DBMS LAB

TO UNDERSTAND AND APPLY CONCEPT OF CONSTRAINTS

LAB-4

Presented To
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B-2

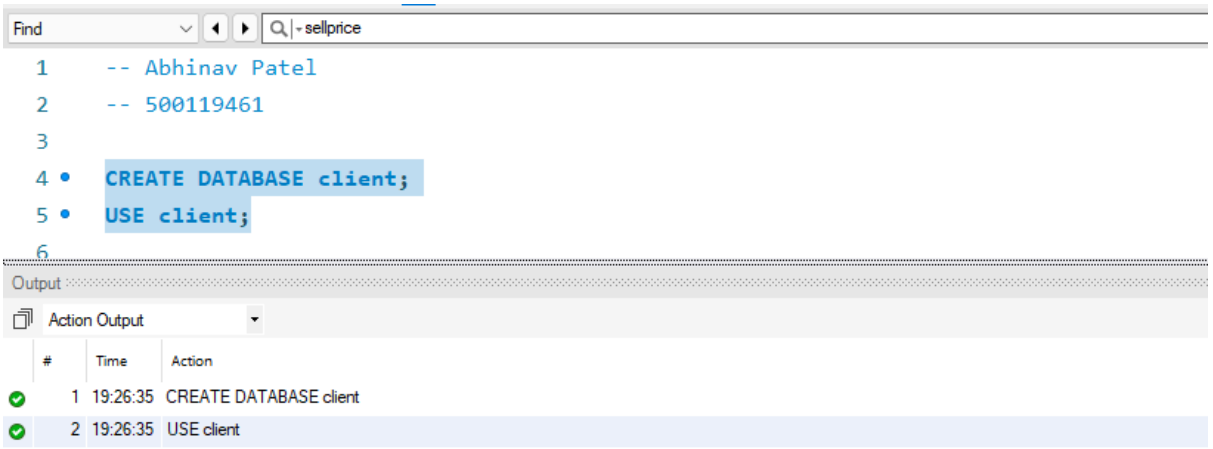
EXPERIMENT - 4

Title: To understand and apply the concept of Constraints.

Objective: To understand the concept of data constraints that is enforced on data being stored in the table. Focus on Primary Key and the Foreign Key.

1. Create the tables described below:

Table name: CLIENT_MASTER
Description: used to store client information.



Column name	data type	Size	Constraints
CLIENTNO	Varchar	6	Primary key / first letter must start with 'C'
NAME	Varchar	20	Not Null
ADDRESS 1	Varchar	30	
ADDRESS 2	Varchar	30	
CITY	Varchar	15	
PINCODE	Integer	8	
STATE	Varchar	15	
BALDUE	Decimal	10,2	

```sql
CREATE TABLE CLIENT_MASTER (
    CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'),
    NAME VARCHAR(20) NOT NULL,
    ADDRESS1 VARCHAR(30),
    ADDRESS2 VARCHAR(30),
    CITY VARCHAR(15),
    PINCODE INTEGER CHECK (PINCODE >= 0),
    STATE VARCHAR(15),
    BALDUE DECIMAL(10, 2) DEFAULT 0.00
);
```

Output

Action Output

#	Time	Action
1	19:26:35	CREATE DATABASE client
2	19:26:35	USE client
3	19:27:08	CREATE TABLE CLIENT_MASTER (CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'), NAME VARCHAR(20) NOT NULL, ..

Table Name: **PRODUCT_MASTER**

Description: used to store product information

Column name	data type	Size	Attributes
PRODUCTNO	Varchar	6	Primary Key/ first letter must start with 'P'
DESCRIPTION	Varchar	15	Not Null
PROFITPERCENT	Decimal	4,2	Not Null
UNIT MEASURE	Varchar	10	Not Null
QTYONHAND	Integer	8	Not Null
REORDERL VL	Integer	8	Not Null
SELLPRICE	Decimal	8,2	Not Null
COSTPRICE	Decimal	8,2	Not Null

```
17
18  CREATE TABLE PRODUCT_MASTER (
19   PRODUCTNO VARCHAR(6),
20   CHECK (PRODUCTNO LIKE 'P%'),
21   DESCRIPTION VARCHAR(15) NOT NULL,
22   PROFITPERCENT DECIMAL(4,2) NOT NULL,
23   UNIT_MEASURE VARCHAR(10) NOT NULL,
24   QTYONHAND INTEGER(8) NOT NULL,
25   REORDERLVL INTEGER(8) NOT NULL,
26   SELLPRICE DECIMAL(8,2) NOT NULL,
27   COSTPRICE DECIMAL(8,2) NOT NULL
28  );
29
```

Output

Action Output

#	Time	Action	Messag
1	19:26:35	CREATE DATABASE client	1 row(s
2	19:26:35	USE client	0 row(s
3	19:27:08	CREATE TABLE CLIENT_MASTER (CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'), NAME VARCHAR(20) NOT NULL, ...	0 row(s
4	19:28:00	CREATE TABLE PRODUCT_MASTER (PRODUCTNO VARCHAR(6), CHECK (PRODUCTNO LIKE 'P%'), DESCRIPTION VARCHAR(15) NOT NULL, PR...	0 row(s

Table Name: SALESMAN_MASTER

Description: used to store salesman information working for the company.

Column name	data type	Size	Attributes
SALESMANNO	Varchar	6	Primary Key/ first letter must start with 'S'
SALESMANNAME	Varchar	20	Not Null
ADDRESS 1	Varchar	30	Not Null
ADDRESS 2	Varchar	30	
CITY	Varchar	20	
PINCODE	Integer	8	
STATE	Varchar	20	
SALAMT	Real	8,2	Not Null , Cannot be 0
TGTTOGET	Decimal	6,2	Not Null , Cannot be 0
YTDSALES	Double	6,2	Not Null
REMARKS	Varchar	60	

```sql
CREATE TABLE SALESMAN_MASTER (
 SALESMANNO VARCHAR(6) PRIMARY KEY CHECK (SALESMANNO LIKE 'S%'),
 SALESMANNAME VARCHAR(20) NOT NULL,
 ADDRESS1 VARCHAR(30) NOT NULL,
 ADDRESS2 VARCHAR(30),
 CITY VARCHAR(20),
 PINCODE INTEGER(8),
 STATE VARCHAR(20),
 SALAMT REAL(8,2) NOT NULL CHECK (SALAMT <> 0),
 TGTTOGET DECIMAL(6,2) NOT NULL CHECK (TGTTOGET <> 0),
 YTDSALES DOUBLE(6,2) NOT NULL,
 REMARKS VARCHAR(60)
);
```

put

Action Output

#	Time	Action
1	19:26:35	CREATE DATABASE client
2	19:26:35	USE client
3	19:27:08	CREATE TABLE CLIENT_MASTER (CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'), NAME VARCHAR(20) NOT NULL, ...
4	19:28:00	CREATE TABLE PRODUCT_MASTER (PRODUCTNO VARCHAR(6), CHECK (PRODUCTNO LIKE 'P%'), DESCRIPTION VARCHAR(15) NOT NULL, PR...
5	19:29:13	CREATE TABLE SALESMAN_MASTER (SALESMANNO VARCHAR(6) PRIMARY KEY CHECK (SALESMANNO LIKE 'S%'), SALESMANNAME VARCHA...

Insert the following data into their respective tables:

Data for CLIENT_MASTER table

```sql
-- Inserting elements into tables

INSERT INTO CLIENT_MASTER (CLIENTNO, NAME, CITY, PINCODE, STATE, BALDUE) VALUES
('C00001', 'Ivan bayross', 'Mumbai', 400054, 'Maharashtra', 15.000),
('C00002', 'Mamta muzumdar', 'Madras', 780001, 'Tamil Nadu', 0.0),
('C00003', 'Chhaya bankar', 'Mumbai', 400057, 'Maharashtra', 50.00),
('C00004', 'Ashwini joshi', 'Bangalore', 560001, 'Karnataka', 0.0),
('C00005', 'Hansel colaco', 'Mumbai', 400060, 'Maharashtra', 200.0),
('C00006', 'Deepak sharma', 'Mangalore', 560050, 'Karnataka', 0.0);
SELECT * FROM CLIENT_MASTER;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
C00001	Ivan bayross	NULL	NULL	Mumbai	400054	Maharashtra	15.00
C00002	Mamta muzumdar	NULL	NULL	Madras	780001	Tamil Nadu	0.00
C00003	Chhaya bankar	NULL	NULL	Mumbai	400057	Maharashtra	50.00
C00004	Ashwini joshi	NULL	NULL	Bangalore	560001	Karnataka	0.00
C00005	Hansel colaco	NULL	NULL	Mumbai	400060	Maharashtra	200.00
C00006	Deepak sharma	NULL	NULL	Mangalore	560050	Karnataka	0.00
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

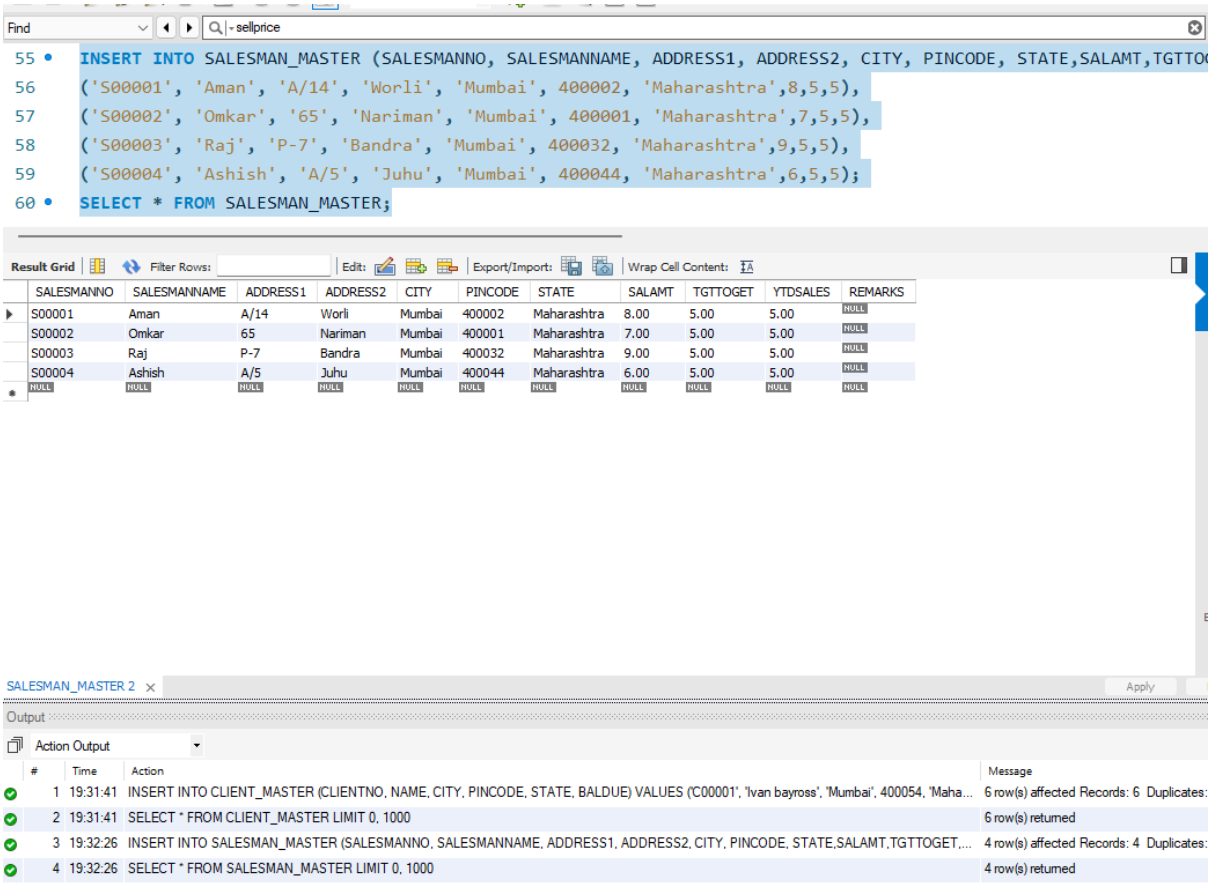
NT_MASTER 1 | Apply | Revert | Context H

Output

Action Output

#	Time	Action	Message
1	19:31:41	INSERT INTO CLIENT_MASTER (CLIENTNO, NAME, CITY, PINCODE, STATE, BALDUE) VALUES ('C00001', 'Ivan bayross', 'Mumbai', 400054, 'Maha...	6 row(s) affected Records: 6 Duplicates: 0 Warnings: 0
2	19:31:41	SELECT * FROM CLIENT_MASTER LIMIT 0, 1000	6 row(s) returned

Data for SALESMAN_MASTER table

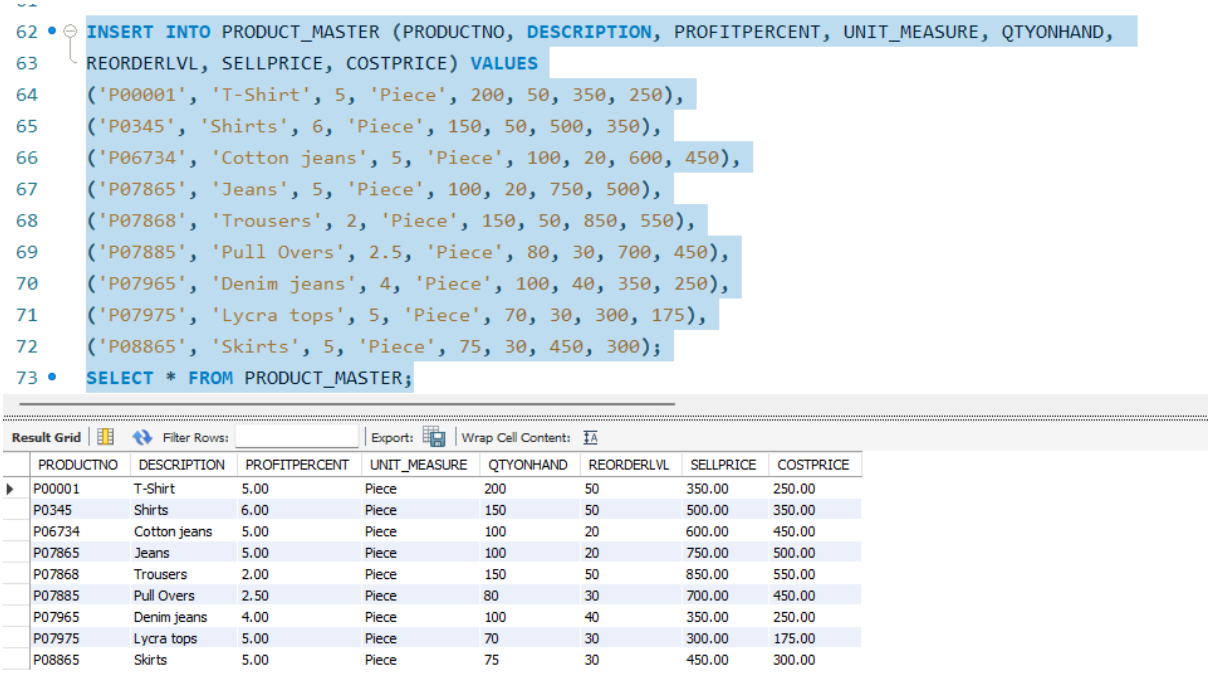


```
INSERT INTO SALESMAN_MASTER (SALESMANNO, SALESMANNAME, ADDRESS1, ADDRESS2, CITY, PINCODE, STATE,SALAMT,TGTTOG
('S00001', 'Aman', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra',8,5,5),
('S00002', 'Omkar', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra',7,5,5),
('S00003', 'Raj', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra',9,5,5),
('S00004', 'Ashish', 'A/5', 'Juhu', 'Mumbai', 400044, 'Maharashtra',6,5,5);
SELECT * FROM SALESMAN_MASTER;
```

SALESMANNO	SALESMANNAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	SALAMT	TGTTOGET	YTDSALES	REMARKS
S00001	Aman	A/14	Worli	Mumbai	400002	Maharashtra	8.00	5.00	5.00	NULL
S00002	Omkar	65	Nariman	Mumbai	400001	Maharashtra	7.00	5.00	5.00	NULL
S00003	Raj	P-7	Bandra	Mumbai	400032	Maharashtra	9.00	5.00	5.00	NULL
S00004	Ashish	A/5	Juhu	Mumbai	400044	Maharashtra	6.00	5.00	5.00	NULL

#	Time	Action	Message
1	19:31:41	INSERT INTO CLIENT_MASTER (CLIENTNO, NAME, CITY, PINCODE, STATE, BALDUE) VALUES ('C00001', 'Ivan bayross', 'Mumbai', 400054, 'Maha...	6 row(s) affected Records: 6 Duplicates:
2	19:31:41	SELECT * FROM CLIENT_MASTER LIMIT 0, 1000	6 row(s) returned
3	19:32:26	INSERT INTO SALESMAN_MASTER (SALESMANNO, SALESMANNAME, ADDRESS1, ADDRESS2, CITY, PINCODE, STATE,SALAMT,TGTTOGET,...	4 row(s) affected Records: 4 Duplicates:
4	19:32:26	SELECT * FROM SALESMAN_MASTER LIMIT 0, 1000	4 row(s) returned

Data for PRODUCT_MASTER table

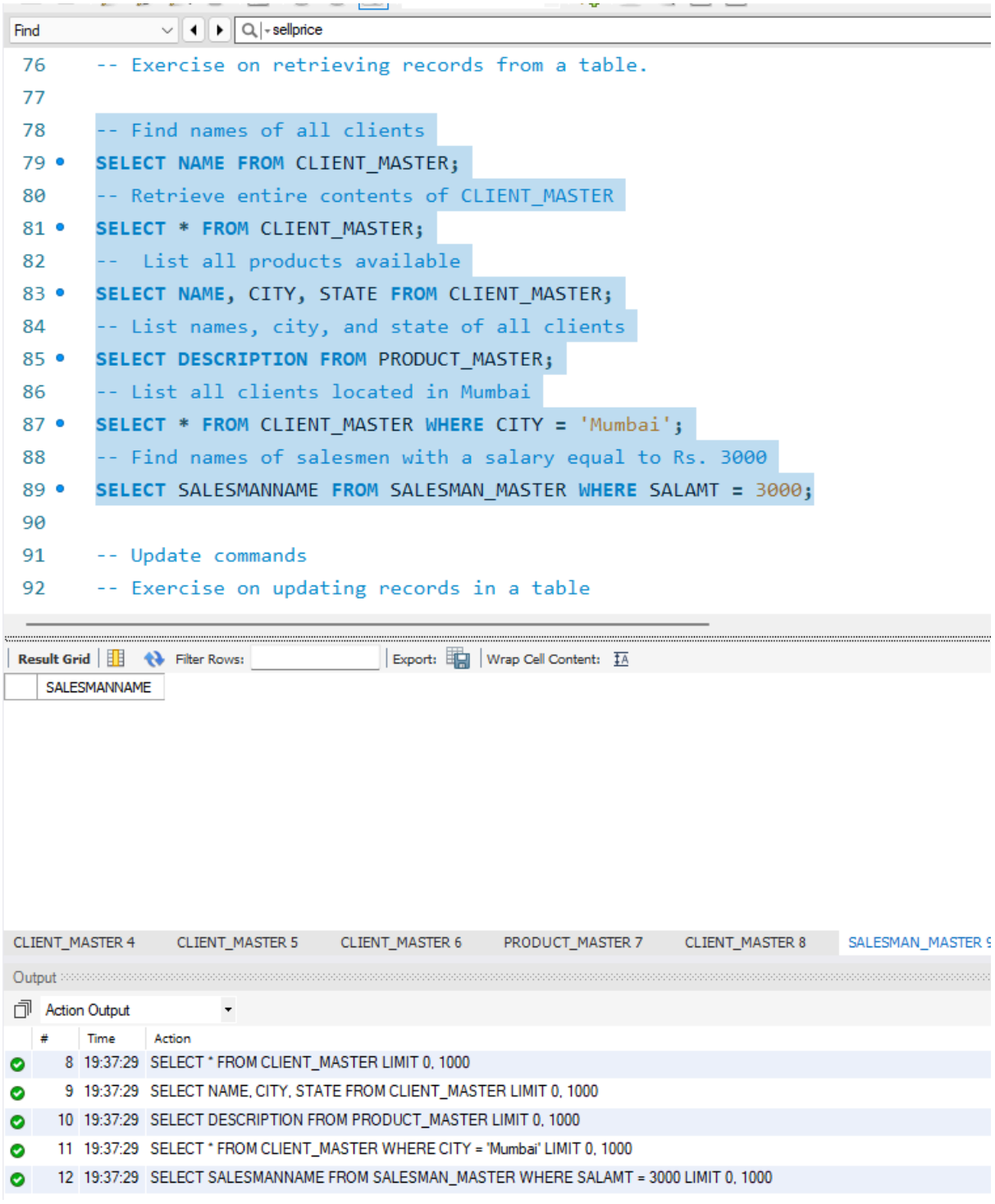


```
INSERT INTO PRODUCT_MASTER (PRODUCTNO, DESCRIPTION, PROFITPERCENT, UNIT_MEASURE, QTYONHAND,
REORDERLVL, SELLPRICE, COSTPRICE) VALUES
('P00001', 'T-Shirt', 5, 'Piece', 200, 50, 350, 250),
('P0345', 'Shirts', 6, 'Piece', 150, 50, 500, 350),
('P06734', 'Cotton jeans', 5, 'Piece', 100, 20, 600, 450),
('P07865', 'Jeans', 5, 'Piece', 100, 20, 750, 500),
('P07868', 'Trousers', 2, 'Piece', 150, 50, 850, 550),
('P07885', 'Pull Overs', 2.5, 'Piece', 80, 30, 700, 450),
('P07965', 'Denim jeans', 4, 'Piece', 100, 40, 350, 250),
('P07975', 'Lycra tops', 5, 'Piece', 70, 30, 300, 175),
('P08865', 'Skirts', 5, 'Piece', 75, 30, 450, 300);
SELECT * FROM PRODUCT_MASTER;
```

PRODUCTNO	DESCRIPTION	PROFITPERCENT	UNIT_MEASURE	QTYONHAND	REORDERLVL	SELLPRICE	COSTPRICE
P00001	T-Shirt	5.00	Piece	200	50	350.00	250.00
P0345	Shirts	6.00	Piece	150	50	500.00	350.00
P06734	Cotton jeans	5.00	Piece	100	20	600.00	450.00
P07865	Jeans	5.00	Piece	100	20	750.00	500.00
P07868	Trousers	2.00	Piece	150	50	850.00	550.00
P07885	Pull Overs	2.50	Piece	80	30	700.00	450.00
P07965	Denim jeans	4.00	Piece	100	40	350.00	250.00
P07975	Lycra tops	5.00	Piece	70	30	300.00	175.00
P08865	Skirts	5.00	Piece	75	30	450.00	300.00

Exercise on retrieving records from a table

a. Find out the names of all the clients.
b. Retrieve the entire contents of the Client_Master table.
c. Retrieve the list of names, city and the state of all the clients.
d. List the various products available from the Product_Master table.
e. List all the clients who are located in Mumbai.
f. Find the names of salesman who have a salary equal to Rs.3000.



Exercise on updating records in a table

a. Change the city of ClientNo ‘C00005’ to ‘Bangalore’.
b. Change the BalDue of ClientNo ‘C00001’ to Rs.1000.
c. Change the cost price of ‘Trousers’ to rs.950.00.
d. Change the city of the salesman to Pune.

```
91
92    -- Update commands
93    -- Exercise on updating records in a table
94
95    -- Change the city of ClientNo 'C00005' to 'Bangalore'
96    UPDATE CLIENT_MASTER SET CITY = 'Bangalore' WHERE CLIENTNO = 'C00005';
97    -- Change BalDue of ClientNo 'C00001' to Rs. 1000
98    UPDATE CLIENT_MASTER SET BALDUE = 1000 WHERE CLIENTNO = 'C00001';
99    -- Change the cost price of 'Trousers' to Rs. 950.00
100   UPDATE PRODUCT_MASTER SET COSTPRICE = 950 WHERE PRODUCTNO = 'P07868';
101   -- Change the city of salesmen to 'Pune'
102   UPDATE SALESMAN_MASTER SET CITY = 'Pune';
103
104
```

Output

Action Output

#	Time	Action	Message
1	19:41:46	UPDATE CLIENT_MASTER SET CITY = 'Bangalore' WHERE CLIENTNO = 'C00005'	0 row(s) affec
2	19:41:46	UPDATE CLIENT_MASTER SET BALDUE = 1000 WHERE CLIENTNO = 'C00001'	0 row(s) affec
3	19:41:46	UPDATE PRODUCT_MASTER SET COSTPRICE = 950 WHERE PRODUCTNO = 'P07868'	1 row(s) affec
4	19:41:46	UPDATE SALESMAN_MASTER SET CITY = 'Pune'	4 row(s) affec

Exercise on deleting records in a table

a. Delete all salesman from the Salesman_Master whose salaries are equal to Rs.3500.
b. Delete all products from Product_Master where the quantity on hand is equal to 100.
c. Delete from Client_Master where the column state holds the value ‘Tamil Nadu’.

Find - sellprice

```
105   -- Delete all salesmen from Salesman_Master whose salaries are equal to Rs.3500.
106   DELETE FROM Salesman_Master
107   WHERE SALAMT = 3500;
108
109   -- Delete all products from Product_Master where the quantity on hand is equal to 100.
110   DELETE FROM Product_Master
111   WHERE QTYONHAND = 100;
112
113   --  Delete from Client_Master where the column state holds the value ‘Tamil Nadu’.
114   DELETE FROM Client_Master
115   WHERE STATE = 'Tamil Nadu';
116
```

Output

Action Output

#	Time	Action	Message
1	19:49:47	DELETE FROM Salesman_Master WHERE SALAMT = 3500	0 row(s) affected
2	19:49:47	DELETE FROM Product_Master WHERE QTYONHAND = 100	3 row(s) affected
3	19:49:47	DELETE FROM Client_Master WHERE STATE = 'Tamil Nadu'	1 row(s) affected

Exercise on altering the table structure

a. Add a column called ‘Telephone’ of data type integer to the Client_Master table.

b. Change the size off SellPrice column in Product _Master to 10, 2.

```
116
117    --  Add a column called ‘Telephone’ of data type integer to the Client_Master table.
118 •  ALTER TABLE Client_Master
119    ADD Telephone INT;
120
121    --  Change the size of SellPrice column in Product_Master to 10, 2.
122 •  ALTER TABLE Product_Master
123    MODIFY COLUMN SellPrice DECIMAL(10, 2);
124
```

Output

Action Output

#	Time	Action	Message
1	19:48:40	ALTER TABLE Client_Master ADD Telephone INT	0 row(s) affected Records: 0 Duplicates: 0 Wan
2	19:48:40	ALTER TABLE Product_Master MODIFY COLUMN SellPrice DECIMAL(10, 2)	9 row(s) affected Records: 9 Duplicates: 0 Wan

Exercise on deleting the table structure along with the data

a. Destroy the table Client_Master along with its data

```
124
125    --  Destroy the table Client_Master along with its data.
126 •  DROP TABLE Client_Master;
127
```

Output

Action Output

#	Time	Action
1	19:50:17	DROP TABLE Client_Master