# STORE DATABASE

**SQL Project** 

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# **Introduction:**

The SQL Store Database Project is designed to create a database system that can manage the inventory, sales, and customer information for a hypothetical retail store. This project aims to provide an efficient, user-friendly, and secure solution for managing store data. The Store Database is designed to streamline the operations of the store by automating many of the manual processes involved in managing inventory and sales.

The project consists of several components, including a database schema, Entity Relationship Diagram, Tables, SQL different queries. The database schema includes tables, attributes, and relationships that are designed to store and retrieve data efficiently. The data modeling process involves identifying data entities, attributes, and relationships and normalizing the data to ensure data integrity and security.

The implementation of the Store Database includes creating the database schema, populating the database with sample data, and implementing the necessary queries and reports. Using this Database schema allowing store managers and employees to access and update the data in the database quickly.

The SQL Store Database Project is an essential tool for managing store operations, including inventory management, sales, and customer relationship management. By automating many of the manual processes involved in managing store data, the Store Database frees up valuable time and resources that can be used to improve other aspects of the business.

Overall, the SQL Store Database Project is an innovative and efficient solution for managing store data. It is an excellent example of how technology can be used to streamline operations and improve the overall performance of a business.

# 1. Entity Relationship Diagram:-



# 2. Database Design:

**Database: Store** 

#### **Tables:**

- a. Order\_Tbl
- b. Customer
- c. Product
- d. Category
- e. Stock
- f. Supplier
- g. Delivery

# 3. Data Definition Language (DDL)

#### A. Create Database

```
MariaDB [(none)]> create Database Store;
Query OK, 1 row affected (0.009 sec)
```

```
MariaDB [(none)]> use Store;
Database changed
```

#### **B. Create Tables**

#### a. Customer

```
MariaDB [store]> CREATE TABLE Customer (
-> ID INT PRIMARY KEY,
-> First_Name Varchar(20) NOT NULL ,
-> Last_Name Varchar(20) NOT NULL ,
-> Gender varchar(10) ,
-> Address Varchar(100) NOT NULL ,
-> City varchar(20) ,
-> Mobile_No INT NOT NULL ,
-> Email varchar(20) default 'abc@gmail.com'
```

```
MariaDB [store]> desc customer;
 Field
                               | Null | Key | Default
              Type
                                                               Extra
              | int(11)
                               NO
                                       PRI NULL
 First Name | varchar(20)
                               NO
                                               NULL
 Last_Name | varchar(20) | NO
Gender | varchar(10) | YES
Address | varchar(100) | NO
                                               NULL
                               YES
                                               NULL
                                               NULL
              varchar(20)
 City
                                YES
                                              NULL
 Mobile NO | varchar(11)
                                NO
                                              NULL
  Email
              varchar(20)
                               YES
                                               abc@gmail.com
```

## b. Order\_Tbl

```
MariaDB [Store]> CREATE TABLE OrderData (
          OrderID int PRIMARY KEY Auto increment,
   ->
          CustomerID int ,
          ProductID int ,
   ->
          O Date Date DEFAULT Curdate(),
   ->
          Quantity int ,
   ->
   ->
          TotalAmount int NOT NULL,
          Paid char(3) default 'NO',
   ->
          Mode varchar(10) NOT NULL,
          FOREIGN KEY(CustomerID) REFERENCES Customer(ID) ON Delete Cascade,
          FOREIGN KEY(ProductID) REFERENCES Product(ID) ON Delete Cascade
   -> );
```

MariaDB [store]> desc order_Tbl;									
Field	Туре	Null		Default	Extra				
OrderID CustomerID ProductID O_Date Quantity TotalAmount Paid	int(11) int(11) int(11) date int(11) int(11) char(3) varchar(10)	NO YES YES YES YES NO YES	PRI   MUL   MUL   HUL		auto_increment           				

## c. Category

```
MariaDB [Store]> CREATE TABLE Category (
-> ID Int PRIMARY KEY Auto_increment ,
-> Catg_Name Varchar(20) UNIQUE );
Query OK, 0 rows affected (0.037 sec)
```

#### d. Product

MariaDB [store]> desc Product;									
Field	Туре			Default					
ID   Catg_ID   Product_Name   Product_Details   Price	int(11)   int(11)   varchar(50)   varchar(100)   decimal(10,2)	NO   NO   YES   YES   YES	PRI   MUL 	NULL					

#### e. Stock

```
MariaDB [Store]> CREATE TABLE Stock (
-> Id VarChar(10) PRIMARY KEY,
-> Product_ID Int ,
-> Supplier_ID VarChar(10),
-> Stock_Qty_Left int NOT NULL,
-> FOREIGN KEY(Product_ID) REFERENCES Product(ID),
-> FOREIGN KEY(Supplier_ID) REFERENCES Supplier(ID)
-> );
Query OK, 0 rows affected (0.028 sec)
```

```
MariaDB [store]> desc stock
   -> ;
 Field
                             | Null | Key | Default | Extra
                 Type
                 varchar(10) | NO
                                      PRI | NULL
 Product ID
                int(11)
                              YES
                                      MUL
                                           NULL
 Supplier ID
                | varchar(10) | YES
                                      MUL
                                           NULL
 Stock Qty Left | int(11)
                               NO
                                           NULL
```

## f. Supplier

```
MariaDB [Store]> CREATE TABLE Supplier (
-> Id Varchar(10) PRIMARY KEY,
-> Name Varchar(20) NOT NULL,
-> Sup_Address Varchar(100) NOT NULL,
-> Contact Varchar(20) NOT NULL,
-> Unit_supplied int NOT NULL,
-> Per_Unit_Cost decimal(10,2),
-> S_Date DATE,
-> Lead_time Varchar(20)
->);
Query OK, 0 rows affected (0.022 sec)
```

```
MariaDB [store]> desc Supplier;
 Field
               Type
                              | Null | Key | Default | Extra
 Ιd
               | varchar(10)
                               NO
                                      PRI
                                           NULL
 Name
               varchar(20)
                               NO
                                           NULL
 Sup Address | varchar(100)
                               NO
                                           NULL
              | varchar(20)
 Contact
                              NO
                                           NULL
 Unit supplied | int(11)
                              NO
                                           NULL
 Per Unit Cost | decimal(10,2)
                             YES
                                           NULL
 S Date
               date
                              YES
                                           NULL
               | varchar(20)
 Lead time
                              YES
                                           NULL
```

## g. Delivery

```
MariaDB [Store]> CREATE TABLE Delivery (
          ID Varchar(10) PRIMARY KEY ,
    ->
          order ID int ,
          Cust ID int ,
    ->
         D Date Date DEFAULT DATE ADD(CURDATE(), INTERVAL 15 DAY),
   ->
          D_Charges INT ,
    ->
         D Status Varchar(20) NOT NULL ,
   ->
          FOREIGN KEY(order ID) REFERENCES Order Tbl(orderID) ON DELETE Cascade,
   ->
          FOREIGN KEY(Cust_ID) REFERENCES Customer(ID) ON DELETE Cascade
   -> );
```

MariaDB [store]> desc delivery;									
Field	Туре	Null	Key	Default	Extra				
+	varchar(10)   int(11)   int(11)	NO YES YES	PRI     MUL	NULL   NULL   NULL   NULL   (curdate() + interval 15 day)   NULL   NULL	++ 				

#### C. Alter Table:

#### a. Alter Column Name

```
[Store]> Alter Table Customer change Moible_No Mobile_No INT;
, 0 rows affected (0.033 sec)
```

#### b. Alter Add Column

```
Alter Table Customer add Mobile_NO varchar(11) NOT NULL after City;
```

## c. Alter Change Datatype

```
MariaDB [Store]> Alter Table Customer modify Mobile_No Varchar(10); Query OK, 6 rows affected (0.056 sec)
```

## d. Alter Delete Column

```
MariaDB [Store]> Alter Table Customer drop Mobile_no;
Query OK, 0 rows affected (0.018 sec)
```

#### e. Alter Table Name

MariaDB [Store]> Alter Table OrderData RENAME to Order\_Tbl; Query OK, 0 rows affected (0.011 sec)

# 4. Data Manipulation language (DML)

#### A. Insert

Query OK, 1 row affected (0.011 sec)

```
MariaDB [Store]> INSERT INTO Customer (Id, First_Name, Last_Name,Gender,Address, City, Mobile No ,Email) VALUES
     -> (1001, 'John', 'Done', 'Male','12, Juhu Road, Maharashtra - 400049', 'Mumbai', 2525896329, 'John@gmail.com'),
MariaDB [Store]> INSERT INTO Order Tbl
     -> (CustomerID, ProductID, O_Date, Quantity, Total Amount, Paid, Mode)
     -> VALUES(1001,101,'2022-12-24',1,30200,'YES','Online');
Query OK, 1 row affected (0.011 sec)
MariaDB [Store]> INSERT INTO Category (Catg_Name) VALUES ('TV'),('Smart_Phones'),('Refrigerator');
Query OK, 3 rows affected (0.012 sec)
MariaDB [Store]> INSERT INTO Product (ID,Catg_ID,Product_Name,Product_Details,Price)
   -> VALUES
   -> (101,1, 'Samsung Crystal 4K ', '108 cm (43 inch) Ultra HD(4K)LED Smart Tizen TV', 30000);
MariaDB [Store]> INSERT INTO Stock (Id,Product ID,Supplier ID,Stock Qty Left)
     -> VALUES('S101',101,'SAM-1C',10);
Query OK, 1 row affected (0.010 sec)
MariaDB [Store]> INSERT INTO Delivery(ID,Order_ID,Cust_ID,D_Date,D_Charges,D_Status)
    -> values('D-1',1,1001,'2022-12-25',200,'Delivered');
Query OK, 1 row affected (0.010 sec)
MariaDB [Store]> INSERT INTO Supplier(ID,Name,Sup Address,Contact,Unit Supplied,Per Unit Cost,S Date,Lead Time)
  -> VALUES
```

-> ('SAM-1C', 'SAMSUMG TV Pvt.Ltd.', '123, Carter Road, Bandra West, Mumbai, Maharashtra 400050', '998579632',15,25000, '2022-10-11', '05 Days');

## B. Update

```
MariaDB [store]> update order_tbl set paid='YES' where orderID=5;
Query OK, 1 row affected (0.018 sec)
```

```
MariaDB [Store]> Update Customer set Mobile_NO='2525896329' where ID=1001;
Query OK, 1 row affected (0.011 sec)
```

#### C. Delete

```
MariaDB [store]> Delete from customer where Id=1010;
Query OK, 1 row affected (0.011 sec)
```

# 5. Data Query Language (DQL)

# A. Select Query

```
MariaDB [store]> select * from order_Tbl;
 OrderID | CustomerID | ProductID | O Date
                                              | Quantity | TotalAmount | Paid | Mode
                                                                             | Online
                 1001
                             101 | 2022-12-24 |
                                                                30200 YES
                             202 | 2022-12-24 |
                                                                               Online
       2
                 1001
                                                      1
                                                                80200 YES
                             102 | 2023-01-02 |
                                                                               Online
                 1002
                                                      1 |
                                                                59200
                                                                        YES
       4
                 1003
                             301 | 2023-01-15 |
                                                      1
                                                                25400
                                                                        YES
                                                                               Online
                                                                               COD
                 1004
                             201 | 2023-02-01 |
                                                      1
                                                                27000
                                                                        YES
                             203
                                                       2
                                                                               COD
       6
                 1005
                                   2023-02-24
                                                                38200
                                                                        NO
                             104
                                   2023-02-24
                                                                             COD
                 1006
                                                                20000
                                                                        NO
```

## **B. Order By Query ASC**

```
MariaDB [store]> select Id, Product Name , Price from Product order by Price Asc;
 Id | Product Name
 302 | SAMSUNG 189 L
                                18000.00
 104 | OnePlus Y1
                                18999.00
 203 | OnePlus Nord CE 2 Lite 5G | 19000.00
 301 | SAMSUNG 253 L
                                 24990.00
 201 | POCO X5 Pro
                                25000.00
 204 | OnePLus 10T
                                30000.00
                                30000.00
 101 | Samsung Crystal 4K
 103 | Mi X Series
                                37999.00
 102 | OnePlus U1S
                                59000.00
 202 | SAMSUNG Galaxy S23 5G
                               79999.00
```

# C. Order By Query DESC

```
MariaDB [store]> select Id, Product Name , Price from Product order by Price desc;
 Id | Product Name
 202 | SAMSUNG Galaxy S23 5G
                                   79999.00
  102 | OnePlus U1S
                                   59000.00
 103 | Mi X Series
                                 37999.00
  204 OnePLus 10T
                                   30000.00
  101 | Samsung Crystal 4K
                                  30000.00
  201 | POCO X5 Pro
                                   25000.00
 301 | SAMSUNG 253 L
                                  24990.00
  203 | OnePlus Nord CE 2 Lite 5G | 19000.00
  104 | OnePlus Y1
                                  18999.00
  302 | SAMSUNG 189 L
                                  18000.00
```

#### D. Order By Two Column

```
MariaDB [store]> select ID, Product Name, Price
    -> from product Order by price desc, Product name asc;
                                  Price
  ID | Product Name
 202 | SAMSUNG Galaxy S23 5G
                                  79999.00
 102 | OnePlus U1S
                                  59000.00
                                 37999.00
30000.00
30000.00
 103 | Mi X Series
  204 | OnePLus 10T
 101 | Samsung Crystal 4K
  201 | POCO X5 Pro
                                  25000.00
  301 | SAMSUNG 253 L
                                  24990.00
  203 | OnePlus Nord CE 2 Lite 5G | 19000.00
 104 | OnePlus Y1
                                   18999.00
  302 | SAMSUNG 189 L
                                  18000.00
```

## **E. Limit Query**

## F. Select Query with Specific Column

```
MariaDB [store]> select ID, Name, Sup_Address,Contact from Supplier;
 ID
           Name
                                Sup_Address
                                                                                        Contact
 OPL-1U OnePlus_TV 456, SV Road, Andheri West, Mumbai,Maharashtra 400058
                                                                                         9687851298
           | REDMI_TV | 1213, MG Road, Goregaon West, Mumbai, Maharashtra 400062
 REDMI-1X
                                                                                         3569874526
 REDMI-2PX | REDMI SM
                                | 1214, MG Road, Goregaon West, Mumbai, Maharashtra 400062
                                                                                         65478521569
 SAM-1C | SAMSUMG_TV Pvt.Ltd. | 123, Carter Road, Bandra West, Mumbai, Maharashtra 400050 | 998579632
 SAM-2S23 | SAMSUMG_SM Pvt.Ltd. | 124, Carter Road, Bandra West, Mumbai, Maharashtra 400050 | 78569845326
 SAM-3-253L | SAMSUMG_REF Pvt.Ltd. | 125, Carter Road, Bandra West, Mumbai, Maharashtra 400050 | 54785147859
```

## **G. Distinct Query**

# 6. Where Clause with Comparison Operator

```
MariaDB [store]> select order_id , D_charges,D_status from Delivery where D_status = 'NULL';

+-----+
| order_id | D_charges | D_status |

+-----+
| 6 | 200 | NULL |
| 7 | 100 | NULL |

+------+
```

# 7. Logical Operator

#### A. AND

```
MariaDB [store]> select First_Name , Last_Name, gender,City from Customer where Gender='Male' and City='Mumbai';
+------+
| First_Name | Last_Name | gender | City |
+------+
| John | Done | Male | Mumbai |
| Karan | Kapoor | Male | Mumbai |
```

#### B. OR

## C. NOT

# 8. Aggregate Function

#### A. Count

## B. Average

### C. Sum

## D. Min

```
MariaDB [store]> select min(Price) 'Minimum Price' from product;
+------+
| Minimum Price |
+-----+
| 18000.00 |
+-----+
```

#### E. Max

# 9. Group By Clause

# A. With Aggregate Function

```
MariaDB [Store]> select Gender, count(*) from Customer Group BY Gender;

+-----+

| Gender | count(*) |

+----+

| Female | 3 |

| Male | 3 |

+-----+
```

#### **B.** With Join

## C. With Having Clause

# 10. Like Operator

# 11. Union

```
MariaDB [store]> select product_name from product
   -> select name from supplier;
product_name
| Samsung Crystal 4K
OnePlus U1S
 Mi X Series
 OnePlus Y1
 POCO X5 Pro
 SAMSUNG Galaxy S23 5G
 OnePlus Nord CE 2 Lite 5G
 OnePLus 10T
 SAMSUNG 253 L
 SAMSUNG 189 L
OnePlus TV
REDMI TV
REDMI SM
SAMSUMG TV Pvt.Ltd.
SAMSUMG SM Pvt.Ltd.
SAMSUMG REF Pvt.Ltd.
```

#### 12. Joins

```
MariaDB [store]> select Product Name, Catg Name, Price from Product inner Join Category ON product.Catg ID = Category.ID;
Product Name
                          | Catg Name | Price
Samsung Crystal 4K
                          | TV
| TV
                                        1 30000.00
OnePlus U1S
                                        59000.00
                          TV
Mi X Series
                                        37999.00
OnePlus Y1
                          l TV
                                        18999.00
POCO X5 Pro
                           Smart_Phones | 25000.00
                          | Smart_Phones | 79999.00
SAMSUNG Galaxy S23 5G
OnePlus Nord CE 2 Lite 5G | Smart Phones | 19000.00
                            Smart_Phones | 30000.00
OnePLus 10T
SAMSUNG 253 L
                            Refrigerator |
                                          24990.00
 SAMSUNG 189 L
                           Refrigerator | 18000.00
```

```
MariaDB [store]> select orderID ,Concat(First Name,' ',Last Name), O Date,Product name,catg name,totalAmount
   -> from order Tbl o
   -> join customer c on o.customerid =c.id
   -> join product p on o.productid =p.id
   -> join Category c1 on p.Catg ID = c1.ID;
 catg_name
                                                                                 | totalAmount
    -----
      4 | James Brown
                                     2023-01-15 | SAMSUNG 253 L
                                                                      Refrigerator |
                                                                                       25400
      2 | John Done
                                     2022-12-24 | SAMSUNG Galaxy S23 5G
                                                                      Smart Phones
                                                                                       80200
      5 | Linda Jonas
                                     2023-02-01 | POCO X5 Pro
                                                                      Smart Phones
                                                                                       27000
      6 | Hina Sharma
                                     2023-02-24 | OnePlus Nord CE 2 Lite 5G | Smart Phones
                                                                                       38200
                                     2022-12-24 | Samsung Crystal 4K
      1 | John Done
                                                                                       30200
                                                                      TV
                                     2023-01-02 | OnePlus U1S
      3 | Mary Smith
                                                                      TV
                                                                                       59200
                                     2023-02-24 | OnePlus Y1
                                                                                       20000
      7 | Karan Kapoor
                                                                      TV
```

```
MariaDB [store]> select Concat(First_name,' ',Last_Name), Count(CustomerID) Total_Order, City,Email
    -> from Customer
   -> Inner Join Order Tbl
   -> on Customer.ID = Order Tbl.CustomerID
   -> Group by ID;
 Concat(First_name,' ',Last_Name) | Total_Order | City | Email
                                                           John@gmail.com
  John Done
                                                 | Mumbai |
 Mary Smith
                                                  Mumbai |
                                                           Mary@gmail.com
  James Brown
                                                  Thane
                                                            James@gmail.com
  Linda Jonas
                                              1
                                                  Mumbai
                                                            Jonas@gmail.com
 Hina Sharma
                                               1 | Thane
                                                           hinas@gmail.com
                                                            Karankk@gmail.com
  Karan Kapoor
                                                  Mumbai
```

# 13. Subquery

#### **14.** View

#### A. Create View

```
MariaDB [store]> Create View VwCust as select ID, First_Name, Gender,City from customer;
Query OK, 0 rows affected (0.009 sec)
```

```
MariaDB [store]> show tables;
+------
| Tables_in_store |
+------
| category |
| customer |
| delivery |
| order_tbl |
| product |
| stock |
| supplier |
| vwcust |
```

## **B. Insert Value in view**

```
MariaDB [store]> insert into vwcust values(1007,'Puja','Female','Navi-Mumbai');
Query OK, 1 row affected, 3 warnings (0.014 sec)
```

## C. Update Value in view

```
MariaDB [store]> update vwcust set First_name='Pooja' where ID=1007;
Query OK, 1 row affected (0.004 sec)
```

#### **D. Delete**

```
MariaDB [store]> Delete from Vwcust where id=1007;
Query OK, 1 row affected (0.011 sec)
```

# E. Drop view

```
MariaDB [store]> drop view vwcust;
Query OK, 0 rows affected (0.001 sec)

MariaDB [store]> show tables;
+-----+
| Tables_in_store |
+-----+
| category |
| customer |
| delivery |
| order_tbl |
| product |
| stock |
| supplier |
+-----+
7 rows in set (0.001 sec)
```