....ASSIGNMENT : SQL JOINS....

Note : Create the following dummy tables in MySQL Workbench using CREATE FUNCTION-

Table 1: Customers

CUSTOMER ID	CUSTOMER NAME	CITY
1	John Smith	New York
2	Mary Johnson	Chicago
3	Peter Adams	Los Angeles
4	Nancy Miller	Houston
5	Robert White	Miami

Create database customersdataset;

Use customers dataset;

```
CREATE TABLE Customers (
   CustomerID INT PRIMARY KEY,
   CustomerName VARCHAR(50),
   City VARCHAR(50));
INSERT INTO Customers VALUES
(1, 'John Smith', 'New York'),
(2, 'Mary Johnson', 'Chicago'),
(3, 'Peter Adams', 'Los Angeles'),
(4, 'Robert White', 'Houston'),
(5, 'Nancy Miller', 'Miami');
```

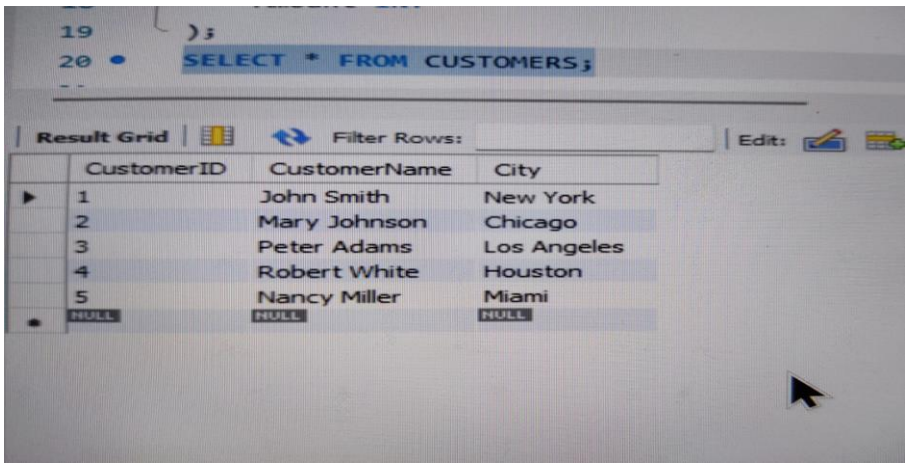


TABLE 2:ORDERS

ORDER ID	CUSTOMER ID	ORDER DATE	AMOUNT
101	1	2024-10-01	250
102	2	2024-10-05	300
103	1	2024-10-07	150
104	3	2024-10-10	450
105	6	2024-10-12	400

```
CREATE DATABASE ORDERSDATASET;

USE ORDERSDATASET;

CREATE TABLE Orders (

   OrderID INT PRIMARY KEY,

   CustomerID INT,

   OrderDate DATE,

   Amount INT);

INSERT INTO Orders VALUES

(101, 1, '2024-10-01', 250),

(102, 2, '2024-10-05', 300),

(103, 1, '2024-10-07', 150),

(104, 3, '2024-10-10', 450),

(105, 6, '2024-10-12', 400);
```

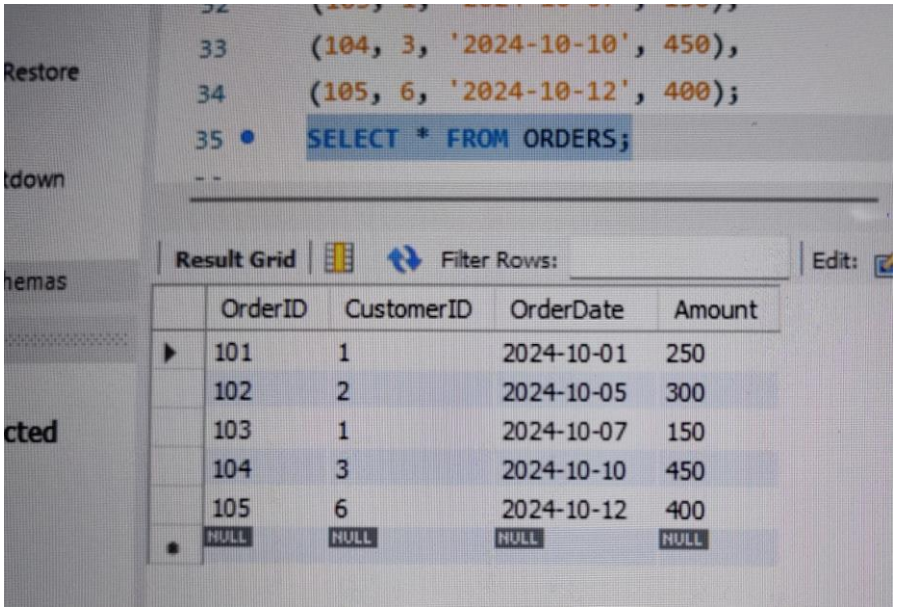


Table 3: payments

Payment id	Customer id	Payment date	AMOUNT
P001	1	2024-10-02	250
P002	2	2024-10-06	300
P003	3	2024-10-11	450
P004	4	2024-10-15	200

```
Create database paymentsdataset;

Use paymentsdataset;

CREATE TABLE Payments (
   PaymentID VARCHAR(10) PRIMARY KEY,
   CustomerID INT,
   PaymentDate DATE,
   Amount INT
);

 INSERT INTO Payments VALUES
('P001', 1, '2024-10-02', 250),
('P002', 2, '2024-10-06', 300),
('P003', 3, '2024-10-11', 450),
('P004', 4, '2024-10-15', 200);
```

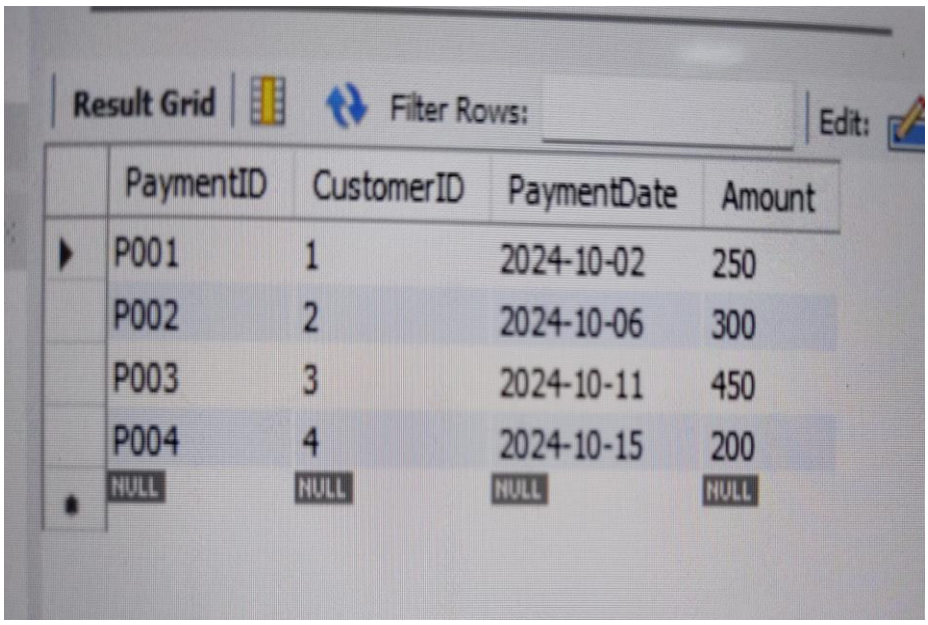
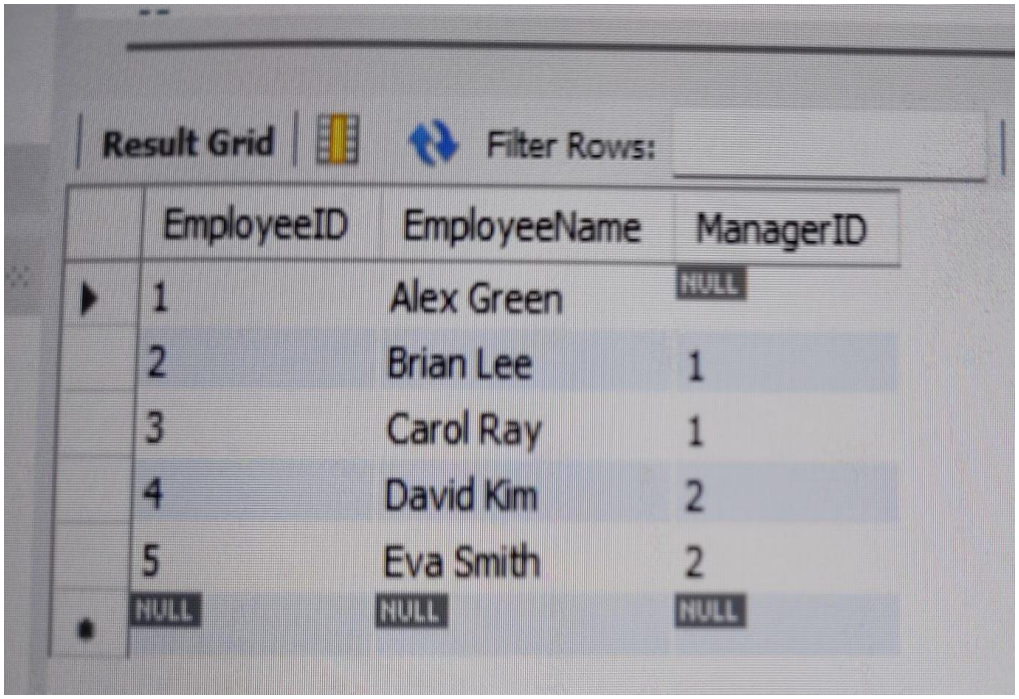


TABLE 4: EMPLOYEES

EMLOYEE ID	EMPLOYEE NAME	MANAGER ID
1	Alex Green	NULL
2	Brian Lee	1
3	Carol Ray	1
4	David Kim	2
5	Eva Smith	2

```
CREATE DATABASE EMPLOYEESDATASET;

USE EMPLOYEESDATASET;

CREATE TABLE Employees (

   EmployeeID INT PRIMARY KEY,

   EmployeeName VARCHAR(50),

   ManagerID INT

);

 INSERT INTO Employees VALUES

(1, 'Alex Green', NULL),

(2, 'Brian Lee', 1),

(3, 'Carol Ray', 1),

(4, 'David Kim', 2),

(5, 'Eva Smith', 2);
```



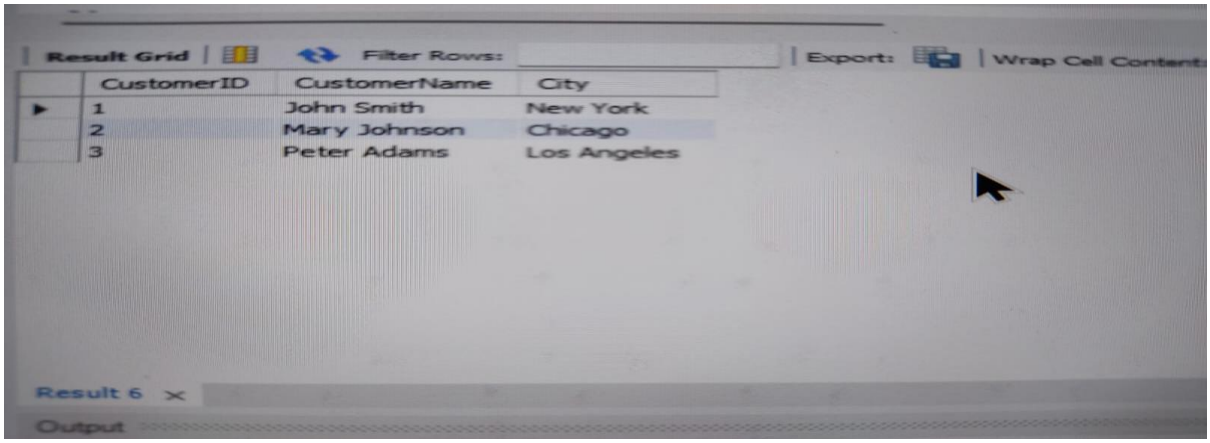
Q NO 1: Retrieve all customers who have placed at least one order.

SOL: SELECT DISTINCT c.*

FROM Customers c

INNER JOIN Orders o

ON c.CustomerID = o.CustomerID;



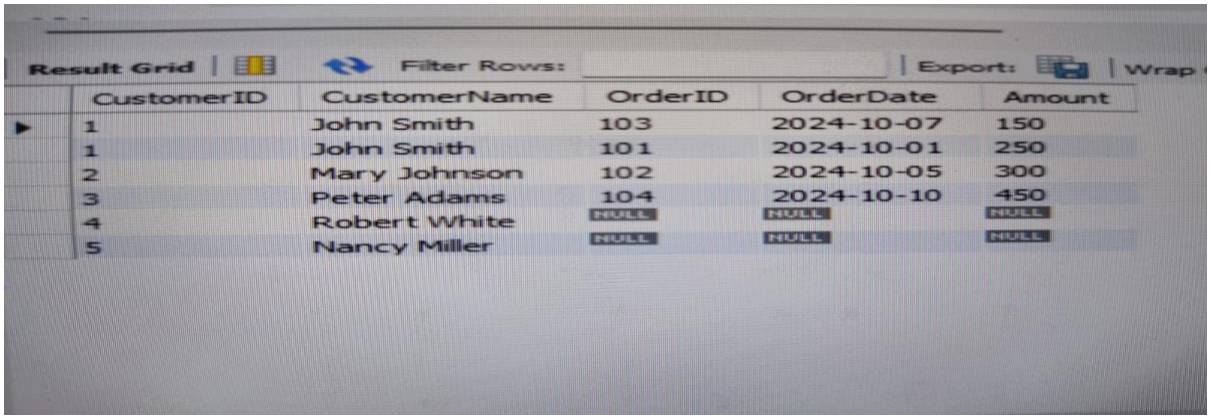
Q NO 2:Retrieve all customers and their orders, including customers who have not placed any orders.

SOL: SELECT c.CustomerName, o.OrderID, o.Amount

FROM Customers c

LEFT JOIN Orders o

ON c.CustomerID = o.CustomerID;



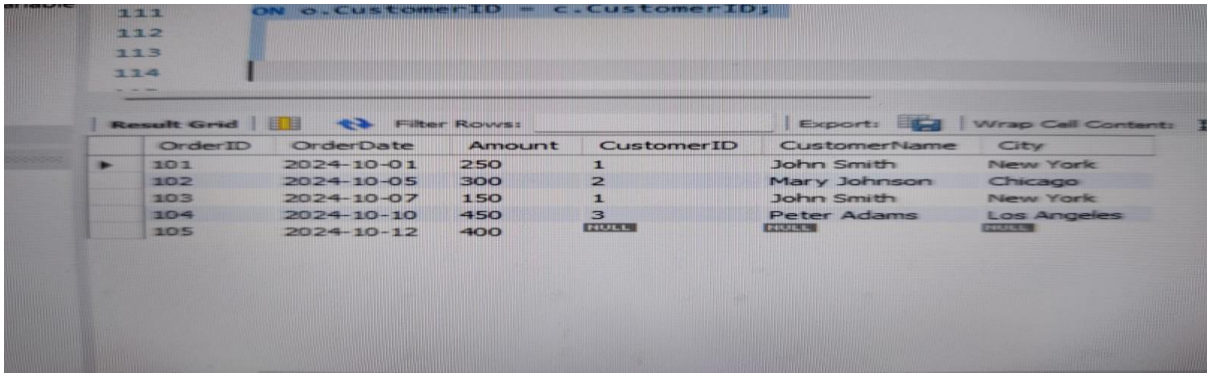
Q NO 3: Retrieve all orders and their corresponding customers, including orders placed by unknown customers.

SOL: SELECT o.OrderID, c.CustomerName, o.Amount

FROM Orders o

LEFT JOIN Customers c

ON o.CustomerID = c.CustomerID;



Q NO 4:Display all customers and orders, whether matched or not.

SOL: SELECT c.CustomerName, o.OrderID

FROM Customers c

LEFT JOIN Orders o

ON c.CustomerID = o.CustomerID

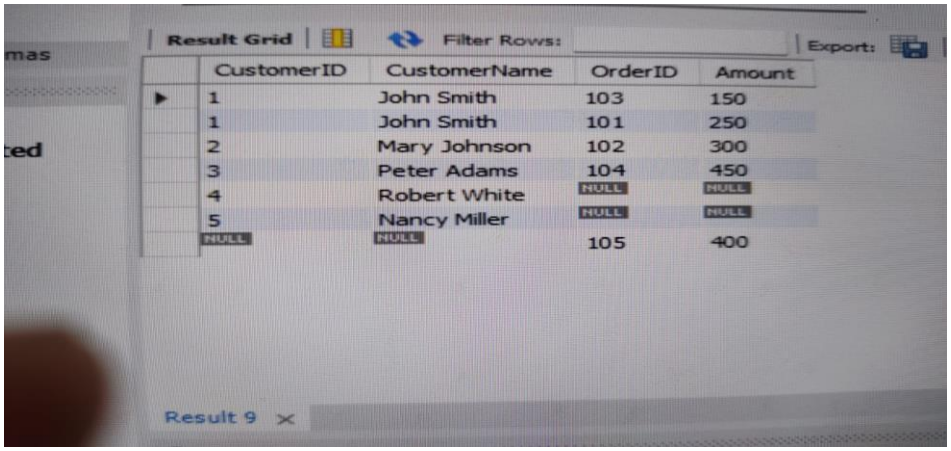
UNION

SELECT c.CustomerName, o.OrderID

FROM Customers c

RIGHT JOIN Orders o

ON c.CustomerID = o.CustomerID;



Q NO 5: Find customers who have not placed any orders.

SOL: SELECT

c.CustomerID,

c.CustomerName,

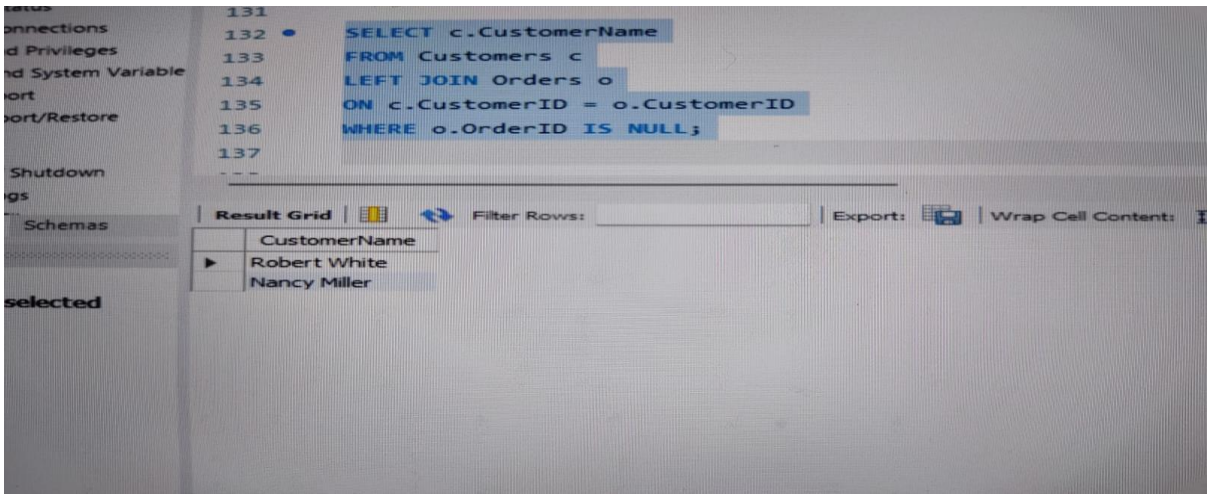
c.City

FROM Customers c

LEFT JOIN Orders o

ON c.CustomerID = o.CustomerID

WHERE o.OrderID IS NULL;



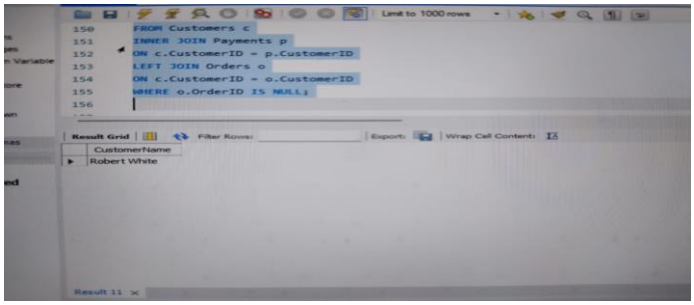
Q NO 6: Retrieve customers who made payments but did not place any orders.

SOL: SELECT DISTINCT

c.CustomerID,

c.CustomerName,

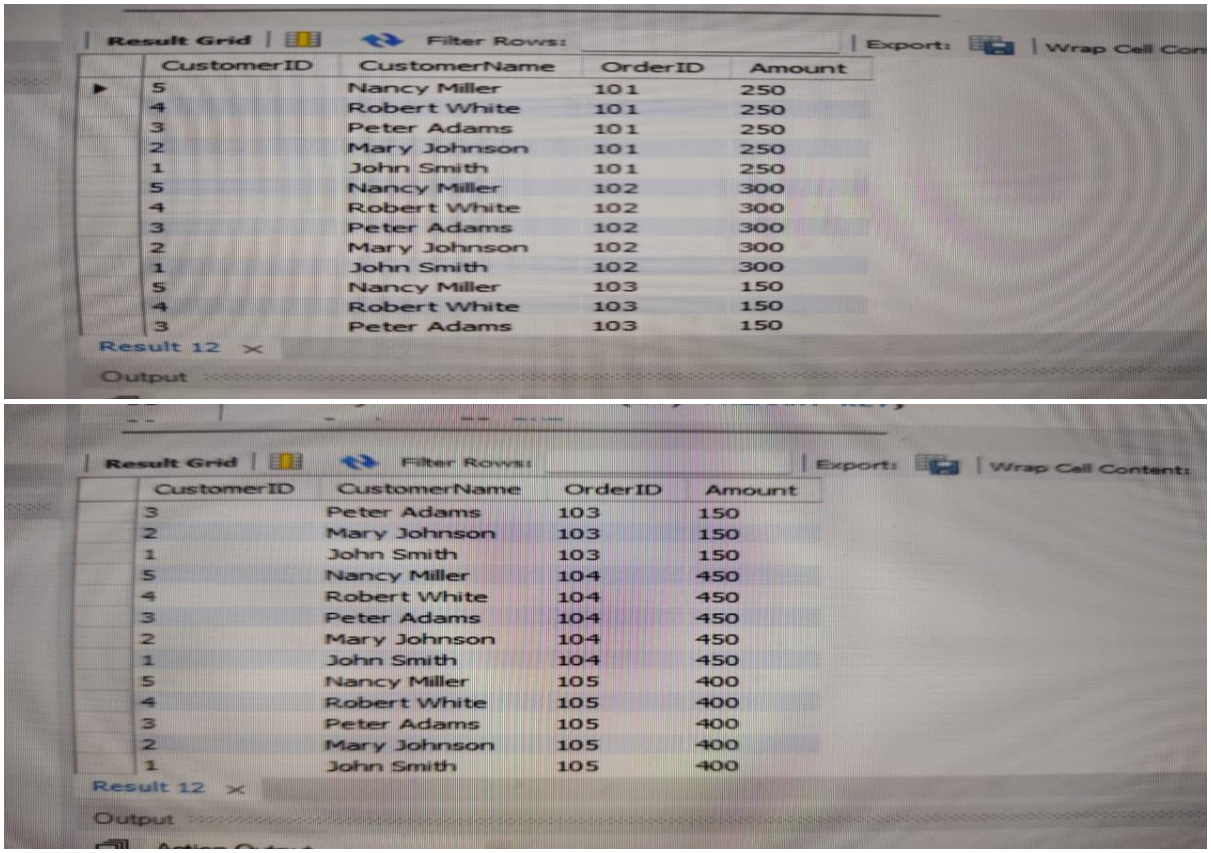
```
    c.City
FROM Customers c
INNER JOIN Payments p
ON c.CustomerID = p.CustomerID
LEFT JOIN Orders o
ON c.CustomerID = o.CustomerID
WHERE o.OrderID IS NULL;
```



Q NO 7: Generate a list of all possible combinations between Customers and Orders.

SOL:

```
SELECT
    c.CustomerID,
    c.CustomerName,
    o.OrderID,
    o.Amount
FROM Customers c
CROSS JOIN Orders o;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CustomerID	CustomerName	OrderID	Amount
5	Nancy Miller	101	250
4	Robert White	101	250
3	Peter Adams	101	250
2	Mary Johnson	101	250
1	John Smith	101	250
5	Nancy Miller	102	300
4	Robert White	102	300
3	Peter Adams	102	300
2	Mary Johnson	102	300
1	John Smith	102	300
5	Nancy Miller	103	150
4	Robert White	103	150
3	Peter Adams	103	150
2	Mary Johnson	103	150
1	John Smith	103	150
5	Nancy Miller	104	450
4	Robert White	104	450
3	Peter Adams	104	450
2	Mary Johnson	104	450
1	John Smith	104	450
5	Nancy Miller	105	400
4	Robert White	105	400
3	Peter Adams	105	400
2	Mary Johnson	105	400
1	John Smith	105	400

Result 12 | Output

Q NO 8: Show all customers along with order and payment amounts in one table.

SOL: SELECT

c.CustomerName,

o.Amount AS OrderAmount,

p.Amount AS PaymentAmount

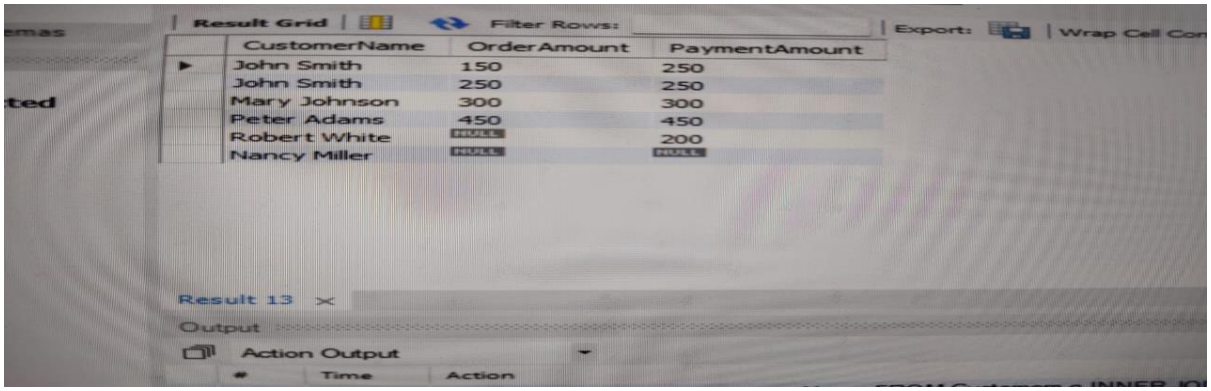
FROM Customers c

LEFT JOIN Orders o

ON c.CustomerID = o.CustomerID

LEFT JOIN Payments p

ON c.CustomerID = p.CustomerID;



Q NO 9: Retrieve all customers who have both placed orders and made payments.

SOL: SELECT DISTINCT c.CustomerName

FROM Customers c

INNER JOIN Orders o

ON c.CustomerID = o.CustomerID

INNER JOIN Payments p

ON c.CustomerID = p.CustomerID;