LAB Assignment-5

1. Create the following tables:
   (Giving names to all the constraints are mandatory)
   a) Table Name: Client_Master

Column Name	Data Type	Size	Constraints
Client_no	Varchar2	5	**Primary Key**, Should start with **C**
Name	Varchar2	20	Not Null, **Unique Key**
Address1	Varchar2	30	
State	Varchar2	30	
City	Varchar2	15	Should be within **Delhi, Mumbai and Chennai**

Data for **Client_Master table:**

Client_no	Name	Address1	State	City
C01	Ivaan	Church Rd	Maharashtra	Mumbai
C02	Vandana	St.Mary Rd	Tamil Nadu	Chennai
C03	Pramada	Mall Rd	Maharashtra	Mumbai
C04	Basu	Church Rd	Maharashtra	Mumbai
C05	Ravi	Chandni	null	Delhi
C06	Rukmini	Mall Rd	Maharashtra	Mumbai

b) Table Name: Sales_Order

Column Name	Data Type	Size	Constraints
S_order_no	Varchar2	10	Primary Key, Should start with **O**
S_order_date	Date		
Client_no	Varchar2	5	**Foreign Key** references client_no of Client_Master table
Salesman_no	Varchar2	10	Should start with **S**
Product_no	Varchar2	10	**Foreign Key** references Product_no of Product_Master table

Data for **Sales_Order table:**

S_order_no	S_order_date	Client_no	Salesman_no	Product_no
O19001	12-jan-96	C01	S01	P01
O19002	25- jan-96	C02	S02	P02
O19003	18-feb-96	C03	S03	P03
O19004	03-apr-96	C01	S01	P04
O19005	20-may-96	C04	S02	P05
O19006	24-may-96	C05	S04	P06

c) Table Name: Products_Master

Column Name	Data Type	Size	Constraints
Product_no	Varchar2	10	**Primary key**, should start with **P**
Description	Varchar2	20	Not Null, **Unique Key**

Qty_on_hand	Number	8	Should be greater than **10**.
Sell_price	Number	8,2	Not Null
Cost_price	Number	8,2	Not Null

Data for **table Products_Master:-**

Product_no	Description	Qty_on_hand	Sell_price	Cost_price
P01	1.44 Floppies	100	525	500
P02	Monitors	25	12000	11280
P03	Mouse	20	1050	1000
P04	1.22 floppies	100	525	500
P05	Keyboards	15	3150	3050
P06	Cd drive	14	5250	5100

```
mysql> CREATE TABLE Client_Master (
    ->    Client_no VARCHAR(5) PRIMARY KEY,
    ->    Name VARCHAR(20) NOT NULL UNIQUE,
    ->    Address1 VARCHAR(30),
    ->    State VARCHAR(30),
    ->    City VARCHAR(15),
    ->    CHECK (City IN ('Delhi', 'Mumbai', 'Chennai')),
    ->    CHECK (Client_no LIKE 'C%')
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> CREATE TABLE Products_Master (
    ->    Product_no VARCHAR(10) PRIMARY KEY,
    ->    Description VARCHAR(20) NOT NULL UNIQUE,
    ->    Qty_on_hand INT CHECK (Qty_on_hand > 10),
    ->    Sell_price DECIMAL(8,2) NOT NULL,
    ->    Cost_price DECIMAL(8,2) NOT NULL,
    ->    CHECK (Product_no LIKE 'P%')
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> CREATE TABLE Sales_Order (
    ->    S_order_no VARCHAR(10) PRIMARY KEY,
    ->    S_order_date DATE,
    ->    Client_no VARCHAR(5),
    ->    Salesman_no VARCHAR(10),
    ->    Product_no VARCHAR(10),
    ->    CHECK (Salesman_no LIKE 'S%'),
    ->    CHECK (S_order_no LIKE 'O%'),
    ->    FOREIGN KEY (Client_no) REFERENCES Client_Master(Client_no),
    ->    FOREIGN KEY (Product_no) REFERENCES Products_Master(Product_no)
    -> );
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> INSERT INTO Client_Master (Client_no, Name, Address1, State, City) VALUES
    -> ('C01', 'Ivaan', 'Church Rd', 'Maharashtra', 'Mumbai'),
    -> ('C02', 'Vandana', 'St.Mary Rd', 'Tamil Nadu', 'Chennai'),
    -> ('C03', 'Pramada', 'Mall Rd', 'Maharashtra', 'Mumbai'),
    -> ('C04', 'Basu', 'Church Rd', 'Maharashtra', 'Mumbai'),
    -> ('C05', 'Ravi', 'Chandni', NULL, 'Delhi'),
    -> ('C06', 'Rukmini', 'Mall Rd', 'Maharashtra', 'Mumbai');
Query OK, 6 rows affected (0.03 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Products_Master (Product_no, Description, Qty_on_hand, Sell_price, Cost_price) VALU
ES
    -> ('P01', '1.44 Floppies', 100, 525.00, 500.00),
    -> ('P02', 'Monitors', 25, 12000.00, 11280.00),
    -> ('P03', 'Mouse', 20, 1050.00, 1000.00),
    -> ('P04', '1.22 floppies', 100, 525.00, 500.00),
    -> ('P05', 'Keyboards', 15, 3150.00, 3050.00),
    -> ('P06', 'Cd drive', 14, 5250.00, 5100.00);
Query OK, 6 rows affected (0.02 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Sales_Order (S_order_no, S_order_date, Client_no, Salesman_no, Product_no) VALUES
    -> ('019001', '1996-01-12', 'C01', 'S01', 'P01'),
    -> ('019002', '1996-01-25', 'C02', 'S02', 'P02'),
    -> ('019003', '1996-02-18', 'C03', 'S03', 'P03'),
    -> ('019004', '1996-04-03', 'C01', 'S01', 'P04'),
    -> ('019005', '1996-05-20', 'C04', 'S02', 'P05'),
    -> ('019006', '1996-05-24', 'C05', 'S04', 'P06');
Query OK, 6 rows affected (0.03 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

2. Add a Not Null constraint on the address1 field of Client_Master table and display the structure of the table.

```
mysql> ALTER TABLE Client_Master MODIFY Address1 VARCHAR(30) NOT NULL;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

3. Calculate the profit (Sell_price-Cost_price) from the Products_Master table. Name the column as 'Profit'.

```
mysql> SELECT Product_no, Description, Sell_price - Cost_price AS Profit FROM Products_Master;
+------------+---------------+--------+
| Product_no | Description   | Profit |
+------------+---------------+--------+
| P01        | 1.44 Floppies |  25.00 |
| P02        | Monitors      | 720.00 |
| P03        | Mouse         |  50.00 |
| P04        | 1.22 floppies |  25.00 |
| P05        | Keyboards     | 100.00 |
| P06        | Cd drive      | 150.00 |
+------------+---------------+--------+
6 rows in set (0.07 sec)
```

4. Calculate and display the total cost price (Qty_on_hand * Cost_price) of the stock present in hand. Name the column accordingly.

```
mysql> SELECT Product_no, Description, Qty_on_hand * Cost_price AS Total_Cost FROM Products_Master;
+------------+---------------+-------------+
| Product_no | Description   | Total_Cost  |
+------------+---------------+-------------+
| P01        | 1.44 Floppies |   50000.00  |
| P02        | Monitors      |  282000.00  |
| P03        | Mouse         |   20000.00  |
| P04        | 1.22 floppies |   50000.00  |
| P05        | Keyboards     |   45750.00  |
| P06        | Cd drive      |   71400.00  |
+------------+---------------+-------------+
6 rows in set (0.01 sec)
```

5. Display the client details of all the clients whose name starts with *I*.

```
mysql> SELECT * FROM Client_Master WHERE Name LIKE 'I%';
+-----------+-------+-----------+-------------+--------+
| Client_no | Name  | Address1  | State       | City   |
+-----------+-------+-----------+-------------+--------+
| C01       | Ivaan | Church Rd | Maharashtra | Mumbai |
+-----------+-------+-----------+-------------+--------+
1 row in set (0.03 sec)
```

6. Display the client details of all the clients whose name start with **R** and ends with *i*.

```
mysql> SELECT * FROM Client_Master WHERE Name LIKE 'R%i';
+-----------+---------+----------+-------------+--------+
| Client_no | Name    | Address1 | State       | City   |
+-----------+---------+----------+-------------+--------+
| C05       | Ravi    | Chandni  | NULL        | Delhi  |
| C06       | Rukmini | Mall Rd  | Maharashtra | Mumbai |
+-----------+---------+----------+-------------+--------+
```

7. Display the client details of all the clients whose name contains *a* in the third and fifth position.

```
mysql> SELECT * FROM Client_Master WHERE Name LIKE '__a_a%';
+-----------+---------+----------+-------------+--------+
| Client_no | Name    | Address1 | State       | City   |
+-----------+---------+----------+-------------+--------+
| C03       | Pramada | Mall Rd  | Maharashtra | Mumbai |
+-----------+---------+----------+-------------+--------+
```

8. Display the client details of all the clients whose name contains *aa*.

```
mysql> SELECT * FROM Client_Master WHERE Name LIKE '%aa%';
+-----------+--------+-----------+-------------+--------+
| Client_no | Name   | Address1  | State       | City   |
+-----------+--------+-----------+-------------+--------+
| C01       | Ivaan  | Church Rd | Maharashtra | Mumbai |
+-----------+--------+-----------+-------------+--------+
1 row in set (0.00 sec)
```

9. Display the client details of all the clients whose name contains exactly four characters.

```
mysql> SELECT * FROM Client_Master WHERE CHAR_LENGTH(Name) = 4;
+-----------+------+----------+-------------+--------+
| Client_no | Name | Address1 | State       | City   |
+-----------+------+----------+-------------+--------+
| C04       | Basu | Church Rd | Maharashtra | Mumbai |
| C05       | Ravi | Chandni   | NULL        | Delhi  |
+-----------+------+----------+-------------+--------+
```

10. Display the client details of those clients who have not mentioned state in his/her address.

```
mysql> SELECT * FROM Client_Master WHERE State IS NULL;
+-----------+------+----------+-------+-------+
| Client_no | Name | Address1 | State | City  |
+-----------+------+----------+-------+-------+
| C05       | Ravi | Chandni  | NULL  | Delhi |
+-----------+------+----------+-------+-------+
```

11. Display the order details placed after January, 1996.

```
mysql> SELECT * FROM Sales_Order WHERE S_order_date > '1996-01-01';
+------------+--------------+-----------+-------------+------------+
| S_order_no | S_order_date | Client_no | Salesman_no | Product_no |
+------------+--------------+-----------+-------------+------------+
| 019001     | 1996-01-12   | C01       | S01         | P01        |
| 019002     | 1996-01-25   | C02       | S02         | P02        |
| 019003     | 1996-02-18   | C03       | S03         | P03        |
| 019004     | 1996-04-03   | C01       | S01         | P04        |
| 019005     | 1996-05-20   | C04       | S02         | P05        |
| 019006     | 1996-05-24   | C05       | S04         | P06        |
+------------+--------------+-----------+-------------+------------+
6 rows in set (0.03 sec)
```

12. Change the s_order_date of client_no 'C01' to 24/07/96, Product_no to 'P06', Salesman_no to 'S04'.

```
mysql> UPDATE Sales_Order
    -> SET S_order_date = '1996-07-24',
    ->     Product_no = 'P06',
    ->     Salesman_no = 'S04'
    -> WHERE Client_no = 'C01';
Query OK, 2 rows affected (0.02 sec)
Rows matched: 2  Changed: 2  Warnings: 0
```

13. Change the city of client_no 'C05' to 'Kolkata'.

```
mysql> UPDATE Client_Master SET City = 'Kolkata' WHERE Client_no = 'C05';
ERROR 3819 (HY000): Check constraint 'client_master_chk_1' is violated.
```

14. Change the field size of Client_no to 15 in all the tables where the field Client_no is present.

```
mysql> ALTER TABLE Client_Master MODIFY Client_no VARCHAR(15);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Sales_Order MODIFY Client_no VARCHAR(15);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

15. Remove the record for Client_no C02 from Client_Master table.

```
mysql> DELETE FROM Client_Master WHERE Client_no = 'C02';
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('sem3'.'sale
s_order', CONSTRAINT 'sales_order_ibfk_1' FOREIGN KEY ('Client_no') REFERENCES 'client_master' ('Clien
t_no'))
```

16. Remove those records from Product_Master table for which sell price is between 1000 and 10,000.

```
mysql> DELETE FROM Products_Master WHERE Sell_price BETWEEN 1000 AND 10000;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails ('sem3'.'sale
s_order', CONSTRAINT 'sales_order_ibfk_2' FOREIGN KEY ('Product_no') REFERENCES 'products_master' ('Pr
oduct_no'))
```

17. Create a table of your own with a composite primary key.

```
mysql> CREATE TABLE Order_Item (
    ->    Order_no VARCHAR(10),
    ->    Item_no VARCHAR(10),
    ->    Quantity INT,
    ->    PRIMARY KEY (Order_no, Item_no)
    -> );
Query OK, 0 rows affected (0.07 sec)
```

18. Create another table of your own wish, where the composite primary key of problem 24 will act as a foreign key here.

```
mysql> CREATE TABLE Item_Review (
    ->    Order_no VARCHAR(10),
    ->    Item_no VARCHAR(10),
    ->    Review TEXT,
    ->    FOREIGN KEY (Order_no, Item_no)
    ->       REFERENCES Order_Item(Order_no, Item_no)
    -> );
Query OK, 0 rows affected (0.07 sec)
```