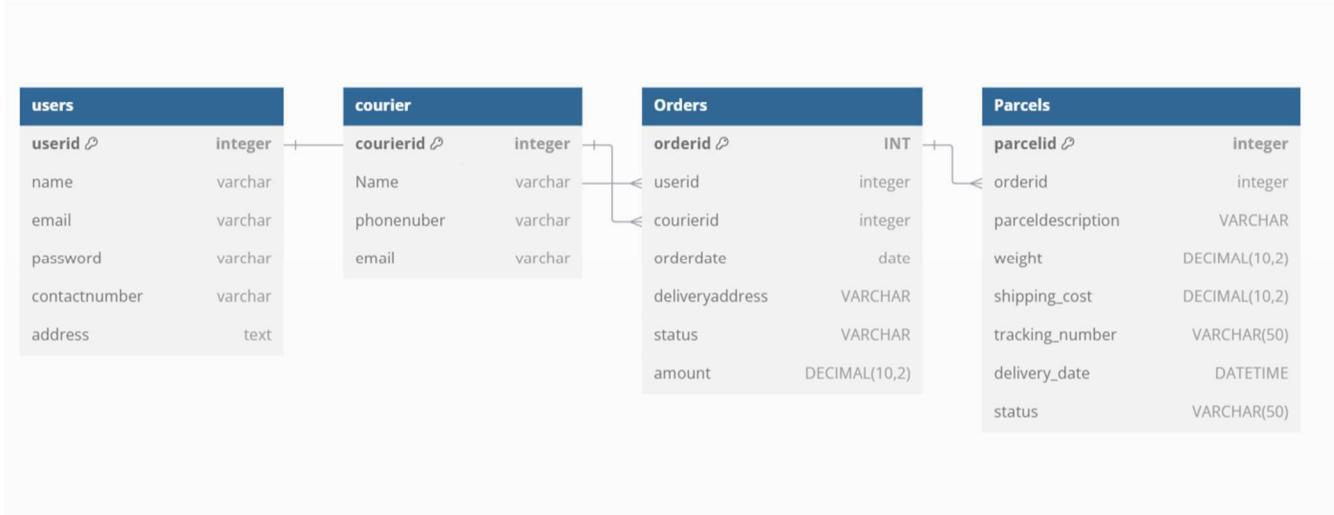


**Assignment 4 – Courier Management System**

-Sivaprakash V

**TASK 01**

Database Schema Diagram – Courier Management System

Table creation in Database

## 1. User Table

```
create table users (UserID INT PRIMARY KEY, Name VARCHAR(255), Email VARCHAR(255) UNIQUE, Password VARCHAR(255), ContactNumber VARCHAR(20), Address TEXT );
```

## 2. Courier Table

```
create table couriers (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, ServiceID int ,FOREIGN KEY (ServiceID) REFERENCES  
CourierServices(ServiceID) );
```

## 3. CourierServices Table

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

### 4. Employee Table

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

### 5. Location Table

```
create table Location (LocationID INT PRIMARY KEY, LocationName VARCHAR(100),  
Address TEXT);
```

### 6. Payment Table

```
create table payment(PaymentID INT PRIMARY KEY, CourierID INT, LocationId INT,  
Amount DECIMAL(10, 2), PaymentDate DATE,  
FOREIGN KEY (CourierID) REFERENCES Couriers(CourierID),  
FOREIGN KEY (LocationID) REFERENCES Location(LocationID));
```

### 7. Orders Table

```
create table orders ( OrderID int PRIMARY KEY,  
UserID int,CourierID int,EmpID int,orderdate date,  
FOREIGN KEY (CourierID) REFERENCES Couriers(CourierID),  
FOREIGN KEY (UserID) REFERENCES users(UserID),  
FOREIGN KEY (EmpID) REFERENCES Employee(EmployeeID));
```

### 8. Parcels Table

```
create table parcels(ParcelID int primary key,OrderID int,  
FOREIGN KEY (OrderID) REFERENCES orders(OrderID));
```

### Inserting data into tables

#### 1. User table

```
INSERT INTO users (UserID, Name, Email, Password, ContactNumber, Address)VALUES  
(1, 'Rajesh Kumar', 'rajesh.kumar@example.com', 'password123', '9876543210', '12, MG Road,  
Delhi'),  
(2, 'Meena Sharma', 'meena.sharma@example.com', 'meena@456', '9876543200', '45, Jayanagar,  
Bengaluru'),  
(3, 'Vikas Yadav', 'vikas.yadav@example.com', 'vikas@789', '9823456789', '88, Sarojini Nagar,  
Mumbai'),  
(4, 'Priya Singh', 'priya.singh@example.com', 'priya123', '9876509876', '56, Anna Salai,  
Chennai'),  
(5, 'Manoj Patil', 'manoj.patil@example.com', 'manoj@123', '9998877665', '98, Residency Road,  
Pune'),  
(6, 'Sneha Kapoor', 'sneha.kapoor@example.com', 'sneha@789', '9876543210', NULL), --  
Duplicate ContactNumber  
(7, 'Ravi Gupta', 'ravi.gupta@example.com', 'ravi@password', '9988776655', '25, Mall Road,  
Jaipur'),  
(8, 'Sunita Mehra', 'sunita.mehra@example.com', 'sunita@pass', '9765432100', '54, LBS Marg,  
Kolkata'),  
(9, 'Ankit Thakur', 'ankit.thakur@example.com', 'ankit@password', '9786543210', NULL),  
(10, 'Neha Rao', 'neha.rao@example.com', 'neha@123', '9955664477', 'Plot 45, Sector 18,  
Noida');
```

#### 2. Courier Table

```
INSERT INTO couriers (CourierID, SenderName, SenderAddress, ReceiverName,  
ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, ServiceID) VALUES  
(1, 'Rajesh Kumar', '12, MG Road, Delhi', 'Sunita Verma', '88, Sarojini Nagar, Mumbai', 3.50,  
'Delivered', 'TR123456', '2024-10-01', 1),  
(2, 'Meena Sharma', '45, Jayanagar, Bengaluru', 'Amit Gupta', '56, Anna Salai, Chennai', 1.20, 'In  
Transit', 'TR654321', '2024-10-05', 2),
```

(3, 'Vikas Yadav', '88, Sarojini Nagar, Mumbai', 'Sandeep Kaur', '12, MG Road, Delhi', 2.80, 'Out for Delivery', 'TR789456', '2024-10-04', 3),  
(4, 'Priya Singh', '56, Anna Salai, Chennai', 'Ravi Sharma', '45, Jayanagar, Bengaluru', 5.00, 'In Transit', 'TR321654', '2024-10-06', 4),  
(5, 'Manoj Patil', '98, Residency Road, Pune', 'Ravi Gupta', '25, Mall Road, Jaipur', 2.50, 'Delivered', 'TR111222', '2024-10-08', 1),  
(6, 'Sneha Kapoor', NULL, 'Sunita Mehra', '54, LBS Marg, Kolkata', 1.75, 'Out for Delivery', 'TR333444', '2024-10-09', 2),  
(7, 'Ravi Gupta', '25, Mall Road, Jaipur', 'Ankit Thakur', 'Plot 45, Sector 18, Noida', 3.25, 'In Transit', 'TR555666', NULL, 3), -- NULL DeliveryDate  
(8, 'Sunita Mehra', '54, LBS Marg, Kolkata', 'Neha Rao', 'Plot 45, Sector 18, Noida', 4.00, 'In Transit', 'TR777888', '2024-10-10', 4),  
(9, 'Ankit Thakur', 'Plot 45, Sector 18, Noida', 'Rajesh Kumar', '12, MG Road, Delhi', 2.95, 'Delivered', 'TR999000', '2024-10-07', 5),  
(10, 'Neha Rao', 'Plot 45, Sector 18, Noida', 'Meena Sharma', '45, Jayanagar, Bengaluru', 1.10, 'In Transit', 'TR112233', NULL, 6); -- NULL DeliveryDate

### 3. Courier Services Table

```
INSERT INTO CourierServices (ServiceID, ServiceName, Cost) VALUES  
(1, 'Standard Delivery', 75.00),(2, 'Express Delivery', 90.00),  
(3, 'Overnight Delivery', 150.00),(4, 'Same Day Delivery', 200.00),  
(5, 'International Shipping', 500.00),(6, 'Bulk Shipment', 400.00);
```

### 4. Employee Table

```
INSERT INTO Employee (EmployeeID, Name, Email, ContactNumber, Role, Salary) VALUES  
(1, 'Suresh Reddy', 'suresh.reddy@courier.com', '9876540000', 'Delivery Executive', 25000.00),  
(2, 'Asha Devi', 'asha.devi@courier.com', '9876541111', 'Customer Support', 20000.00),  
(3, 'Vimal Patel', 'vimal.patel@courier.com', '9876542222', 'Branch Manager', 50000.00),  
(4, 'Anjali Kapoor', 'anjali.kapoor@courier.com', '9876543333', 'Logistics Officer', 30000.00);
```

### 5. Location table

```
INSERT INTO Location (LocationID, LocationName, Address)VALUES  
(1, 'Delhi Branch', '12, MG Road, Delhi'),(2, 'Mumbai Branch', '88, Sarojini Nagar, Mumbai'),  
(3, 'Bengaluru Branch', '45, Jayanagar, Bengaluru'),(4, 'Chennai Branch', '56, Anna Salai,  
Chennai');
```

### 6. Payment table

```
INSERT INTO payment (PaymentID, CourierID, LocationId, Amount, PaymentDate) VALUES  
(1, 1, 1, 75.00, '2024-10-02'), (2, 2, 3, 90.00, '2024-10-05'), (3, 3, 2, 150.00, '2024-10-06'),  
(4, 4, 4, 200.00, '2024-10-07'), (5, 5, 2, 75.00, '2024-10-09'), (6, 6, 3, 90.00, '2024-10-10'),  
(7, 7, 4, 150.00, NULL), (8, 8, 1, 200.00, '2024-10-11'), (9, 9, 2, 500.00, '2024-10-08'),  
(10, 10, 4, 400.00, '2024-10-12');
```

### 7. Orders Table

```
INSERT INTO orders (OrderID, UserID, CourierID, EmpID, orderdate) VALUES  
(1, 1, 1, 1, '2024-10-01'), (2, 2, 2, 2, '2024-10-03'), (3, 3, 3, 3, '2024-10-04'),  
(4, 4, 4, 4, '2024-10-05'), (5, 5, 5, 1, '2024-10-09'), (6, 6, 6, 2, '2024-10-10'), (7, 7, 7, 3, '2024-10-11'),  
(8, 8, 8, 4, '2024-10-12'), (9, 9, 9, 1, '2024-10-08'), (10, 10, 10, 2, NULL);
```

### 8. Parcel Table

```
INSERT INTO parcels (ParcelID, OrderID) VALUES(1, 1),(2, 2),(3, 3),(4, 4),(5, 5),(6, 6),(7,  
7),(8, 8),(9, 9),(10, NULL);
```

-----TASK 01-----

## TASK 02

1. List all customers:

```
SELECT * FROM UserTable;
```

	UserID	Name	Email	Password	ContactNumber	Address
1	1	Rajesh Kumar	rajesh.kumar@example.com	password123	9876543210	12, MG Road, Delhi
2	2	Meena Sharma	meena.sharma@example.com	meena@456	9876543200	45, Jayanagar, Bengaluru
3	3	Vikas Yadav	vikas.yadav@example.com	vikas@789	9823456789	88, Sarojini Nagar, Mumbai
4	4	Priya Singh	priya.singh@example.com	priya123	9876509876	56, Anna Salai, Chennai
5	5	Manoj Patil	manoj.patil@example.com	manoj@123	9998877665	98, Residency Road, Pune
6	6	Sneha Kapoor	sneha.kapoor@example.com	sneha@789	9876543210	NULL
7	7	Ravi Gupta	ravi.gupta@example.com	ravi@password	9988776655	25, Mall Road, Jaipur
8	8	Sunita Mehra	sunita.mehra@example.com	sunita@pass	9765432100	54, LBS Marg, Kolkata
9	9	Ankit Thakur	ankit.thakur@example.com	ankit@password	9786543210	NULL
10	10	Neha Rao	neha.rao@example.com	neha@123	9955664477	Plot 45, Sector 18, Noida

2. List all orders for a specific customer:

```
select * from Couriers where SenderName = 'Rajesh Kumar';
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1

3. List all couriers:

```
select * from Courier;
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1
2	2	1	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai	1.20	Undelivered	TR654321	2024-10-05	2
3	3	1	Vikas Yadav	88, Sarojini Nagar, Mu...	Sandeep Kaur	12, MG Road, Delhi	2.80	Out for Del...	TR789456	2024-10-04	3
4	4	1	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	5.00	Undelivered	TR321654	2024-10-06	4
5	5	1	Manoj Patil	98, Residency Road, Pu...	Ravi Gupta	25, Mall Road, Jaipur	2.50	Delivered	TR11222	2024-10-08	1
6	6	1	Sneha Kapoor	NULL	Sunita Mehra	54, LBS Marg, Kolkata	1.75	Out for Del...	TR33444	2024-10-09	2
7	7	1	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL	3
8	8	1	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10	4
9	9	1	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07	5
10	10	1	Neha Rao	Plot 45, Sector 18, Noida	Meena Shar...	45, Jayanagar, Bengaluru	1.10	Undelivered	TR112233	NULL	6

## DATA ENGINEERING MS SQL

4. List all packages for a specific order:

```
select * from Payment where CourierID = 5;
```

	PaymentID	CourierID	LocationId	Amount	PaymentDate
1	5	5	2	75.00	2024-10-09

5. List all deliveries for a specific courier:

```
SELECT c.CourierID, c.TrackingNumber, c.SenderName, c.ReceiverName, c.Status,  
c.DeliveryDate, o.OrderID, o.orderdate FROM couriers c JOIN orders o ON c.CourierID =  
o.CourierID WHERE c.CourierID = 1;
```

	CourierID	TrackingNumber	SenderName	ReceiverName	Status	DeliveryDate	OrderID	orderdate
1	1	TR123456	Rajesh Kumar	Sunita Verma	Delivered	2024-10-01	1	2024-10-01

6. List all undelivered packages:

```
select * from Couriers where Status = 'Undelivered';
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	2	2	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai	1.20	Undelivered	TR654321	2024-10-05	2
2	4	4	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	5.00	Undelivered	TR321654	2024-10-06	4
3	7	7	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL	3
4	8	8	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10	4
5	10	10	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru	1.10	Undelivered	TR112233	NULL	6

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

```
select * from Courier where DeliveryDate = CAST(GETDATE() AS DATE);
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	21	21	Arun Prasad	No.12, Adyar, Chennai, Tamil Nadu	Rajesh Patel	Flat No.23, Bandra, Mumbai, Maharashtra	3.50	In Transit	TN0012345699	2024-09-29

8. List all packages with a specific status:

```
SELECT * FROM Courier where Status = 'delivered';
```

	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1
2	5	Manoj Patil	98, Residency Road, Pune	Ravi Gupta	25, Mall Road, Jaipur	2.50	Delivered	TR111222	2024-10-08	1
3	9	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07	5

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

```
SELECT o.CourierID, COUNT(p.ParcelID) AS TotalPackages FROM parcels p JOIN orders o
ON p.OrderID = o.OrderID GROUP BY o.CourierID;
```

	CourierID	TotalPackages
1	1	1
2	2	1
3	3	1
4	4	1
5	5	1
6	6	1
7	7	1
8	8	1
9	9	1

10. Find the average delivery time for each courier

```
SELECT c.CourierID, c.TrackingNumber, AVG(DATEDIFF(day, o.orderdate, c.DeliveryDate))
AS AvgDeliveryTimeDays FROM couriers c JOIN orders o ON c.CourierID = o.CourierID
WHERE c.DeliveryDate IS NOT NULL GROUP BY c.CourierID, c.TrackingNumber;
```

	CourierID	TrackingNumber	AvgDeliveryTimeDays
1	1	TR123456	0
2	2	TR654321	2
3	3	TR789456	0
4	4	TR321654	1

11. List all packages with a specific weight range:

select \* from Courier where Weight between 2.20 and 4.00;



The screenshot shows the SSMS interface with the 'Results' tab selected. The query `select \* from Courier where Weight between 2.20 and 4.00;` has been run, and the results are displayed in a table. The table has columns: CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate, and ServiceID. The data shows six rows of courier records.

	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1
2	3	Vikas Yadav	88, Sarojini Nagar, Mumbai	Sandeep Kaur	12, MG Road, Delhi	2.80	Out for Delivery	TR789456	2024-10-04	3
3	5	Manoj Patil	98, Residency Road, Pune	Ravi Gupta	25, Mall Road, Jaipur	2.50	Delivered	TR111222	2024-10-08	1
4	7	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL	3
5	8	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10	4
6	9	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07	5

12. Retrieve employees whose names contain 'John'

select \* from Employee where Name like '%vimal%';

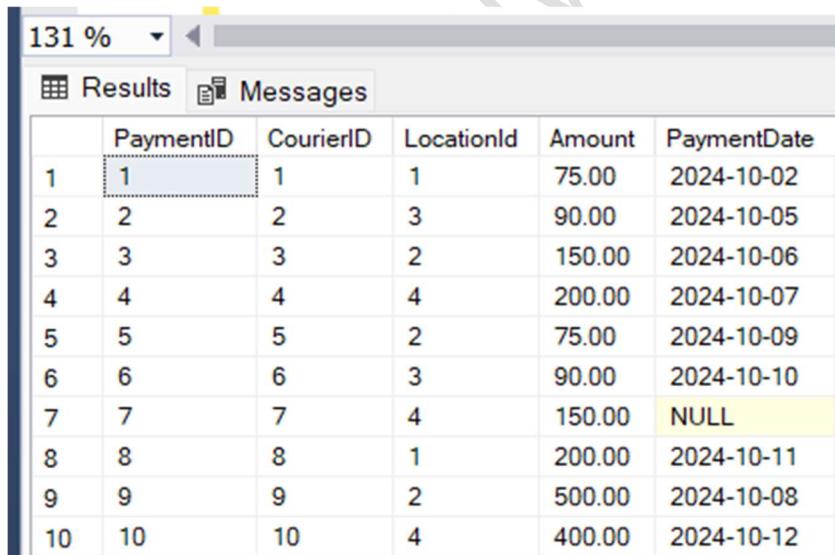


The screenshot shows the SSMS interface with the 'Results' tab selected. The query `select \* from Employee where Name like '%vimal%';` has been run, and the results are displayed in a table. The table has columns: EmployeeID, Name, Email, ContactNumber, Role, and Salary. The data shows one row of employee information.

	EmployeeID	Name	Email	ContactNumber	Role	Salary
1	3	Vimal Patel	vimal.patel@courier.com	9876542222	Branch Manager	50000.00

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

select \* from Payment where Amount>50.00;



The screenshot shows the SSMS interface with the 'Results' tab selected. The query `select \* from Payment where Amount>50.00;` has been run, and the results are displayed in a table. The table has columns: PaymentID, CourierID, LocationId, Amount, and PaymentDate. The data shows ten rows of payment records.

	PaymentID	CourierID	LocationId	Amount	PaymentDate
1	1	1	1	75.00	2024-10-02
2	2	2	3	90.00	2024-10-05
3	3	3	2	150.00	2024-10-06
4	4	4	4	200.00	2024-10-07
5	5	5	2	75.00	2024-10-09
6	6	6	3	90.00	2024-10-10
7	7	7	4	150.00	NULL
8	8	8	1	200.00	2024-10-11
9	9	9	2	500.00	2024-10-08
10	10	10	4	400.00	2024-10-12

-----TASK 02-----

## TASK 03

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

```
SELECT e.EmployeeID, e.Name AS EmployeeName, COUNT(DISTINCT c.CourierID) AS TotalCouriersHandled
FROM Employee e LEFT JOIN orders o ON e.EmployeeID = o.EmpID
LEFT JOIN couriers c ON o.CourierID = c.CourierID
GROUP BY e.EmployeeID, e.Name;
```

	EmployeeID	EmployeeName	TotalCouriersHandled
1	1	Suresh Reddy	3
2	2	Asha Devi	3
3	3	Vimal Patel	2
4	4	Anjali Kapoor	2

15. Calculate the total revenue generated by each location

```
select LocationId, sum(Amount) as RevenueGenerated from Payment group by LocationId;
```

	LocationId	RevenueGenerated
1	1	275.00
2	2	725.00
3	3	180.00
4	4	750.00

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

```
select LocationId, count(LocationId) as totalNoCourier from Payment group by LocationId;
```

	LocationId	totalNoCourier
1	1	2
2	2	3
3	3	2
4	4	3

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

```
SELECT TOP 1 c.CourierID, c.TrackingNumber, AVG(DATEDIFF(day, o.orderdate,
c.DeliveryDate)) AS AvgDeliveryTimeDays FROM couriers c JOIN orders o ON c.CourierID =
o.CourierID WHERE c.DeliveryDate IS NOT NULL GROUP BY c.CourierID,
c.TrackingNumber ORDER BY AvgDeliveryTimeDays DESC;
```

	CourierID	TrackingNumber	AvgDeliveryTimeDays
1	2	TR654321	2

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

```
select LocationId, sum(Amount) as TotalPayment from Payment group by LocationId having
sum(Amount)<400.00;--Database doesn't have for <150 so changed to 400;
```

	LocationId	TotalPayment
1	1	275.00
2	3	180.00

19. Calculate Total Payments per Location

```
select LocationId, count(LocationId) as TotalPayments, Sum(Amount) as TotalAmount from
Payment group by LocationId;
```

	LocationId	TotalPayments	TotalAmount
1	1	2	275.00
2	2	3	725.00
3	3	2	180.00
4	4	3	750.00

20. Retrieve couriers who have received payments totaling more than \$1000 in a specific location (LocationID = X):

```
SELECT c.CourierID, c.SenderName, c.ReceiverName, SUM(p.Amount) AS TotalPayments
FROM payment p JOIN couriers c ON p.CourierID = c.CourierID WHERE p.LocationId = 2
GROUP BY c.CourierID, c.SenderName, c.ReceiverName HAVING SUM(p.Amount) > 200;
```

	CourierID	SenderName	ReceiverName	TotalPayments
1	9	Ankit Thakur	Rajesh Kumar	500.00

21. Retrieve couriers who have received payments totaling more than \$100 after a certain date (PaymentDate > 'YYYY-MM-DD'):

```
SELECT c.CourierID, c.SenderName, c.ReceiverName, SUM(p.Amount) AS TotalPayments
FROM payment p JOIN couriers c ON p.CourierID = c.CourierID WHERE p.PaymentDate >
'2024-10-09' -- Replace 'YYYY-MM-DD' with the specific date GROUP BY c.CourierID,
c.SenderName, c.ReceiverName HAVING SUM(p.Amount) > 100;
```

	CourierID	SenderName	ReceiverName	TotalPayments
1	8	Sunita Mehra	Neha Rao	200.00
2	10	Neha Rao	Meena Sharma	400.00

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

```
SELECT l.LocationID, l.LocationName, SUM(p.Amount) AS TotalAmountReceived FROM
payment p JOIN Location l ON p.LocationID = l.LocationID WHERE p.PaymentDate < '2024-
10-09' GROUP BY l.LocationID, l.LocationName HAVING SUM(p.Amount) > 500;
```

	LocationID	LocationName	TotalAmountReceived
1	2	Mumbai Branch	650.00

-----TASK 03-----

## TASK 04

## 23. Retrieve Payments with Courier Information

```
Select p.PaymentID, p.LocationId, p.PaymentDate, p.Amount,
c.Weight, c.Status, c.TrackingNumber, c.DeliveryDate, c.SenderName,
c.SenderAddress, c.ReceiverName, c.ReceiverAddress from Payment p
join Couriers c on p.CourierID = c.CourierID order by PaymentID;
```

	PaymentID	LocationId	PaymentDate	Amount	Weight	Status	TrackingNumber	DeliveryDate	SenderName	SenderAddress	ReceiverName	ReceiverAddress
1	1	1	2024-10-02	75.00	3.50	Delivered	TR123456	2024-10-01	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai
2	2	3	2024-10-05	90.00	1.20	Undelivered	TR654321	2024-10-05	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai
3	3	2	2024-10-06	150.00	2.80	Out for Delivery	TR789456	2024-10-04	Vikas Yadav	88, Sarojini Nagar, Mumbai	Sandeep Kaur	12, MG Road, Delhi
4	4	4	2024-10-07	200.00	5.00	Undelivered	TR321654	2024-10-06	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru
5	5	2	2024-10-09	75.00	2.50	Delivered	TR111222	2024-10-08	Manoj Patil	98, Residency Road, Puri	Ravi Gupta	25, Mall Road, Jaipur
6	6	3	2024-10-10	90.00	1.75	Out for Delivery	TR333444	2024-10-09	Sneha Kapoor	NULL	Sunita Mehra	54, LBS Marg, Kolkata
7	7	4	NULL	150.00	3.25	Undelivered	TR555666	NULL	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida
8	8	1	2024-10-11	200.00	4.00	Undelivered	TR777888	2024-10-10	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida
9	9	2	2024-10-08	500.00	2.95	Delivered	TR999000	2024-10-07	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi
10	10	4	2024-10-12	400.00	1.10	Undelivered	TR112233	NULL	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru

## 24. Retrieve Payments with Location Information

```
select p.PaymentID,p.LocationId,p.PaymentDate, p.Amount, l.LocationName, l.Address from
Payment p join Location l on p.LocationId = l.LocationID order by PaymentID;
```

	PaymentID	LocationId	PaymentDate	Amount	LocationName	Address
1	1	1	2024-10-02	75.00	Delhi Branch	12, MG Road, Delhi
2	2	3	2024-10-05	90.00	Bengaluru Branch	45, Jayanagar, Bengaluru
3	3	2	2024-10-06	150.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
4	4	4	2024-10-07	200.00	Chennai Branch	56, Anna Salai, Chennai
5	5	2	2024-10-09	75.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
6	6	3	2024-10-10	90.00	Bengaluru Branch	45, Jayanagar, Bengaluru
7	7	4	NULL	150.00	Chennai Branch	56, Anna Salai, Chennai
8	8	1	2024-10-11	200.00	Delhi Branch	12, MG Road, Delhi
9	9	2	2024-10-08	500.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
10	10	4	2024-10-12	400.00	Chennai Branch	56, Anna Salai, Chennai

## 25. Retrieve Payments with Courier and Location Information

```
select p.PaymentID, p.LocationId, p.PaymentDate, p.Amount,
c.Weight, c.Status, c.TrackingNumber, c.DeliveryDate, c.SenderName,
c.SenderAddress, c.ReceiverName, c.ReceiverAddress, l.LocationName from
Payment p join Courier c on p.CourierID = c.CourierID join Location l on
l.LocationID = p.LocationId order by PaymentID;
```

## DATA ENGINEERING MS SQL

Results Messages

	PaymentID	LocationId	PaymentDate	Amount	Weight	Status	TrackingNumber	DeliveryDate	SenderName	SenderAddress	ReceiverName	ReceiverAddress	LocationName
1	1	1	2024-10-02	75.00	3.50	Delivered	TR123456	2024-10-01	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	Delhi Branch
2	2	3	2024-10-05	90.00	1.20	Undelivered	TR654321	2024-10-05	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai	Bengaluru Branch
3	3	2	2024-10-06	150.00	2.80	Out for Delivery	TR789456	2024-10-04	Vikas Yadav	88, Sarojini Nagar, Mumbai	Sandeep Kaur	12, MG Road, Delhi	Mumbai Branch
4	4	4	2024-10-07	200.00	5.00	Undelivered	TR321654	2024-10-06	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	Chennai Branch
5	5	2	2024-10-09	75.00	2.50	Delivered	TR111222	2024-10-08	Manoj Patil	98, Residency Road, Pune	Ravi Gupta	25, Mall Road, Jaipur	Mumbai Branch
6	6	3	2024-10-10	90.00	1.75	Out for Delivery	TR333444	2024-10-09	Sneha Kapoor	NULL	Sunita Mehra	54, LBS Marg, Kolkata	Bengaluru Branch
7	7	4	NULL	150.00	3.25	Undelivered	TR555666	NULL	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	Chennai Branch
8	8	1	2024-10-11	200.00	4.00	Undelivered	TR777888	2024-10-10	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	Delhi Branch
9	9	2	2024-10-08	500.00	2.95	Delivered	TR999000	2024-10-07	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	Mumbai Branch
10	10	4	2024-10-12	400.00	1.10	Undelivered	TR112233	NULL	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru	Chennai Branch

26. List all payments with courier details

```
Select p.PaymentID, p.LocationId, p.PaymentDate, p.Amount,
c.Weight, c.Status, c.TrackingNumber, c.DeliveryDate, c(SenderName,
c(SenderAddress, c(ReceiverName, c(ReceiverAddress from Payment p
join Courier c on p.CourierID = c.CourierID
order by PaymentID;
```

Results Messages

	PaymentID	LocationId	PaymentDate	Amount	Weight	Status	TrackingNumber	DeliveryDate	SenderName	SenderAddress	ReceiverName	ReceiverAddress	
1	1	1	2024-10-02	75.00	3.50	Delivered	TR123456	2024-10-01	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	Delhi Branch
2	2	3	2024-10-05	90.00	1.20	Undelivered	TR654321	2024-10-05	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai	Bengaluru Branch
3	3	2	2024-10-06	150.00	2.80	Out for Delivery	TR789456	2024-10-04	Vikas Yadav	88, Sarojini Nagar, Mumbai	Sandeep Kaur	12, MG Road, Delhi	Mumbai Branch
4	4	4	2024-10-07	200.00	5.00	Undelivered	TR321654	2024-10-06	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	Chennai Branch
5	5	2	2024-10-09	75.00	2.50	Delivered	TR111222	2024-10-08	Manoj Patil	98, Residency Road, Pune	Ravi Gupta	25, Mall Road, Jaipur	Mumbai Branch
6	6	3	2024-10-10	90.00	1.75	Out for Delivery	TR333444	2024-10-09	Sneha Kapoor	NULL	Sunita Mehra	54, LBS Marg, Kolkata	Bengaluru Branch
7	7	4	NULL	150.00	3.25	Undelivered	TR555666	NULL	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	Chennai Branch
8	8	1	2024-10-11	200.00	4.00	Undelivered	TR777888	2024-10-10	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	Delhi Branch
9	9	2	2024-10-08	500.00	2.95	Delivered	TR999000	2024-10-07	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	Mumbai Branch
10	10	4	2024-10-12	400.00	1.10	Undelivered	TR112233	NULL	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru	Chennai Branch

27. Total payments received for each courier

```
select c(SenderName, c(ReceiverName, sum(p.amount) as TotalAmount
from Courier c join Payment p on c.CourierID = p.CourierID
group by c(SenderName, c(ReceiverName
order by TotalAmount desc;
```

Results Messages

	SenderName	ReceiverName	TotalAmount
1	Ankit Thakur	Rajesh Kumar	500.00
2	Neha Rao	Meena Sharma	400.00
3	Sunita Mehra	Neha Rao	200.00
4	Priya Singh	Ravi Sharma	200.00
5	Vikas Yadav	Sandeep Kaur	150.00
6	Ravi Gupta	Ankit Thakur	150.00
7	Meena Sharma	Amit Gupta	90.00
8	Sneha Kapoor	Sunita Mehra	90.00
9	Rajesh Kumar	Sunita Verma	75.00
10	Manoj Patil	Ravi Gupta	75.00

28. List payments made on a specific date

```
select * from Payment where PaymentDate = '2024-09-29';
```

Results Messages

	PaymentID	CourierID	LocationId	Amount	PaymentDate
1	6	6	3	90.00	2024-10-10

### 29. Get Courier Information for Each Payment

```
select p.PaymentID, c.Weight, c.Status, c.TrackingNumber, c.DeliveryDate,
c.SenderName, c.SenderAddress, c.ReceiverName, c.ReceiverAddress from
Payment p inner join Courier c on p.CourierID = c.CourierID order by
PaymentID;
```

**Results** **Messages**

	PaymentID	Weight	Status	TrackingNumber	DeliveryDate	SenderName	SenderAddress	ReceiverName	ReceiverAddress
1	1	3.50	Delivered	TR123456	2024-10-01	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai
2	2	1.20	Undelivered	TR654321	2024-10-05	Meena Sharma	45, Jayanagar, Bengaluru	Amit Gupta	56, Anna Salai, Chennai
3	3	2.80	Out for Delivery	TR789456	2024-10-04	Vikas Yadav	88, Sarojini Nagar, Mumbai	Sandeep Kaur	12, MG Road, Delhi
4	4	5.00	Undelivered	TR321654	2024-10-06	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru
5	5	2.50	Delivered	TR111222	2024-10-08	Manoj Patil	98, Residency Road, Pune	Ravi Gupta	25, Mall Road, Jaipur
6	6	1.75	Out for Delivery	TR333444	2024-10-09	Sneha Kapoor	NULL	Sunita Mehra	54, LBS Marg, Kolkata
7	7	3.25	Undelivered	TR555666	NULL	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida
8	8	4.00	Undelivered	TR777888	2024-10-10	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida
9	9	2.95	Delivered	TR999000	2024-10-07	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi
10	10	1.10	Undelivered	TR112233	NULL	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru

### 30. Get Payment Details with Location

```
select p.PaymentID, p.LocationId, p.PaymentDate,
l.Address from Payment p inner join Location l
on p.LocationId = l.LocationID
order by PaymentID;
```

**Results** **Messages**

	PaymentID	LocationId	PaymentDate	Amount	LocationName	Address
1	1	1	2024-10-02	75.00	Delhi Branch	12, MG Road, Delhi
2	2	3	2024-10-05	90.00	Bengaluru Branch	45, Jayanagar, Bengaluru
3	3	2	2024-10-06	150.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
4	4	4	2024-10-07	200.00	Chennai Branch	56, Anna Salai, Chennai
5	5	2	2024-10-09	75.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
6	6	3	2024-10-10	90.00	Bengaluru Branch	45, Jayanagar, Bengaluru
7	7	4	NULL	150.00	Chennai Branch	56, Anna Salai, Chennai
8	8	1	2024-10-11	200.00	Delhi Branch	12, MG Road, Delhi
9	9	2	2024-10-08	500.00	Mumbai Branch	88, Sarojini Nagar, Mumbai
10	10	4	2024-10-12	400.00	Chennai Branch	56, Anna Salai, Chennai

### 31. Calculating Total Payments for Each Courier

```
select c.CourierID, sum(p.amount) as TotalPayment from Courier c join Payment p on
c.CourierID = p.CourierID group by c.CourierID;
```

	CourierID	TotalPayment
1	5	75.00
2	10	400.00
3	1	75.00
4	4	200.00
5	6	90.00
6	7	150.00
7	2	90.00
8	8	200.00
9	3	150.00
10	9	500.00

## 32. List Payments Within a Date Range

```
select * from Payment where PaymentDate between '2024-09-28' and '2024-09-30';
```

	PaymentID	CourierID	LocationId	Amount	PaymentDate
1	5	5	2	75.00	2024-10-09
2	6	6	3	90.00	2024-10-10
3	8	8	1	200.00	2024-10-11

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

```
select u.Name, u.Email, c.CourierID from UserTable u FULL OUTER JOIN Courier c on c.CourierID = u.UserID;
```

	Name	Email	CourierID
1	Rajesh Kumar	rajesh.kumar@example.com	1
2	Meena Sharma	meena.sharma@example.com	2
3	Vikas Yadav	vikas.yadav@example.com	3
4	Priya Singh	priya.singh@example.com	4
5	Manoj Patil	manoj.patil@example.com	5
6	Sneha Kapoor	sneha.kapoor@example.com	6
7	Ravi Gupta	ravi.gupta@example.com	7
8	Sunita Mehra	sunita.mehra@example.com	8
9	Ankit Thakur	ankit.thakur@example.com	9
10	Neha Rao	neha.rao@example.com	10

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

## DATA ENGINEERING MS SQL

```
SELECT c.CourierID, c.SenderName, c.ReceiverName, c.TrackingNumber, c.Status,
s.ServiceID, s.ServiceName, s.Cost FROM couriers c FULL OUTER JOIN CourierServices s
ON c.ServiceID = s.ServiceID;
```

	CourierID	SenderName	ReceiverName	TrackingNumber	Status	ServiceID	ServiceName	Cost
1	1	Rajesh Kumar	Sunita Verma	TR123456	Delivered	1	Standard Delivery	75.00
2	2	Meena Sharma	Amit Gupta	TR654321	Undelivered	2	Express Delivery	90.00
3	3	Vikas Yadav	Sandeep Kaur	TR789456	Out for Delivery	3	Oversight Delivery	150.00
4	4	Priya Singh	Ravi Sharma	TR321654	Undelivered	4	Same Day Delivery	200.00
5	5	Manoj Patil	Ravi Gupta	TR111222	Delivered	1	Standard Delivery	75.00
6	6	Sneha Kapoor	Sunita Mehra	TR333444	Out for Delivery	2	Express Delivery	90.00
7	7	Ravi Gupta	Ankit Thakur	TR555666	Undelivered	3	Oversight Delivery	150.00
8	8	Sunita Mehra	Neha Rao	TR777888	Undelivered	4	Same Day Delivery	200.00
9	9	Ankit Thakur	Rajesh Kumar	TR999000	Delivered	5	International Shipping	500.00
10	10	Neha Rao	Meena Sharma	TR112233	Undelivered	6	Bulk Shipment	400.00

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

```
SELECT e.EmployeeID, e.Name AS EmployeeName, e.Email, e.ContactNumber, p.PaymentID,
p.Amount, p.PaymentDate FROM Employee e FULL OUTER JOIN orders o ON e.EmployeeID
= o.EmpID FULL OUTER JOIN payment p ON o.CourierID = p.CourierID;
```

	EmployeeID	EmployeeName	Email	ContactNumber	PaymentID	Amount	PaymentDate
1	1	Suresh Reddy	suresh.reddy@courier.com	9876540000	1	75.00	2024-10-02
2	1	Suresh Reddy	suresh.reddy@courier.com	9876540000	5	75.00	2024-10-09
3	1	Suresh Reddy	suresh.reddy@courier.com	9876540000	9	500.00	2024-10-08
4	2	Asha Devi	asha.devi@courier.com	9876541111	2	90.00	2024-10-05
5	2	Asha Devi	asha.devi@courier.com	9876541111	6	90.00	2024-10-10
6	2	Asha Devi	asha.devi@courier.com	9876541111	10	400.00	2024-10-12
7	3	Vimal Patel	vimal.patel@courier.com	9876542222	3	150.00	2024-10-06
8	3	Vimal Patel	vimal.patel@courier.com	9876542222	7	150.00	NULL
9	4	Anjali Kapoor	anjali.kapoor@courier.com	9876543333	4	200.00	2024-10-07
10	4	Anjali Kapoor	anjali.kapoor@courier.com	9876543333	8	200.00	2024-10-11

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

```
select u.Name,u.ContactNumber, u.Email,u.UserID, c.ServiceName, c.ServiceID, c.Cost from
UserTable u cross join CourierServices c
```

## DATA ENGINEERING MS SQL

	Name	ContactNumber	Email	UserID	ServiceName	ServiceID	Cost
1	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	Standard Delivery	1	75.00
2	Meena Sharma	9876543200	meena.sharma@example.com	2	Standard Delivery	1	75.00
3	Vikas Yadav	9823456789	vikas.yadav@example.com	3	Standard Delivery	1	75.00
4	Priya Singh	9876509876	priya.singh@example.com	4	Standard Delivery	1	75.00
5	Manoj Patil	9998877665	manoj.patil@example.com	5	Standard Delivery	1	75.00
6	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	Standard Delivery	1	75.00
7	Ravi Gupta	9988776655	ravi.gupta@example.com	7	Standard Delivery	1	75.00
8	Sunita Mehra	9765432100	sunita.mehra@example.com	8	Standard Delivery	1	75.00
9	Ankit Thakur	9786543210	ankit.thakur@example.com	9	Standard Delivery	1	75.00
10	Neha Rao	9955664477	neha.rao@example.com	10	Standard Delivery	1	75.00
11	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	Express Delivery	2	90.00
12	Meena Sharma	9876543200	meena.sharma@example.com	2	Express Delivery	2	90.00
13	Vikas Yadav	9823456789	vikas.yadav@example.com	3	Express Delivery	2	90.00
14	Priya Singh	9876509876	priya.singh@example.com	4	Express Delivery	2	90.00
15	Manoj Patil	9998877665	manoj.patil@example.com	5	Express Delivery	2	90.00
16	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	Express Delivery	2	90.00
17	Ravi Gupta	9988776655	ravi.gupta@example.com	7	Express Delivery	2	90.00
18	Sunita Mehra	9765432100	sunita.mehra@example.com	8	Express Delivery	2	90.00
19	Ankit Thakur	9786543210	ankit.thakur@example.com	9	Express Delivery	2	90.00
20	Neha Rao	9955664477	neha.rao@example.com	10	Express Delivery	2	90.00
21	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	Oversight Deliv...	3	150.00
22	Meena Sharma	9876543200	meena.sharma@example.com	2	Oversight Deliv...	3	150.00
23	Vikas Yadav	9823456789	vikas.yadav@example.com	3	Oversight Deliv...	3	150.00
24	Priya Singh	9876509876	priya.singh@example.com	4	Oversight Deliv...	3	150.00
25	Manoj Patil	9998877665	manoj.patil@example.com	5	Oversight Deliv...	3	150.00
26	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	Oversight Deliv...	3	150.00
27	Ravi Gupta	9988776655	ravi.gupta@example.com	7	Oversight Deliv...	3	150.00
28	Sunita Mehra	9765432100	sunita.mehra@example.com	8	Oversight Deliv...	3	150.00
29	Ankit Thakur	9786543210	ankit.thakur@example.com	9	Oversight Deliv...	3	150.00
30	Neha Rao	9955664477	neha.rao@example.com	10	Oversight Deliv...	3	150.00
31	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	Same Day Deliv...	4	200.00
32	Meena Sharma	9876543200	meena.sharma@example.com	2	Same Day Deliv...	4	200.00
33	Vikas Yadav	9823456789	vikas.yadav@example.com	3	Same Day Deliv...	4	200.00
34	Priya Singh	9876509876	priya.singh@example.com	4	Same Day Deliv...	4	200.00
35	Manoj Patil	9998877665	manoj.patil@example.com	5	Same Day Deliv...	4	200.00
36	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	Same Day Deliv...	4	200.00
37	Ravi Gupta	9988776655	ravi.gupta@example.com	7	Same Day Deliv...	4	200.00
38	Sunita Mehra	9765432100	sunita.mehra@example.com	8	Same Day Deliv...	4	200.00
39	Ankit Thakur	9786543210	ankit.thakur@example.com	9	Same Day Deliv...	4	200.00
40	Neha Rao	9955664477	neha.rao@example.com	10	Same Day Deliv...	4	200.00
41	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	International Sh...	5	500.00
42	Meena Sharma	9876543200	meena.sharma@example.com	2	International Sh...	5	500.00
43	Vikas Yadav	9823456789	vikas.yadav@example.com	3	International Sh...	5	500.00
44	Priya Singh	9876509876	priya.singh@example.com	4	International Sh...	5	500.00
45	Manoj Patil	9998877665	manoj.patil@example.com	5	International Sh...	5	500.00
46	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	International Sh...	5	500.00
47	Ravi Gupta	9988776655	ravi.gupta@example.com	7	International Sh...	5	500.00
48	Sunita Mehra	9765432100	sunita.mehra@example.com	8	International Sh...	5	500.00
49	Ankit Thakur	9786543210	ankit.thakur@example.com	9	International Sh...	5	500.00
50	Neha Rao	9955664477	neha.rao@example.com	10	International Sh...	5	500.00
51	Rajesh Kumar	9876543210	rajesh.kumar@example.com	1	Bulk Shipment	6	400.00
52	Meena Sharma	9876543200	meena.sharma@example.com	2	Bulk Shipment	6	400.00
53	Vikas Yadav	9823456789	vikas.yadav@example.com	3	Bulk Shipment	6	400.00
54	Priya Singh	9876509876	priya.singh@example.com	4	Bulk Shipment	6	400.00
55	Manoj Patil	9998877665	manoj.patil@example.com	5	Bulk Shipment	6	400.00
56	Sneha Kapoor	9876543210	sneha.kapoor@example.com	6	Bulk Shipment	6	400.00
57	Ravi Gupta	9988776655	ravi.gupta@example.com	7	Bulk Shipment	6	400.00
58	Sunita Mehra	9765432100	sunita.mehra@example.com	8	Bulk Shipment	6	400.00
59	Ankit Thakur	9786543210	ankit.thakur@example.com	9	Bulk Shipment	6	400.00
60	Neha Rao	9955664477	neha.rao@example.com	10	Bulk Shipment	6	400.00

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

```
select e.EmployeeID, e.Name, e.Role, e.Salary, e.ContactNumber, l.LocationID, l.Address, l.LocationName
from Employee e cross join Location l;
```

	EmployeeID	Name	Role	Salary	ContactNumber	LocationID	Address	LocationName
1	1	Suresh Reddy	Delivery Executive	25000.00	9876540000	1	12, MG Road, Delhi	Delhi Branch
2	2	Asha Devi	Customer Support	20000.00	9876541111	1	12, MG Road, Delhi	Delhi Branch
3	3	Vimal Patel	Branch Manager	50000.00	9876542222	1	12, MG Road, Delhi	Delhi Branch
4	4	Anjali Kapoor	Logistics Officer	30000.00	9876543333	1	12, MG Road, Delhi	Delhi Branch
5	1	Suresh Reddy	Delivery Executive	25000.00	9876540000	2	88, Sarojini Nagar, Mumbai	Mumbai Branch
6	2	Asha Devi	Customer Support	20000.00	9876541111	2	88, Sarojini Nagar, Mumbai	Mumbai Branch
7	3	Vimal Patel	Branch Manager	50000.00	9876542222	2	88, Sarojini Nagar, Mumbai	Mumbai Branch
8	4	Anjali Kapoor	Logistics Officer	30000.00	9876543333	2	88, Sarojini Nagar, Mumbai	Mumbai Branch
9	1	Suresh Reddy	Delivery Executive	25000.00	9876540000	3	45, Jayanagar, Bengaluru	Bengaluru Branch
10	2	Asha Devi	Customer Support	20000.00	9876541111	3	45, Jayanagar, Bengaluru	Bengaluru Branch
11	3	Vimal Patel	Branch Manager	50000.00	9876542222	3	45, Jayanagar, Bengaluru	Bengaluru Branch
12	4	Anjali Kapoor	Logistics Officer	30000.00	9876543333	3	45, Jayanagar, Bengaluru	Bengaluru Branch
13	1	Suresh Reddy	Delivery Executive	25000.00	9876540000	4	56, Anna Salai, Chennai	Chennai Branch
14	2	Asha Devi	Customer Support	20000.00	9876541111	4	56, Anna Salai, Chennai	Chennai Branch
15	3	Vimal Patel	Branch Manager	50000.00	9876542222	4	56, Anna Salai, Chennai	Chennai Branch
16	4	Anjali Kapoor	Logistics Officer	30000.00	9876543333	4	56, Anna Salai, Chennai	Chennai Branch

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

```
SELECT CourierID, SenderName, SenderAddress, Weight, Status, TrackingNumber,
```

```
DeliveryDate FROM Couriers WHERE SenderName IS NOT NULL;
```

	CourierID	SenderId	SenderName	SenderAddress	Weight	Status	TrackingNumber	DeliveryDate
1	1	1	Rajesh Kumar	12, MG Road, Delhi	3.50	Delivered	TR123456	2024-10-01
2	2	2	Meena Sharma	45, Jayanagar, Bengaluru	1.20	Undelivered	TR654321	2024-10-05
3	3	3	Vikas Yadav	88, Sarojini Nagar, Mumbai	2.80	Out for Delivery	TR789456	2024-10-04
4	4	4	Priya Singh	56, Anna Salai, Chennai	5.00	Undelivered	TR321654	2024-10-06
5	5	5	Manoj Patil	98, Residency Road, Pune	2.50	Delivered	TR111222	2024-10-08
6	6	6	Sneha Kapoor	NULL	1.75	Out for Delivery	TR333444	2024-10-09
7	7	7	Ravi Gupta	25, Mall Road, Jaipur	3.25	Undelivered	TR555666	NULL
8	8	8	Sunita Mehra	54, LBS Marg, Kolkata	4.00	Undelivered	TR777888	2024-10-10
9	9	9	Ankit Thakur	Plot 45, Sector 18, Noida	2.95	Delivered	TR999000	2024-10-07
10	10	10	Neha Rao	Plot 45, Sector 18, Noida	1.10	Undelivered	TR112233	NULL

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

```
SELECT CourierID, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber,
```

```
DeliveryDate FROM Couriers WHERE ReceiverName IS NOT NULL;
```

Results Messages

	CourierID	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	1	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01
2	2	Amit Gupta	56, Anna Salai, Chennai	1.20	Undelivered	TR654321	2024-10-05
3	3	Sandeep Kaur	12, MG Road, Delhi	2.80	Out for Delivery	TR789456	2024-10-04
4	4	Ravi Sharma	45, Jayanagar, Bengaluru	5.00	Undelivered	TR321654	2024-10-06
5	5	Ravi Gupta	25, Mall Road, Jaipur	2.50	Delivered	TR111222	2024-10-08
6	6	Sunita Mehra	54, LBS Marg, Kolkata	1.75	Out for Delivery	TR333444	2024-10-09
7	7	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL
8	8	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10
9	9	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07
10	10	Meena Sharma	45, Jayanagar, Bengaluru	1.10	Undelivered	TR112233	NULL

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

```
SELECT C.CourierID,C.SenderName,C.ReceiverName,C.Weight,C.Status,C.TrackingNumber,
C.DeliveryDate,CS.ServiceName FROM Courier C LEFT JOIN Payment P ON C.CourierID = 
P.CourierID LEFT JOIN CourierServices CS ON P.Amount = CS.Cost;
```

131 % Results Messages

	CourierID	SenderName	ReceiverName	Weight	Status	TrackingNumber	DeliveryDate	ServiceName
1	1	Rajesh Kumar	Sunita Verma	3.50	Delivered	TR123456	2024-10-01	Standard Delivery
2	2	Meena Sharma	Amit Gupta	1.20	Undelivered	TR654321	2024-10-05	Express Delivery
3	3	Vikas Yadav	Sandeep Kaur	2.80	Out for Delivery	TR789456	2024-10-04	Overnight Delivery
4	4	Priya Singh	Ravi Sharma	5.00	Undelivered	TR321654	2024-10-06	Same Day Delivery
5	5	Manoj Patil	Ravi Gupta	2.50	Delivered	TR111222	2024-10-08	Standard Delivery
6	6	Sneha Kapoor	Sunita Mehra	1.75	Out for Delivery	TR333444	2024-10-09	Express Delivery
7	7	Ravi Gupta	Ankit Thakur	3.25	Undelivered	TR555666	NULL	Overnight Delivery
8	8	Sunita Mehra	Neha Rao	4.00	Undelivered	TR777888	2024-10-10	Same Day Delivery
9	9	Ankit Thakur	Rajesh Kumar	2.95	Delivered	TR999000	2024-10-07	International Shipping
10	10	Neha Rao	Meena Sharma	1.10	Undelivered	TR112233	NULL	Bulk Shipment

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

```
SELECT e.EmployeeID, e.Name AS EmployeeName, COUNT(DISTINCT o.CourierID) AS
NumberOfCouriersAssigned FROM Employee e LEFT JOIN orders o ON e.EmployeeID =
o.EmpID GROUP BY e.EmployeeID, e.Name;
```

Results Messages

	EmployeeID	EmployeeName	NumberOfCouriersAssigned
1	1	Suresh Reddy	3
2	2	Asha Devi	3
3	3	Vimal Patel	2
4	4	Anjali Kapoor	2

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

```
select l.LocationName, sum (p.Amount) as TotalAmount from Location l join Payment p on l.LocationID = p.LocationId group by l.LocationName;
```

	LocationName	TotalAmount
1	Bengaluru Branch	180.00
2	Chennai Branch	750.00
3	Delhi Branch	275.00
4	Mumbai Branch	725.00

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

```
SELECT CourierID, SenderName, SenderAddress, ReceiverName, ReceiverAddress, Weight, Status, TrackingNumber, DeliveryDate FROM Courier WHERE SenderName = 'Ravi Gupta';
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	7		Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL

44. List all employees who share the same role.

```
select * from Employee where Role in (select Role from Employee group by Role having count(Role)>1)
```

	EmployeeID	Name	Email	ContactNumber	Role	Salary
1	1	Suresh Reddy	suresh.reddy@courier.com	9876540000	Delivery Executive	25000.00
2	5	Vinusha Ram	vinu@courier.com	9956895614	Delivery Executive	25000.00

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

```
select l.LocationName, c.SenderName, p.Amount from Payment p join Location l on p.LocationId = l.LocationID join Courier c on c.CourierID = p.CourierID where l.LocationID = 1 ;
```

	LocationName	SenderName	Amount
1	Delhi Branch	Rajesh Kumar	75.00
2	Delhi Branch	Sunita Mehra	200.00

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

```
ALTER TABLE Couriers ALTER COLUMN SenderAddress VARCHAR(255);
```

```
SELECT C.CourierID, C.SenderName, C.SenderAddress, C.ReceiverName, C.ReceiverAddress,
C.Weight, C.Status, C.TrackingNumber, C.DeliveryDate FROM Courier C WHERE
C.SenderAddress IN ( SELECT SenderAddress FROM Courier GROUP BY SenderAddress
HAVING COUNT(*) > 1);
```

	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate
1	9	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07
2	10	Neha Rao	Plot 45, Sector 18, Noida	Meena Sharma	45, Jayanagar, Bengaluru	1.10	Undelivered	TR112233	NULL

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

```
SELECT e.EmployeeID, e.Name AS EmployeeName, COUNT(DISTINCT o.CourierID) AS
NumberOfCouriersDelivered FROM Employee e LEFT JOIN orders o ON e.EmployeeID =
o.EmpID GROUP BY e.EmployeeID, e.Name;
```

	EmployeeID	EmployeeName	NumberOfCouriersDelivered
1	1	Suresh Reddy	3
2	2	Asha Devi	3
3	3	Vimal Patel	2
4	4	Anjali Kapoor	2
5	5	Vinusha Ram	0

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

```
SELECT c.CourierID, c.SenderName, c.ReceiverName, p.PaymentID, p.Amount AS  
PaymentAmount, s.Cost AS ServiceCost FROM couriers c JOIN payment p ON c.CourierID =  
p.CourierID JOIN CourierServices s ON c.ServiceID = s.ServiceID WHERE p.Amount > s.Cost;
```

CourierID	SenderName	ReceiverName	PaymentID	PaymentAmount	ServiceCost

-----TASK 04-----

## TASK 05

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)

	CourierID	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1
2	4	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	5.00	Undelivered	TR321654	2024-10-06	4
3	7	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL	3
4	8	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10	4
5	9	Ankit Thakur	Plot 45, Sector 18, Noida	Rajesh Kumar	12, MG Road, Delhi	2.95	Delivered	TR999000	2024-10-07	5

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

select \* from Employee where Salary > (select avg(salary) from Employee)

	EmployeeID	Name	Email	ContactNumber	Role	Salary
1	3	Vimal Patel	vimal.patel@courier.com	9876542222	Branch Manager	50000.00

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

select sum(Cost) as totcost from CourierServices where Cost < (select max(Cost) from CourierServices);

	totcost
1	915.00

52. Find all couriers that have been paid for

select c.CourierID, c(SenderName, c.TrackingNumber, c.Status, c.Weight, p.Amount, p.PaymentDate from Courier c join Payment p on c.CourierID = p.CourierID;

	CourierID	SenderName	TrackingNumber	Status	Weight	Amount	PaymentDate
1	1	Rajesh Kumar	TR123456	Delivered	3.50	75.00	2024-10-02
2	2	Meena Sharma	TR654321	Undelivered	1.20	90.00	2024-10-05
3	3	Vikas Yadav	TR789456	Out for Delivery	2.80	150.00	2024-10-06
4	4	Priya Singh	TR321654	Undelivered	5.00	200.00	2024-10-07
5	5	Manoj Patil	TR111222	Delivered	2.50	75.00	2024-10-09
6	6	Sneha Kapoor	TR333444	Out for Delivery	1.75	90.00	2024-10-10
7	7	Ravi Gupta	TR555666	Undelivered	3.25	150.00	NULL
8	8	Sunita Mehra	TR777888	Undelivered	4.00	200.00	2024-10-11
9	9	Ankit Thakur	TR999000	Delivered	2.95	500.00	2024-10-08
10	10	Neha Rao	TR112233	Undelivered	1.10	400.00	2024-10-12

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

```
SELECT L.LocationName, MAX(P.Amount) AS MaxPayment FROM Payment P JOIN
Location L ON P.LocationID = L.LocationID GROUP BY L.LocationName HAVING
MAX(P.Amount) = (SELECT MAX(Amount) FROM Payment);
```

	LocationName	MaxPayment
1	Mumbai Branch	500.00

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 max(Weight) from Courier where SenderName = 'Ankit Thakur');
```

	CourierID	SenderId	SenderName	SenderAddress	ReceiverName	ReceiverAddress	Weight	Status	TrackingNumber	DeliveryDate	ServiceID
1	1	1	Rajesh Kumar	12, MG Road, Delhi	Sunita Verma	88, Sarojini Nagar, Mumbai	3.50	Delivered	TR123456	2024-10-01	1
2	4	4	Priya Singh	56, Anna Salai, Chennai	Ravi Sharma	45, Jayanagar, Bengaluru	5.00	Undelivered	TR321654	2024-10-06	4
3	7	7	Ravi Gupta	25, Mall Road, Jaipur	Ankit Thakur	Plot 45, Sector 18, Noida	3.25	Undelivered	TR555666	NULL	3
4	8	8	Sunita Mehra	54, LBS Marg, Kolkata	Neha Rao	Plot 45, Sector 18, Noida	4.00	Undelivered	TR777888	2024-10-10	4

### TASK 05

Sivaprakash V