Create Database and Table:-

```sql
create database data_digger_db;

use data_digger_db;

CREATE TABLE Customers (
    Customer_ID INT PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Email VARCHAR(100) UNIQUE,
    Address Text
);

CREATE TABLE Orders (
    Order_ID INT PRIMARY KEY,
    Customer_ID INT,
    Order_Date DATE NOT NULL,
    TotalAmount DECIMAL(10,2),
    FOREIGN KEY (Customer_ID)
        REFERENCES Customers(Customer_ID)
        ON DELETE CASCADE
);
```

```sql
CREATE TABLE Products (
    Product_ID INT PRIMARY KEY,
    Product_Name VARCHAR(100) NOT NULL,
    Price DECIMAL(10,2) NOT NULL,
    Stock INT NOT NULL
);

CREATE TABLE OrderDetails (
    OrderDetail_ID INT PRIMARY KEY,
    Order_ID INT,
    Product_ID INT,
    Quantity INT NOT NULL,
    SubTotal DECIMAL(10,2),
    FOREIGN KEY (Order_ID)
        REFERENCES Orders(Order_ID)
        ON DELETE CASCADE,
    FOREIGN KEY (Product_ID)
        REFERENCES Products(Product_ID)
        ON DELETE CASCADE
);
```

Insert Data :-

```sql
INSERT INTO Customers (Customer_ID, Name, Email, Address) VALUES
(1, 'Alice', 'alice@gmail.com', 'Delhi'),
(2, 'Bob', 'bob@gmail.com', 'Mumbai'),
(3, 'Charlie', 'charlie@gmail.com', 'Bangalore'),
(4, 'David', 'david@gmail.com', 'Chennai'),
(5, 'Emma', 'emma@gmail.com', 'Pune');


INSERT INTO Orders (Order_ID, Customer_ID, Order_Date, TotalAmount) VALUES
(1001, 1, '2025-01-10', 56500.00),
(1002, 2, '2025-01-12', 20000.00),
(1003, 3, '2025-01-15', 2300.00),
(1004, 4, '2025-01-18', 800.00),
(1005, 5, '2025-01-20', 1000.00),
(1006, 1, '2025-02-02', 1500.00),
(1007, 2, '2025-02-05', 55000.00),
(1008, 3, '2025-02-10', 500.00);
```

```sql
INSERT INTO Products (Product_ID, Product_Name, Price, Stock) VALUES
(101, 'Laptop', 55000.00, 10),
(102, 'Mobile', 20000.00, 25),
(103, 'Headphones', 1500.00, 50),
(104, 'Keyboard', 800.00, 40),
(105, 'Mouse', 500.00, 60);


INSERT INTO OrderDetails (OrderDetail_ID, Order_ID, Product_ID, Quantity, SubTotal) VALUES
(1, 1001, 101, 1, 55000.00),
(2, 1002, 102, 1, 20000.00),
(3, 1003, 103, 1, 1500.00),
(4, 1004, 104, 1, 800.00),
(5, 1005, 105, 2, 1000.00),
(6, 1006, 103, 1, 1500.00),
(7, 1007, 101, 1, 55000.00),
(8, 1008, 105, 1, 500.00);
```

Display Table Records:-

```
86    # Retrieve all customer details.
87 •  select * From Customers;
```

Customer_ID	Name	Email	Address
1	Alice	alice@gmail.com	Delhi
2	Bob	bob@gmail.com	Mumbai
3	Charlie	charlie@gmail.com	Bangalore
4	David	david@gmail.com	Chennai
5	Emma	emma@gmail.com	Pune
NULL	NULL	NULL	NULL

```
81    # Retrieve all records from Orders table
82 •  select * from Orders;
```

Order_ID	Customer_ID	Order_Date	TotalAmount
1001	1	2025-01-10	56500.00
1002	2	2025-01-12	20000.00
1003	3	2025-01-15	2300.00
1004	4	2025-01-18	800.00
1005	5	2025-01-20	1000.00
1006	1	2025-02-02	1500.00
1007	2	2025-02-05	55000.00
1008	3	2025-02-10	500.00
NULL	NULL	NULL	NULL

```sql
# Retrieve all records from Products table
select * from Products;
```

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	20000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

```sql
# Retrieve all records from OrderDetails table
select * from OrderDetails;
```

OrderDetail_ID	Order_ID	Product_ID	Quantity	SubTotal
1	1001	101	1	55000.00
2	1002	102	1	20000.00
3	1003	103	1	1500.00
4	1004	104	1	800.00
5	1005	105	2	1000.00
6	1006	103	1	1500.00
7	1007	101	1	55000.00
8	1008	105	1	500.00
NULL	NULL	NULL	NULL	NULL

SQL Queries for Database Operations:-

```
86      # Retrieve all customer details.
87 •    select * From Customers;
```

Customer_ID	Name	Email	Address
1	Alice	alice@gmail.com	Delhi
2	Bob	bob@gmail.com	Mumbai
3	Charlie	charlie@gmail.com	Bangalore
4	David	david@gmail.com	Chennai
5	Emma	emma@gmail.com	Pune
NULL	NULL	NULL	NULL

```
89      # Update a customer's address.
90 •    Update Customers Set Address = "Gujrat" where Customer_ID = 1;
```

Customer_ID	Name	Email	Address
1	Alice	alice@gmail.com	Gujrat
2	Bob	bob@gmail.com	Mumbai
3	Charlie	charlie@gmail.com	Bangalore
4	David	david@gmail.com	Chennai
5	Emma	emma@gmail.com	Pune
NULL	NULL	NULL	NULL

```
96      # Delete a customer using their CustomerID.
97 •    Delete From Customers where Customer_Id = 5;
```

Customer_ID	Name	Email	Address
1	Alice	alice@gmail.com	Gujrat
2	Bob	bob@gmail.com	Mumbai
3	Charlie	charlie@gmail.com	Bangalore
4	David	david@gmail.com	Chennai
NULL	NULL	NULL	NULL

```
99    # Display all customers whose name is 'Alice'.
100 • Select * From Customers where Name = "Alice";
```

Customer_ID	Name	Email	Address
1	Alice	alice@gmail.com	Gujrat
NULL	NULL	NULL	NULL

```
102   # Retrieve all orders made by a specific customer
103 • select * From Orders Where Customer_Id = 2;
```

Order_ID	Customer_ID	Order_Date	TotalAmount
1002	2	2025-01-12	20000.00
1007	2	2025-02-05	55000.00
NULL	NULL	NULL	NULL

```
105   # Update an order's total amount
106 • update Orders Set TotalAmount = 1000 where Order_Id = 1004;
```

Before Update

Order_ID	Customer_ID	Order_Date	TotalAmount
1001	1	2025-01-10	56500.00
1002	2	2025-01-12	20000.00
1003	3	2025-01-15	2300.00
1004	4	2025-01-18	300.00
1006	1	2025-02-02	1500.00
1007	2	2025-02-05	55000.00
1008	3	2025-02-10	500.00
NULL	NULL	NULL	NULL

After Update

Order_ID	Customer_ID	Order_Date	TotalAmount
1001	1	2025-01-10	56500.00
1002	2	2025-01-12	20000.00
1003	3	2025-01-15	2300.00
1004	4	2025-01-18	1000.00
1006	1	2025-02-02	1500.00
1007	2	2025-02-05	55000.00
1008	3	2025-02-10	500.00
NULL	NULL	NULL	NULL

```
108     # Delete an order using its OrderID
109 •   delete From Orders where Order_Id = 1008;
```

Before Delete

Order_ID	Customer_ID	Order_Date	TotalAmount
1001	1	2025-01-10	56500.00
1002	2	2025-01-12	20000.00
1003	3	2025-01-15	2300.00
1004	4	2025-01-18	1000.00
1006	1	2025-02-02	1500.00
1007	2	2025-02-05	55000.00
1008	3	2025-02-10	500.00
NULL	NULL	NULL	NULL

After Delete

Order_ID	Customer_ID	Order_Date	TotalAmount
1001	1	2025-01-10	56500.00
1002	2	2025-01-12	20000.00
1003	3	2025-01-15	2300.00
1004	4	2025-01-18	1000.00
1006	1	2025-02-02	1500.00
1007	2	2025-02-05	55000.00
NULL	NULL	NULL	NULL

```
111     # Retrieve orders placed in the last 30 days
112 •   SELECT * FROM Orders
113     WHERE Order_Date >= DATE_SUB(NOW(), INTERVAL 30 DAY);
```

Order_ID	Customer_ID	Order_Date	TotalAmount
NULL	NULL	NULL	NULL

```
115     # Retrieve the highest, lowest, and average order amount
116 •   SELECT MAX(TotalAmount) AS HighestAmount, MIN(TotalAmount) AS LowestAmount,
117         AVG(TotalAmount) AS AverageAmount
118     FROM Orders;
```

HighestAmount	LowestAmount	AverageAmount
56500.00	1000.00	22716.666667

```
120     -- Retrieve all products sorted by price in descending order
121 •   SELECT * FROM Products
122     ORDER BY Price DESC;
```

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	20000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

```
124     -- Update the price of a specific product
125 •   UPDATE Products
126     SET Price = 18000
127     WHERE Product_ID = 102;
```

Before Update

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	20000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

After Update

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	18000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

```
129 •   Insert Into Products values(106,"SSD",1200,0);
130
131     -- Delete a product if it's out of stock
132 •   DELETE FROM Products
133     WHERE Product_Id=106;
```

Before Delete

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	18000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
106	SSD	1200.00	0
NULL	NULL	NULL	NULL

After Delete

Product_ID	Product_Name	Price	Stock
101	Laptop	55000.00	10
102	Mobile	18000.00	25
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

```sql
-- Retrieve products whose price is between ₹500 and ₹2000
Select * From Products where Price between 500 and 2000;
```

Product_ID	Product_Name	Price	Stock
103	Headphones	1500.00	50
104	Keyboard	800.00	40
105	Mouse	500.00	60
NULL	NULL	NULL	NULL

```sql
-- Retrieve the most expensive and cheapest product using MAX() and MIN()
select Max(Price) As Most_Expensive, Min(Price) As Cheapest From Products;
```

Most_Expensive	Cheapest
55000.00	500.00

```sql
-- Retrieve all order details for a specific order
select * From OrderDetails where Order_Id = 1001;
```

OrderDetail_ID	Order_ID	Product_ID	Quantity	SubTotal
1	1001	101	1	55000.00
NULL	NULL	NULL	NULL	NULL

```sql
-- Calculate the total revenue generated from all orders using SUM()
select Sum(Quantity * SubTotal)As Total_Revenue
From OrderDetails;
```

Total_Revenue
133800.00

```sql
-- Retrieve the top 3 most ordered products
select Product_Id,sum(Quantity) As Total_Quantity
From OrderDetails
group by Product_Id
order by Total_Quantity Desc
limit 3;
```

Product_Id	Total_Quantity
101	2
103	2
102	1

```sql
-- Count how many times a specific product has been sold using COUNT()
select Product_Id, Count(*) As Sold_Time
From OrderDetails
Where Product_Id = 101
group by Product_Id;
```

Product_Id	Sold_Time
101	2