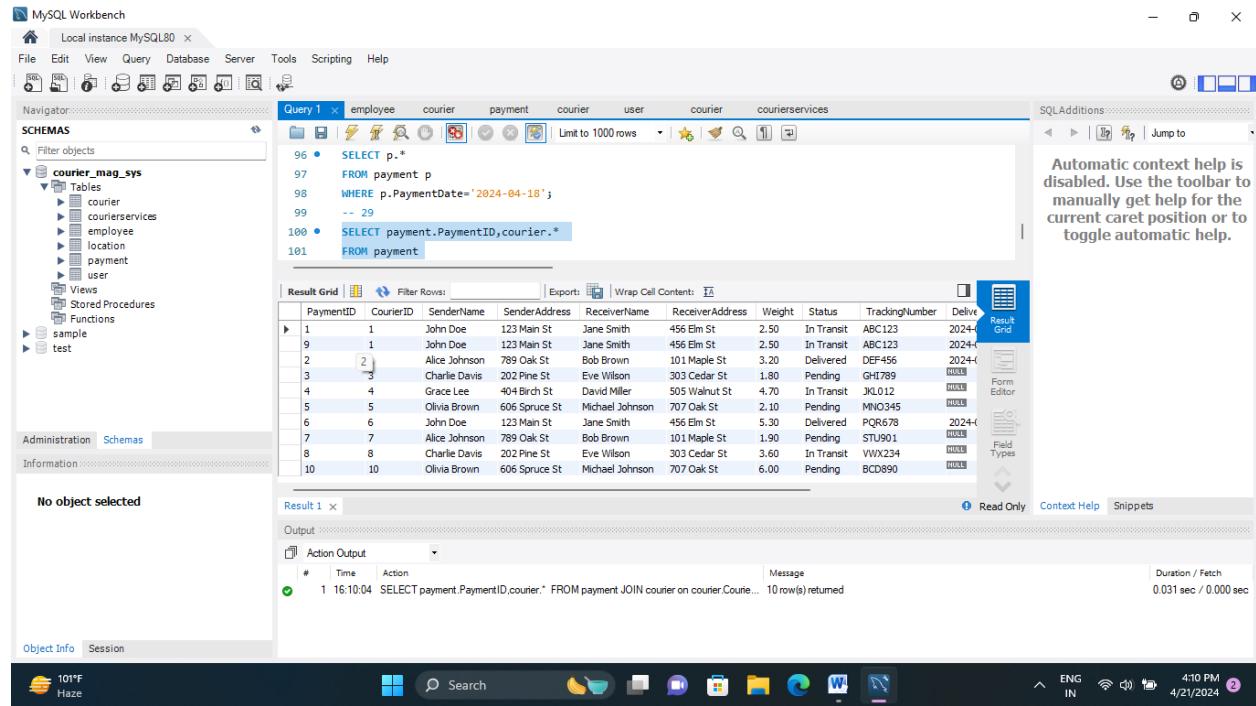
#	Time	Action	Message	Duration / Fetch
22	15:16:31	SELECT courier(SenderName.payment.* FROM payment p WHERE p.PaymentDate...	Error Code: 1051. Unknown table 'payment'.	0.000 sec
23	15:18:20	SELECT p.* FROM payment p WHERE p.PaymentDate='21-04-2024' LIMIT 0, 1000	Error Code: 1525. Incorrect DATE value: '21-04-2024'	0.015 sec
24	15:18:49	SELECT p.* FROM payment p WHERE p.PaymentDate='2024-04-21' LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
25	15:19:13	SELECT p.* FROM payment p WHERE p.PaymentDate='2024-04-18' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
- System Bar:** Shows the system tray with icons for battery, signal, volume, and date/time (3:19 PM, 4/21/2024).

29. Get Courier Information for Each Payment

```
SELECT payment.PaymentID,courier.*
```

```
FROM payment
```

```
JOIN courier on courier.CourierID=payment.CourierID;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
96 •  SELECT p.*  
97   FROM payment p  
98  WHERE p.PaymentDate='2024-04-18';  
99  -- 29  
100 •  SELECT payment.PaymentID,courier.*  
101   FROM payment
```
- Result Grid:** Displays the query results in a tabular format. The columns are: PaymentID, CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, and Deliv. The data is as follows:

PaymentID	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	Deliv.
1	1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-4-18 16:10:04
2	1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-4-18 16:10:04
3	2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-4-18 16:10:04
4	3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL
5	4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL
6	5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	NULL
7	6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-4-18 16:10:04
8	7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	NULL
9	8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	NULL
10	10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	NULL

30. Get Payment Details with Location

```
SELECT p.* , l.LocationID,l.LocationName  
FROM payment p  
JOIN location l ON p.LocationID = l.LocationID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
104 -- 30  
105 •   SELECT p.* , l.LocationID,l.LocationName  
106 FROM payment p  
107 JOIN location l ON p.LocationID = l.LocationID;  
108
```
- Result Grid:** Displays the query results in a tabular format. The columns are: PaymentID, CourierID, LocationID, Amount, PaymentDate, LocationID, and LocationName. The data is as follows:

PaymentID	CourierID	LocationID	Amount	PaymentDate	LocationID	LocationName
1	1	1	1500.00	2024-04-18	1	Main Office
2	2	2	20.00	2024-04-17	2	Warehouse
3	3	3	25.00	2024-04-16	3	Distribution Center
4	4	4	30.00	2024-04-15	4	Branch Office
5	5	5	35.00	2024-04-14	5	Hub Center
6	6	6	40.00	2024-04-13	6	Service Center
7	7	7	45.00	2024-04-12	7	Regional Office
8	8	8	50.00	2024-04-11	8	Dispatch Center
9	1	1	55.00	2024-04-10	1	Main Office
10	10	10	60.00	2024-04-09	10	Terminal

- Action Output:** Shows the log of actions taken:

#	Time	Action	Message	Duration / Fetch
16	16:20:43	SELECT p.* , l.LocationID,l.LocationName FROM payment p JOIN location l ON p.LocationID = l.LocationID	Error Code: 1054. Unknown column 'l.LocationID' in 'on clause'	0.000 sec
17	16:20:45	SELECT p.* , l.LocationID,l.LocationName FROM payment p JOIN location l ON p.LocationID = l.LocationID	10 row(s) returned	0.000 sec / 0.000 sec
18	16:20:58	SELECT p.* , l.LocationID,l.LocationName FROM payment p JOIN location l ON p.LocationID = l.LocationID	10 row(s) returned	0.000 sec / 0.000 sec

31. Calculating Total Payments for Each Courier

```
SELECT p.CourierID, SUM(p.Amount) AS TotalPayments,c.*
```

```
FROM Payment p
```

```
JOIN Courier c ON p.CourierID = c.CourierID
```

```
GROUP BY p.CourierID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Local instance MySQL80, Schemas (courier_mag_sys), Tables (courier, courierservices, employee, location, payment, user).
- Query Editor:** Query 1, SQL code:

```
108 -- 31
109
110 • SELECT p.CourierID, SUM(p.Amount) AS TotalPayments,c.*
111   FROM Payment p
112   JOIN Courier c ON p.CourierID = c.CourierID
113   GROUP BY p.CourierID;
114
115
```
- Result Grid:** Shows the results of the query. The columns are CourierID, TotalPayments, CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, and Tracking. The data is as follows:

CourierID	TotalPayments	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	Tracking
1	1555.00	1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123
2	20.00	2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456
3	25.00	3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789
4	30.00	4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012
5	35.00	5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345
6	40.00	6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PRQ678
7	45.00	7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901
8	50.00	8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234
10	60.00	10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD990

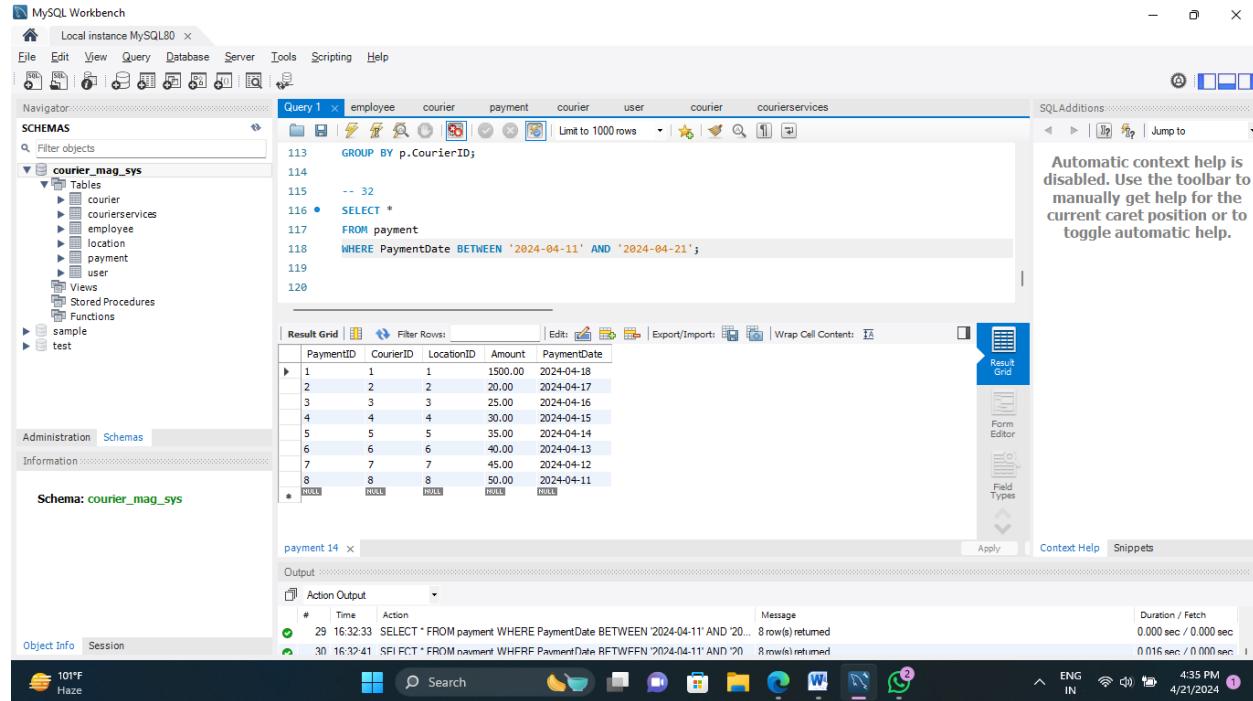
- Output:** Action Output, showing two log entries:

 - 20 16:23:04 SELECT * FROM courier_mag_sys.courier LIMIT 0, 1000 | 10 row(s) returned | 0.000 sec / 0.000 sec
 - 21 16:25:58 SELECT COUNT(CourierID) AS TotalPayments,c.* FROM Payment p JOIN Courier c ON p.CourierID = c.CourierID | 9 row(s) returned | 0.000 sec / 0.000 sec

- Bottom Bar:** 101°F Haze, Search, various icons, ENG IN, 4:30 PM, 4/21/2024.

32. List Payments Within a Date Range

```
SELECT *  
FROM payment  
WHERE PaymentDate BETWEEN '2024-04-11' AND '2024-04-21';
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query:

```
113 GROUP BY p.CourierID;  
114 -- 32  
116 • SELECT *  
117 FROM payment  
118 WHERE PaymentDate BETWEEN '2024-04-11' AND '2024-04-21';  
119  
120
```
- Result Grid:** Displays the results of the query, showing 32 rows of payment data. The columns are: PaymentID, CourierID, LocationID, Amount, and PaymentDate. The data is as follows:

PaymentID	CourierID	LocationID	Amount	PaymentDate
1	1	1	1500.00	2024-04-18
2	2	2	20.00	2024-04-17
3	3	3	25.00	2024-04-16
4	4	4	30.00	2024-04-15
5	5	5	35.00	2024-04-14
6	6	6	40.00	2024-04-13
7	7	7	45.00	2024-04-12
8	8	8	50.00	2024-04-11
*	NULL	NULL	NULL	NULL

- Output Window:** Shows the execution log:

```
payment 14 x  
Output  
Action Output  
# Time Action Message Duration / Fetch  
29 16:32:33 SELECT * FROM payment WHERE PaymentDate BETWEEN '2024-04-11' AND '20... 8 row(s) returned 0.000 sec / 0.000 sec  
30 16:32:41 SPI_FCT * FROM payment WHERE PaymentDate BETWEEN '2024-04-11' AND '20... 8 row(s) returned 0.016 sec / 0.000 sec
```

33. Retrieve a list of all users and their corresponding courier records, including cases where there are no matches on either side

```
SELECT *
```

```
FROM courier
```

```
LEFT JOIN user ON courier.user_id = user.UserID
```

```
UNION
```

```
SELECT *
```

```
FROM courier
```

```
RIGHT JOIN user ON courier.user_id = user.UserID;
```

```
MySQL Workbench - Local instance MySQL80 - Query 1
```

```
123 -- 33
124
125 • SELECT *
126 FROM courier
127 LEFT JOIN user ON courier.user_id = user.UserID
128 UNION
129 • SELECT *
130 FROM courier
131 RIGHT JOIN user ON courier.user_id = user.UserID;
132 -- 34
133 • SELECT *
```

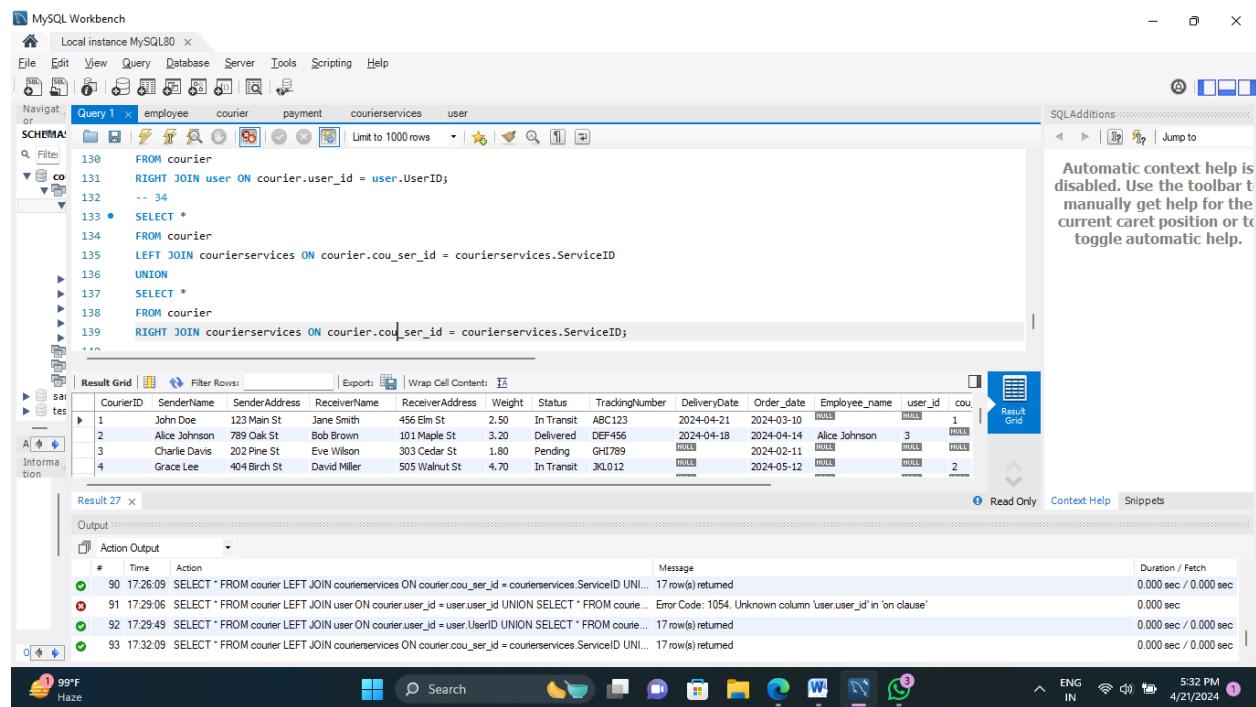
CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name	user_id	cou
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL	1	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	Alice Johnson	3	NULL
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	2024-02-11	2024-02-11	NULL	NULL	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	2024-05-12	2024-05-12	NULL	2	NULL

```
Result 26 x
Output
Action Output
# Time Action Message Duration / Fetch
89 17:26:06 SELECT * FROM courier FULL JOIN courierservices ON courier.cou_ser_id=courierservices.ServiceID LIMIT 1 Error Code: 1054. Unknown column 'courier.cou_ser_id' in 'on clause' 0.000 sec
90 17:26:09 SELECT * FROM courier LEFT JOIN courierservices ON courier.cou_ser_id = courierservices.ServiceID UNION ALL 17 row(s) returned 0.000 sec / 0.000 sec
91 17:29:06 SELECT * FROM courier LEFT JOIN user ON courier.user_id = user.UserID UNION SELECT * FROM courier WHERE 0 Error Code: 1054. Unknown column 'user.UserID' in 'on clause' 0.000 sec
92 17:29:49 SELECT * FROM courier LEFT JOIN user ON courier.user_id = user.UserID UNION SELECT * FROM courier WHERE 0 17 row(s) returned 0.000 sec / 0.000 sec
```

99% Haze ENG IN 5:31 PM 4/21/2024

34. Retrieve a list of all couriers and their corresponding services, including cases where there are no matches on either side

```
SELECT *  
FROM courier  
  
LEFT JOIN courierservices ON courier.cou_ser_id = courierservices.ServiceID  
  
UNION  
  
SELECT *  
FROM courier  
  
RIGHT JOIN courierservices ON courier.cou_ser_id = courierservices.ServiceID;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL code for the query.
- Result Grid:** Displays the results of the query. The columns are: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, Order_date, Employee_name, user_id, cou_ser_id, and ServiceID. The data is as follows:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name	user_id	cou_ser_id	ServiceID
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL	NULL	1	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	Alice Johnson	3	NULL	NULL
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL	2024-02-11	NULL	NULL	NULL	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL	2024-05-12	NULL	NULL	2	NULL

- Action Output:** Shows the log of actions taken by the system, including the execution of the query and the error message for the failed UNION operation.

35. Retrieve a list of all employees and their corresponding payments, including cases where there are no matches on either side

```
SELECT e.* , p.*  
FROM employee e  
LEFT JOIN courier ON courier.emp_id = e.EmployeeID  
LEFT JOIN payment p ON courier.CourierID = p.CourierID  
UNION  
SELECT e.* , p.*  
FROM employee e  
RIGHT JOIN courier ON courier.emp_id = e.EmployeeID  
RIGHT JOIN payment p ON courier.CourierID = p.CourierID
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL code for the query.
- Result Grid:** Displays the resulting data from the query. The columns are EmployeeID, Name, Email, ContactNumber, Role, Salary, PaymentID, CourierID, LocationID, Amount, and PaymentDate. The data includes rows for various employees and their corresponding payments or lack thereof.
- Output Panel:** Shows the execution log with one row returned in 0.016 sec / 0.000 sec.
- System Bar:** Includes weather information (93°F, mostly cloudy), system icons (Search, File Explorer, Task View, etc.), and system status (ENG IN, 7:02 PM, 4/21/2024).

EmployeeID	Name	Email	ContactNumber	Role	Salary	PaymentID	CourierID	LocationID	Amount	PaymentDate
1	John Smith	john.smith@example.com	1112223333	Manager	60000.00	NULL	NULL	NULL	NULL	NULL
2	Alice Johnson	alice.johnson@example.com	4445556666	Courier	40000.00	NULL	NULL	NULL	NULL	NULL
3	Bob Brown	bob.brown@example.com	7778889999	Courier	40000.00	7	7	7	45.00	2024-04-12
3	Bob Brown	bob.brown@example.com	7778889999	Courier	40000.00	6	6	6	40.00	2024-04-13
3	Bob Brown	bob.brown@example.com	7778889999	Courier	40000.00	2	2	2	20.00	2024-04-17
4	Eve Wilson	eve.wilson@example.com	1234567890	Customer Service	35000.00	NULL	NULL	NULL	NULL	NULL
5	Grace Lee	grace.lee@example.com	9876543210	Customer Service	35000.00	8	8	8	50.00	2024-04-11
6	David Miller	david.miller@example.com	5551234567	Courier	40000.00	NULL	NULL	NULL	NULL	NULL
7	Olivia Brown	olivia.brown@example.com	9999887777	Customer Service	35000.00	NULL	NULL	NULL	NULL	NULL
8	Michael Johnson	michael.johnson@example.com	6667778888	Courier	40000.00	NULL	NULL	NULL	NULL	NULL
9	Charlie Davis	charlie.davis@example.com	2223334444	Courier	40000.00	10	10	10	60.00	2024-04-09

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

```
SELECT *
```

```
FROM user
```

```
CROSS JOIN courierservices;
```

The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query is:

```
SELECT *  
FROM user  
CROSS JOIN courierservices;
```

The result grid displays 100 rows of data from the cross join of the 'user' and 'courierservices' tables. The columns are: UserID, Name, Email, Password, ContactNumber, Address, ServiceID, ServiceName, and Cost. The data includes various user names like Alice Johnson, Jane Smith, John Doe, etc., and service names like Priority Delivery, Two-Day Delivery, etc.

UserID	Name	Email	Password	ContactNumber	Address	ServiceID	ServiceName	Cost
3	Alice Johnson	alice@example.com	qerty123	5551234567	789 Oak St	9	Priority Delivery	25.00
2	Jane Smith	jane@example.com	pass321word	9876543210	456 Elm St	9	Priority Delivery	25.00
1	John Doe	john@example.com	password123	1234567890	123 Main St	9	Priority Delivery	25.00
10	Michael Johnson	michael@example.com	mypass123	3334445555	707 Oak St	10	Two-Day Delivery	18.00
9	Olivia Brown	olivia@example.com	passpass	9998887777	606 Spruce St	10	Two-Day Delivery	18.00
8	David Miller	david@example.com	securepass	8887776666	505 Walnut St	10	Two-Day Delivery	18.00
7	Grace Lee	grace@example.com	password456	7778889999	404 Birch St	10	Two-Day Delivery	18.00
6	Eve Wilson	eve@example.com	p@sswOrd	4445556666	303 Cedar St	10	Two-Day Delivery	18.00
5	Charlie Davis	charlie@example.com	letmen321	1112223333	202 Pine St	10	Two-Day Delivery	18.00
4	Bob Brown	bob@example.com	abc123def	5559876543	101 Maple St	10	Two-Day Delivery	18.00
3	Alice Johnson	alice@example.com	qerty123	5551234567	789 Oak St	10	Priority Delivery	25.00
2	Jane Smith	jane@example.com	pass321word	9876543210	456 Elm St	10	Two-Day Delivery	18.00
1	John Doe	john@example.com	password123	1234567890	123 Main St	10	Two-Day Delivery	18.00

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

```
SELECT *  
FROM employee  
CROSS JOIN location;
```

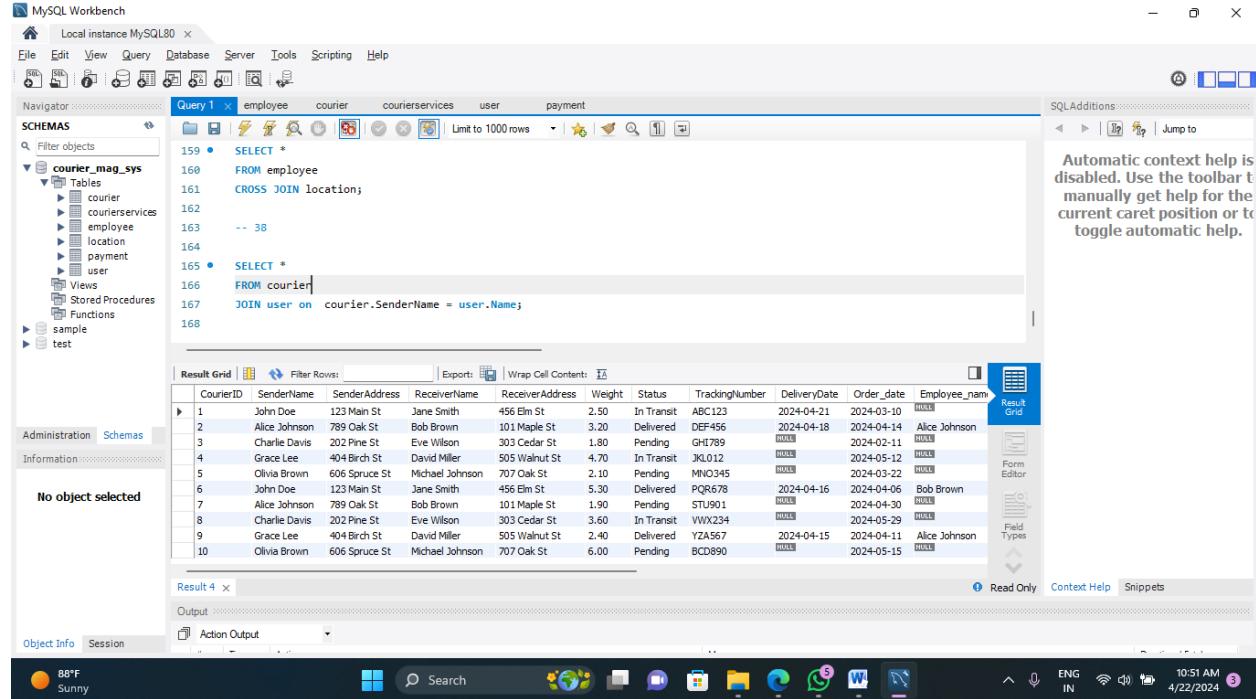
The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the schema `courier_mag_sys` with tables: `courier`, `courierservices`, `employee`, `location`, `payment`, and `user`.
- Query Editor:** Contains the following SQL code:

```
155  FROM user  
156  CROSS JOIN courierservices;  
157  
158  -- 37  
159  •  SELECT *  
160  FROM employee  
161  CROSS JOIN location;
```
- Result Grid:** Displays the results of the query. The columns are: EmployeeID, Name, Email, ContactNumber, Role, Salary, LocationID, LocationName, and Address. The data shows multiple rows for each employee, indicating all possible combinations with the `location` table.
- Output:** Shows the action output of the query execution. It includes the time (19:12:53), the query text, the number of rows returned (100 row(s) returned), and the duration (0.000 sec / 0.000 sec).
- System Bar:** Includes icons for weather (92°F, Mostly cloudy), search, and system status (ENG IN, 7:20 PM, 4/21/2024).

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

```
SELECT *  
FROM courier  
LEFT JOIN user ON courier.SenderName = user.Name;
```



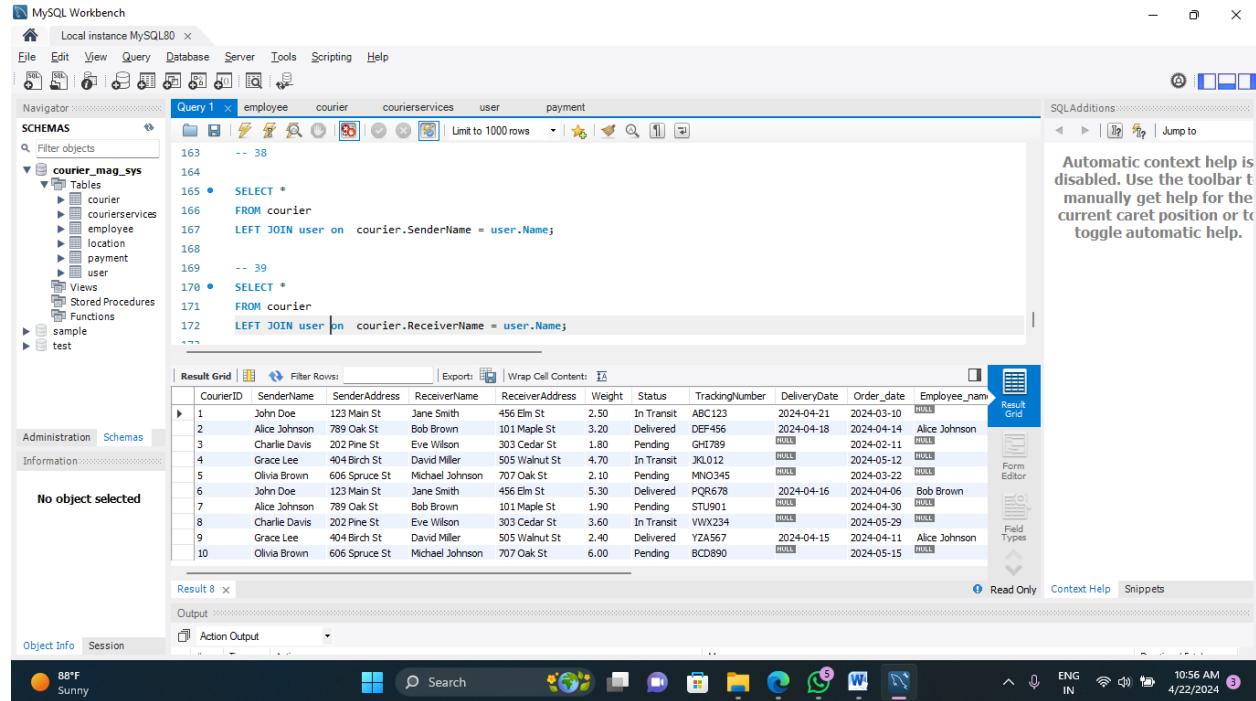
The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Displays the SQL code for the query.
- Result Grid:** Shows the output of the query, listing 10 rows of courier data with their corresponding sender information.
- Information Bar:** Includes a weather widget (88°F, Sunny), system icons (Search, Home, etc.), and system status (ENG IN, 10:51 AM, 4/22/2024).

CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	Alice Johnson	NULL
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	2024-02-11	2024-02-11	NULL	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	2024-05-12	2024-05-12	NULL	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	2024-03-22	2024-03-22	NULL	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-06	Bob Brown	NULL
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	2024-04-30	2024-04-30	NULL	NULL
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	2024-05-29	2024-05-29	NULL	NULL
9	Grace Lee	404 Birch St	David Miller	505 Walnut St	2.40	Delivered	YZA567	2024-04-15	2024-04-11	Alice Johnson	NULL
10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	2024-05-15	2024-05-15	NULL	NULL

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

```
SELECT *  
FROM courier  
LEFT JOIN user ON courier.ReceiverName = user.Name;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the schema `courier_mag_sys` with tables `courier`, `courierservices`, `employee`, `location`, `payment`, and `user`.
- Query Editor:** Displays the SQL query:

```
-- 38  
165 • SELECT *  
166   FROM courier  
167   LEFT JOIN user ON courier.SenderName = user.Name;  
168  
-- 39  
170 • SELECT *  
171   FROM courier  
172   LEFT JOIN user ON courier.ReceiverName = user.Name;  
173
```
- Result Grid:** Shows the results of the second query, which includes columns: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, Order_date, Employee_name. The data is as follows:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	NULL
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	2024-02-11	2024-02-11	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	2024-05-12	2024-05-12	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	2024-03-22	2024-03-22	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-06	Bob Brown
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	2024-04-30	2024-04-30	NULL
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	2024-05-29	2024-05-29	NULL
9	Grace Lee	404 Birch St	David Miller	505 Walnut St	2.40	Delivered	YZA567	2024-04-15	2024-04-11	Alice Johnson
10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	2024-05-15	2024-05-15	NULL

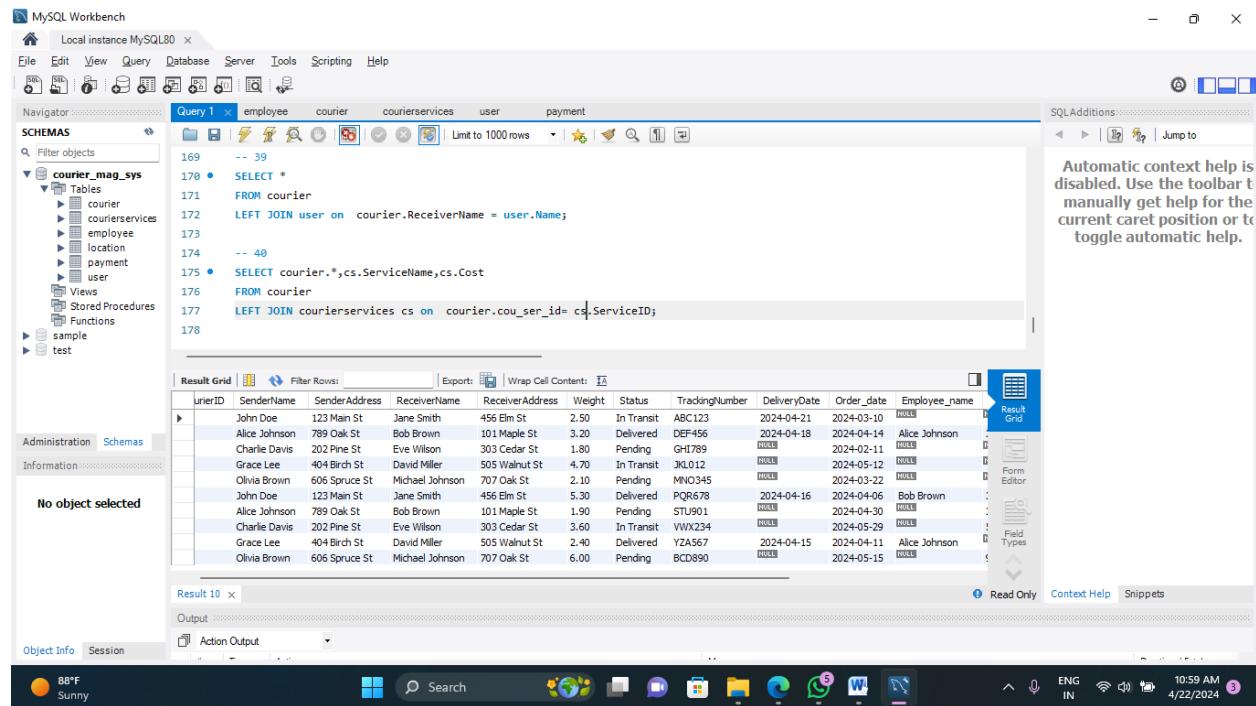
The status column shows values like `In Transit`, `Delivered`, and `Pending`. The delivery date is listed under `DeliveryDate` and the order date under `Order_date`. The employee name is listed under `Employee_name`.

40. Retrieve a list of couriers along with the courier service details (if available):

```
SELECT courier.* , cs.ServiceName , cs.Cost
```

```
FROM courier
```

```
LEFT JOIN courierservices cs ON courier.cou_ser_id = cs.ServiceID;
```



The screenshot shows the MySQL Workbench interface with a query editor window. The query is:

```
-- 39
178 • SELECT *
179   FROM courier
180     LEFT JOIN user ON courier.ReceiverName = user.Name;
181
-- 40
175 • SELECT courier.* , cs.ServiceName , cs.Cost
176   FROM courier
177     LEFT JOIN courierservices cs ON courier.cou_ser_id = cs.ServiceID;
178
```

The results grid displays the following data:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	Alice Johnson
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL	2024-02-11	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL	2024-05-12	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	NULL	2024-03-22	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-06	Bob Brown
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	NULL	2024-04-30	NULL
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	NULL	2024-05-29	NULL
9	Grace Lee	404 Birch St	David Miller	505 Walnut St	2.40	Delivered	YZA567	2024-04-15	2024-04-11	Alice Johnson
10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	NULL	2024-05-15	NULL

41. Retrieve a list of employees and the number of couriers assigned to each employee:

```
SELECT e.* , COUNT(c.emp_id) AS 'No of Couriers'  
FROM employee e  
LEFT JOIN courier c ON c.emp_id = e.EmployeeID  
GROUP BY e.EmployeeID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database schema with the `courier_mag_sys` database selected, containing tables like `courier`, `courierservices`, `employee`, `location`, `payment`, and `user`.
- Query Editor:** Displays the SQL query from step 41.
- Result Grid:** Shows the output of the query, listing 8 employees with their details and the count of couriers assigned to them.
- Table Information:** Shows the structure of the `courier` table.
- System Bar:** Includes system status (86°F, High winds soon), search, and various application icons.

EmployeeID	Name	Email	ContactNumber	Role	Salary	No of Couriers
1	John Smith	john.smith@example.com	1112223333	Manager	60000.00	0
2	Alice Johnson	alice.johnson@example.com	4445556666	Courier	40000.00	0
3	Bob Brown	bob.brown@example.com	7778889999	Courier	40000.00	3
4	Eve Wilson	eve.wilson@example.com	1234567890	Customer Service	35000.00	0
5	Grace Lee	grace.lee@example.com	9876543210	Customer Service	35000.00	1
6	David Miller	david.miller@example.com	5551234567	Courier	40000.00	0
7	Olivia Brown	olivia.brown@example.com	9998887777	Customer Service	35000.00	0
8	Michael Johnson	michael.johnson@example.com	6667778888	Courier	40000.00	0

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

```
SELECT l.* ,SUM(p.Amount) as 'Total Payment '
```

```
FROM location l
```

```
LEFT JOIN payment p on p.LocationID=l.LocationID
```

```
GROUP BY l.LocationID;
```

The screenshot shows the MySQL Workbench interface with a query editor window titled 'Query 1'. The query is:

```
-- 42  
186 • SELECT l.* ,SUM(p.Amount) as 'Total Payment '  
187 FROM location l  
188 LEFT JOIN payment p on p.LocationID=l.LocationID  
189 GROUP BY l.LocationID;  
190  
-- 43
```

The results are displayed in a 'Result Grid' table:

LocationID	LocationName	Address	Total Payment
1	Main Office	123 Office St	1555.00
2	Warehouse	456 Warehouse St	20.00
3	Distribution Center	789 Distribution St	25.00
4	Branch Office	101 Branch St	30.00
5	Hub Center	202 Hub St	35.00
6	Service Center	303 Service St	40.00
7	Regional Office	404 Regional St	45.00
8	Dispatch Center	505 Dispatch St	50.00
9	Sorting Facility	606 Sorting St	NULL
10	Terminal	707 Terminal St	60.00

The status bar at the bottom shows the weather as 86°F Mostly sunny, the system time as 11:31 AM 4/22/2024, and network connectivity.

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

```
SELECT SenderName, GROUP_CONCAT(CourierID) as 'Courier Ids', count(CourierID) as "Same  
Sender Cnt"
```

```
FROM courier
```

```
GROUP BY SenderName;
```

The screenshot shows the MySQL Workbench interface with a query editor window. The query is:

```
-- 43  
192 • SELECT SenderName, GROUP_CONCAT(CourierID) as 'Courier Ids', count(CourierID) as "Same  
193 FROM courier  
194 GROUP BY SenderName;  
195  
-- 44  
196 SELECT Role, GROUP_CONCAT(Name) AS Employees
```

The results grid displays the following data:

SenderId	Courier Ids	Same Sender Cnt
Alice Johnson	2,7	2
Charlie Davis	3,8	2
Grace Lee	4,9	2
John Doe	1,6	2
Olivia Brown	5,10	2

Below the results, there is a table information panel for the 'location' table:

Table: location

Columns:

LocationID	int PK
LocationName	varchar
Address	text

Result 35 x

Action Output

Time Action Message Duration / Fetch
54 11:43:41 SELECT SenderName, GROUP_CONCAT(CourierID) as 'Courier Ids', count(CourierID) as "Same
5 rows(s) returned 0.000 sec / 0.000 sec

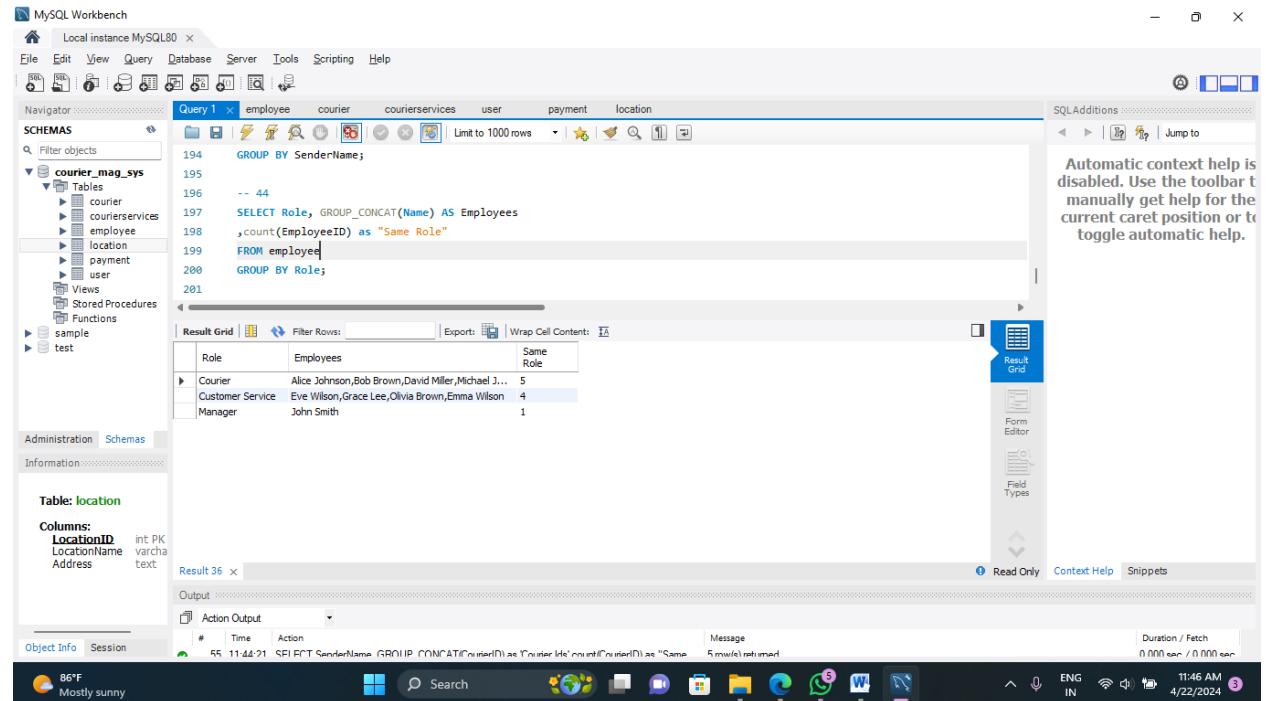
Object Info Session

86°F Mostly sunny Search

ENG IN 11:45 AM 4/22/2024

44. List all employees who share the same role.

```
SELECT Role, GROUP_CONCAT(Name) AS Employees  
,count(EmployeeID) as "Same Role"  
FROM employee  
GROUP BY Role;
```



The screenshot shows the MySQL Workbench interface with a query editor window. The query is:

```
194    GROUP BY SenderName;  
195    -- 44  
196    SELECT Role, GROUP_CONCAT(Name) AS Employees  
197        ,count(EmployeeID) as "Same Role"  
198    FROM employee  
199    GROUP BY Role;  
200
```

The result grid displays the following data:

Role	Employees	Same Role
Courier	Alice Johnson, Bob Brown, David Miller, Michael Scott	5
Customer Service	Eve Wilson, Grace Lee, Olivia Brown, Emma Wilson	4
Manager	John Smith	1

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

```
SELECT GROUP_CONCAT(PaymentID) AS "Payment ID's ",COUNT(payment.Amount) as "Payment Count"
```

```
FROM payment
```

```
GROUP BY LocationID
```

The screenshot shows the MySQL Workbench interface with a query editor window titled 'Query 1'. The code entered is:

```
199 FROM employee
200 GROUP BY Role;
201
202 -- 45
203 • SELECT GROUP_CONCAT(PaymentID) AS "Payment ID's ",COUNT(payment.Amount) as "Payment Count"
204 FROM payment
205 GROUP BY LocationID
206
```

The result grid displays the following data:

Payment ID's	Payment Count
1,9	2
2	1
3	1
4	1
5	1
6	1
7	1
8	1
10	1

The status bar at the bottom shows the following information:

- Object Info: Session
- Time: 57 11:49:28
- Action: SELECT * FROM courier_mag.payment LIMIT 0, 1000
- Message: 10 rows selected
- Duration / Fetch: 0.000 sec / 0.000 sec
- ENG IN
- 11:51 AM 4/22/2024

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

```
SELECT GROUP_CONCAT(CourierID) AS "Courier ID's ",COUNT(CourierID) AS "Count"  
FROM courier  
GROUP BY SenderAddress;
```

The screenshot shows the MySQL Workbench interface with a query editor and a results grid.

Query Editor:

```
205 GROUP BY LocationID;  
206 -- 46  
208 • SELECT GROUP_CONCAT(CourierID) AS "Courier ID's ",COUNT(CourierID) AS "Count"  
    FROM courier  
    GROUP BY SenderAddress;  
210  
211
```

Result Grid:

Courier ID's	Count
1,6	2
3,8	2
4,9	2
5,10	2
2,7	2

Table Information:

Table: location

Columns:

LocationID	int PK
LocationName	varchar
Address	text

Session Status:

- Read Only
- Context Help
- Snippets

System Status:

- 86°F Mostly sunny
- 11:54 AM
- 11:55 AM
- ENG IN
- 4/22/2024

47. List employees and the number of couriers they have delivered:

```
SELECT e.EmployeeID, e.Name AS EmployeeName, COUNT(c.CourierID) AS TotalCouriersDelivered  
FROM employee e  
LEFT JOIN courier c ON e.EmployeeID=c.emp_id  
GROUP BY e.EmployeeID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Contains the SQL query from question 47.
- Result Grid:** Displays the output of the query, showing 10 rows of data:

EmployeeID	EmployeeName	TotalCouriersDelivered
1	John Smith	0
2	Alice Johnson	0
3	Bob Brown	3
4	Eve Wilson	0
5	Grace Lee	1
6	David Miller	0
7	Olivia Brown	0
8	Michael Johnson	0
9	Charlie Davis	1
10	Emma Wilson	0

- Information Panel:** Shows details for the 'location' table, including columns: LocationID (int PK), LocationName (varchar), and Address (text).
- System Status Bar:** Shows weather (86°F, Mostly sunny), system icons, and the current date/time (4/22/2024, 12:09 PM).

48. Find couriers that were paid an amount greater than the cost of their respective courier services

```
SELECT c.CourierID,s.Cost,p.Amount  
FROM  
courier c  
JOIN payment p on p.CourierID=c.CourierID  
JOIN courierservices s on c.cou_ser_id=s.ServiceID  
WHERE p.Amount>s.Cost;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database schema with the `courier_mag_sys` database selected, containing tables like `courier`, `courierservices`, and `payment`.
- Query Editor:** Displays the SQL query from the question.
- Result Grid:** Shows the output of the query, which is an empty table with columns `CourierID`, `Cost`, and `Amount`. There are no rows present.
- Information Panel:** Shows details for the `location` table, including its columns: `LocationID` (int PK), `LocationName` (varchar), and `Address` (text).
- Status Bar:** Shows system information including the date and time (4/22/2024, 12:20 PM), battery level (93%), and network status.

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

```
SELECT *  
FROM courier  
WHERE Weight > (SELECT AVG(Weight) FROM courier);
```

The screenshot shows the MySQL Workbench interface. The query editor window contains the following SQL code:

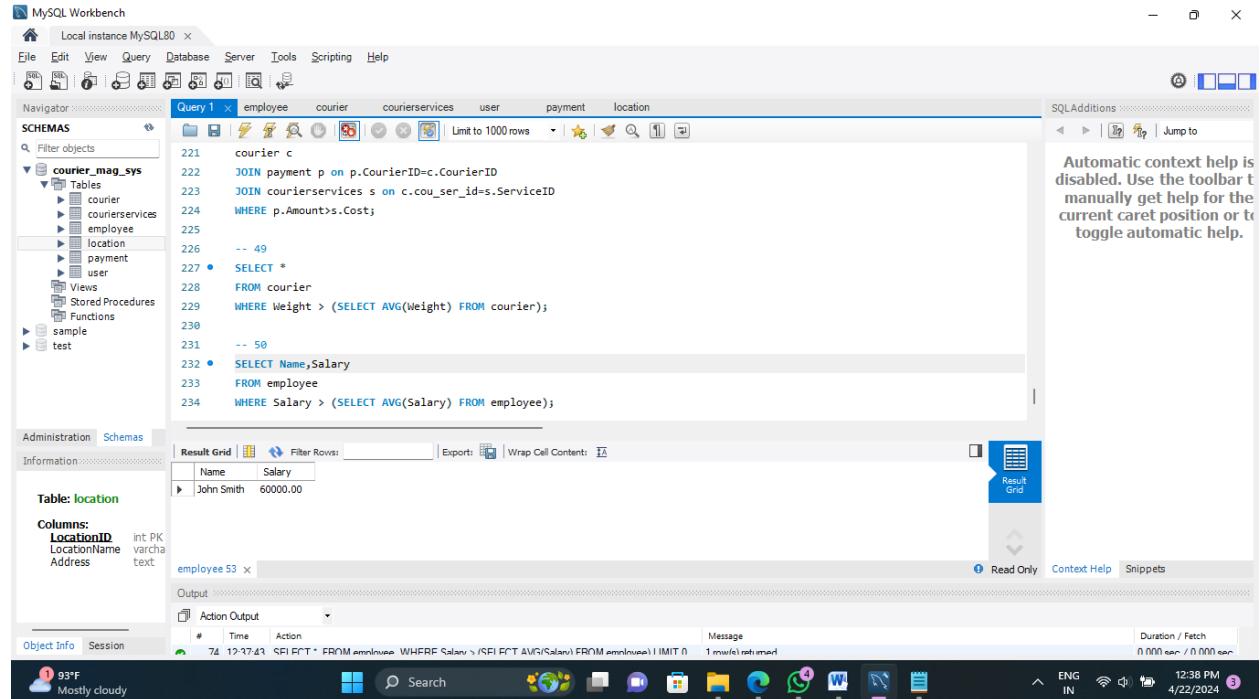
```
-- 48  
SELECT c.CourierID,s.Cost,p.Amount  
FROM  
courier c  
JOIN payment p ON p.CourierID=c.CourierID  
JOIN courierservices s ON c.cou_ser_id=s.ServiceID  
WHERE p.Amount>s.Cost;  
  
-- 49  
SELECT *  
FROM courier  
WHERE Weight > (SELECT AVG(Weight) FROM courier);  
230
```

The results grid displays the following data:

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL	2024-05-12	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-06	Bob Brown
8	Charlie Davis	202 Pine St	Eve Wilson	305 Cedar St	3.60	In Transit	VWX234	NULL	2024-05-29	NULL
10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	NULL	2024-05-15	NULL

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

```
SELECT Name,Salary  
FROM employee  
WHERE Salary > (SELECT AVG(Salary) FROM employee);
```



The screenshot shows the MySQL Workbench interface. The query editor window contains the following SQL code:

```
221  courier c  
222  JOIN payment p ON p.CourierID=c.CourierID  
223  JOIN courierservices s ON c.cou_ser_id=s.ServiceID  
224  WHERE p.Amount>s.Cost;  
225  
226  -- 49  
227  • SELECT *  
228  FROM courier  
229  WHERE Weight > (SELECT AVG(Weight) FROM courier);  
230  
231  -- 50  
232  • SELECT Name,Salary  
233  FROM employee  
234  WHERE Salary > (SELECT AVG(Salary) FROM employee);
```

The results grid shows one row of data:

Name	Salary
John Smith	60000.00

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

```
SELECT *  
FROM courierservices  
WHERE Cost < (SELECT MAX(Cost) FROM courierservices );
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The main window has tabs for employee, courier, courierservices, user, payment, and location. The 'Query 1' tab is active, displaying the following SQL code:

```
-- 49  
227 • SELECT *  
228   FROM courier  
229   WHERE Weight > (SELECT AVG(Weight) FROM courier);  
230  
231 -- 50  
232 • SELECT Name,Salary  
233   FROM employee  
234   WHERE Salary > (SELECT AVG(Salary) FROM employee);  
235  
236 -- 51  
237 • SELECT *
```

The 'Result Grid' tab is selected, showing the results of the first query:

ServiceID	ServiceName	Cost
1	Standard Delivery	10.00
2	Express Delivery	20.00
3	Same-Day Delivery	30.00
4	Overnight Delivery	15.00
6	Local Delivery	5.00
7	Next-Day Delivery	12.00
8	Economy Delivery	8.00
9	Priority Delivery	25.00
10	Two-Day Delivery	18.00

The status bar at the bottom shows the weather as 99°F Sunny, the system date and time as 4/22/2024 2:25 PM, and various system icons.

52. Find all couriers that have been paid for

```
SELECT *  
FROM courier c  
JOIN payment on c.CourierID=payment.CourierID;
```

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Schemas Tree:** Local instance MySQL80, Schemas (courier_mag_sys), Tables (courier, courierservices, employee, location, payment, user), Views, Stored Procedures, Functions, sample, test.
- Query Editor:** Contains the SQL code for question 52.
- Result Grid:** Displays the results of the query, showing 8 rows of courier information.
- Toolbar:** Includes icons for Save, Undo, Redo, Copy, Paste, Print, etc.
- Status Bar:** Shows the date (4/22/2024), time (2:31 PM), and system status (ENG IN).

CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TradingNumber	DeliveryDate	Order_date	Employee_n
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL
1	John Doe	123 Main St	Jane Smith	456 Elm St	2.50	In Transit	ABC123	2024-04-21	2024-03-10	NULL
2	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	3.20	Delivered	DEF456	2024-04-18	2024-04-14	Alice Johnson
3	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	1.80	Pending	GHI789	NULL	2024-02-11	NULL
4	Grace Lee	404 Birch St	David Miller	505 Walnut St	4.70	In Transit	JKL012	NULL	2024-05-12	NULL
5	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	2.10	Pending	MNO345	NULL	2024-03-22	NULL
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-16	2024-04-06	Bob Brown
7	Alice Johnson	789 Oak St	Bob Brown	101 Maple St	1.90	Pending	STU901	NULL	2024-04-30	NULL
8	Charlie Davis	202 Pine St	Eve Wilson	303 Cedar St	3.60	In Transit	VWX234	NULL	2024-05-29	NULL

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

```
SELECT l.LocationName, SUM(p.Amount)
FROM location l
INNER JOIN payment p ON p.LocationID = l.LocationID
GROUP BY l.LocationID
ORDER BY SUM(p.Amount) DESC
LIMIT 1;
```

The screenshot shows the MySQL Workbench interface with the following details:

- Query Editor:** Displays the SQL query from question 53.
- Result Grid:** Shows the output of the query:

LocationName	SUM(p.Amount)
Main Office	1555.00
- Output Window:** Shows the execution log with several rows of log entries, including one with an error message about an aggregated query without a GROUP BY clause.
- System Tray:** At the bottom, it shows the date and time (4/22/2024, 2:39 PM), battery level (99%), and network status (ENG IN).

54. Find all couriers whose weight is greater than the weight of all couriers sent by a specific sender
(e.g., 'SenderName'):

```
SELECT
*
FROM courier
WHERE Weight > (SELECT SUM(Weight)
                  FROM courier
                  WHERE SenderName='Alice Johnson')
```

The screenshot shows the MySQL Workbench interface. The query editor window contains the following SQL code:

```
-- 54
SELECT *
FROM courier
WHERE Weight > (SELECT SUM(Weight)
                  FROM courier
                  WHERE SenderName='Alice Johnson')
```

The results grid below shows two rows of data:

CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	Order_date	Employee_name
6	John Doe	123 Main St	Jane Smith	456 Elm St	5.30	Delivered	PQR678	2024-04-06	2024-04-06	Bob Brown	
10	Olivia Brown	606 Spruce St	Michael Johnson	707 Oak St	6.00	Pending	BCD890	NULL	2024-05-15	NULL	NULL

The status bar at the bottom right indicates the system is at 99°F, sunny, and the time is 2:46 PM on 4/22/2024.