

ASSIGNMENT – PRACTICE

Q1: Create the tables described below:

Table Name: CLIENT_MASTER

Description: Used to store client information.

Column Name	Data Type	Size	Default	Attributes
CLIENTNO	VARCHAR	6		Primary Key / first letter must start with 'C'
NAME	VARCHAR	20		Not Null
ADDRESS1	VARCHAR	30		
ADDRESS2	VARCHAR	30		
CITY	VARCHAR	15		
PINCODE	INT	8		
STATE	VARCHAR	15		
BALDUE	FLOAT	10,2		

Table Name: PRODUCT_MASTER

Description: Used to store product information.

Column Name	Data Type	Size	Default	Attributes
PRODUCTNO	VARCHAR	6		Primary Key / first letter must start with 'P'
DESCRIPTION	VARCHAR	15		Not Null
PROFITPERCENT	DECIMAL	4,2		Not Null
UNITMEASURE	VARCHAR	10		Not Null
QTYONHAND	INT	8		Not Null
REORDERLVL	INT	8		Not Null
SELLPRICE	DECIMAL	8,2		Not Null, Cannot be 0
COSTPRICE	DECIMAL	8,2		Not Null, Cannot be 0

Table Name: SALESMAN_MASTER

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

Column Name	Data Type	Size	Default	Attributes
SALESMANNO	VARCHAR	6		Primary Key / first letter must start with 'S'
SALESMANNAME	VARCHAR	20		Not Null
ADDRESS1	VARCHAR	30		Not Null
ADDRESS2	VARCHAR	30		
CITY	VARCHAR	20		
PINCODE	INT	8		
STATE	VARCHAR	20		
SALAMT	FLOAT	8,2		Not Null, Cannot be 0
TOTTOGET	FLOAT	6,2		Not Null, Cannot be 0
YTDSALES	FLOAT	6,2		Not Null
REMARKS	VARCHAR	60		

Table Name: SALES_ORDER

Description: Used to store client's orders.

Column Name	Data Type	Size	Default	Attributes
ORDERNO	VARCHAR	6		Primary Key / first letter must start with 'O'
CLIENTNO	VARCHAR	6		Foreign Key references ClientNo of Client_Master table
ORDERDATE	DATE			Not Null
DELYADDR	VARCHAR	25		
SALESMANNO	VARCHAR	6		Foreign Key references SalesmanNo of Salesman_Master table
DELYTYPE	CHAR	1	F	Delivery: part (P) / full (F)
BILLYN	CHAR	1		
DELYDATE	DATE			Cannot be less than Order Date
ORDERSTATUS	VARCHAR	10		Values ('In Process', 'Fulfilled', 'BackOrder', 'Cancelled')

Table Name: SALES_ORDER_DETAILS

Description: Used to store client's orders with details of each product ordered.

Column Name	Date Type	Size	Default	Attributes
ORDERNO	VARCHAR	6		Foreign Key reference OrderNo of Sales_Order table
PRODUCTNO	VARCHAR	6		Foreign Key reference ProductNo of Product_Master table
QTYORDERED	INT	8		
QTYSUPPLY	INT	8		
PRODUCTRATE	FLOAT	10,2		

Ans:

```
MariaDB [db3]> create table CLIENT_MASTER (
    -> CLIENTNO varchar(6) primary key,
    -> NAME varchar(20) NOT NULL,
    -> ADDRESS1 varchar(30),
    -> ADDRESS2 varchar(30),
    -> CITY varchar(15),
    -> PINCODE int(8),
    -> STATE varchar(15),
    -> BALDUE float(10,2)
    -> );
Query OK, 0 rows affected (0.030 sec)

MariaDB [db3]> desc CLIENT_MASTER;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| CLIENTNO | varchar(6) | NO  | PRI | NULL    |       |
| NAME      | varchar(20) | NO  |     | NULL    |       |
| ADDRESS1  | varchar(30) | YES |     | NULL    |       |
| ADDRESS2  | varchar(30) | YES |     | NULL    |       |
| CITY      | varchar(15) | YES |     | NULL    |       |
| PINCODE   | int(8)    | YES |     | NULL    |       |
| STATE     | varchar(15) | YES |     | NULL    |       |
| BALDUE   | float(10,2) | YES |     | NULL    |       |
+-----+-----+-----+-----+-----+
8 rows in set (0.012 sec)
```

```

MariaDB [db3]> create table PRODUCT_MASTER (
    -> PRODUCTNO varchar(6) primary key,
    -> DESCRIPTION varchar(15) not null,
    -> PROFITPERCENT decimal(4.2) not null,
    -> UNITMEASURE varchar(10) not null,
    -> QTYONHAND int(8) not null,
    -> REORDERLVL int(8) not null,
    -> SELLPRICE decimal(8.2) not null,
    -> COSTPRICE decimal(8.2) not null
    -> );
Query OK, 0 rows affected (0.041 sec)

MariaDB [db3]> select * from PRODUCT_MASTER;
Empty set (0.002 sec)

MariaDB [db3]> DESC PRODUCT_MASTER;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| PRODUCTNO | varchar(6) | NO | PRI | NULL |       |
| DESCRIPTION | varchar(15) | NO |       | NULL |       |
| PROFITPERCENT | decimal(4,0) | NO |       | NULL |       |
| UNITMEASURE | varchar(10) | NO |       | NULL |       |
| QTYONHAND | int(8) | NO |       | NULL |       |
| REORDERLVL | int(8) | NO |       | NULL |       |
| SELLPRICE | decimal(8,0) | NO |       | NULL |       |
| COSTPRICE | decimal(8,0) | NO |       | NULL |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.006 sec)

MariaDB [db3]> create table SALESMAN_MASTER (
    -> SALESMANNO varchar(6) primary key,
    -> SALESMANNAME varchar(20) not null,
    -> ADDRESS1 varchar(30) not null,
    -> ADDRESS2 varchar(30),
    -> CITY varchar(20),
    -> PINCODE int(8),
    -> STATE varchar(20),
    -> SALAMT float(8,2) not null,
    -> TOTTOGET float(6,2) not null,
    -> YTDSALES float(6,2) not null,
    -> REMARKS varchar(60)
    -> );
Query OK, 0 rows affected (0.024 sec)

MariaDB [db3]> desc SALESMAN_MASTER;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| SALESMANNO | varchar(6) | NO | PRI | NULL |       |
| SALESMANNAME | varchar(20) | NO |       | NULL |       |
| ADDRESS1 | varchar(30) | NO |       | NULL |       |
| ADDRESS2 | varchar(30) | YES |       | NULL |       |
| CITY | varchar(20) | YES |       | NULL |       |
| PINCODE | int(8) | YES |       | NULL |       |
| STATE | varchar(20) | YES |       | NULL |       |
| SALAMT | float(8,2) | NO |       | NULL |       |
| TOTTOGET | float(6,2) | NO |       | NULL |       |
| YTDSALES | float(6,2) | NO |       | NULL |       |
| REMARKS | varchar(60) | YES |       | NULL |       |
+-----+-----+-----+-----+-----+-----+
11 rows in set (0.007 sec)

```

```
MariaDB [db3]> CREATE TABLE SALES_ORDER (
    -> ORDERNO varchar(6) primary key,
    -> CLIENTNO varchar(6) references Client_Master,
    -> ORDERDATE date not null,
    -> DELYADDR varchar(25),
    -> SALESMANNO varchar(6) references Salesman_Master,
    -> DELYTYPE char(1) default 'F',
    -> BILLYN char(1),
    -> DELYDATE date,
    -> ORDERSTATUS varchar(10),
    -> CONSTRAINT CK_DELYTYPE CHECK(DELYTYPE IN('P','F')),
    -> CONSTRAINT CK_DELYDATE CHECK(DELYDATE > ORDERDATE),
    -> CONSTRAINT CK_ORDERSTATUS CHECK(ORDERSTATUS IN('In Process', 'Fulfilled', 'BackOrder', 'Cancelled'))
    -> );
Query OK, 0 rows affected (0.026 sec)
```

```
MariaDB [db3]> desc Sales_order;
```

Field	Type	Null	Key	Default	Extra
ORDERNO	varchar(6)	NO	PRI	NULL	
CLIENTNO	varchar(6)	YES		NULL	
ORDERDATE	date	NO		NULL	
DELYADDR	varchar(25)	YES		NULL	
SALESMANNO	varchar(6)	YES		NULL	
DELYTYPE	char(1)	YES		F	
BILLYN	char(1)	YES		NULL	
DELYDATE	date	YES		NULL	
ORDERSTATUS	varchar(10)	YES		NULL	

```
9 rows in set (0.006 sec)
```

```
MariaDB [db3]> CREATE TABLE SALES_ORDER_DETAILS (
    -> ORDERNO VARCHAR(6) REFERENCES SALES_ORDER,
    -> PRODUCTNO VARCHAR(6) REFERENCES PRODUCT_MASTER,
    -> QTYORDERED INT(8),
    -> QTYDISP INT(8),
    -> PRODUCTRATE FLOAT(10,2)
    -> );
Query OK, 0 rows affected (0.024 sec)
```

```
MariaDB [db3]> DESC SALES_ORDER_DETAILS;
```

Field	Type	Null	Key	Default	Extra
ORDERNO	varchar(6)	YES		NULL	
PRODUCTNO	varchar(6)	YES		NULL	
QTYORDERED	int(8)	YES		NULL	
QTYDISP	int(8)	YES		NULL	
PRODUCTRATE	float(10,2)	YES		NULL	

```
5 rows in set (0.005 sec)
```

2. Insert the following data into their respective tables:

a. Re-insert the data generated for tables CLIENT_MASTER, PRODUCT_MASTER and SALESMAN_MASTER.

```
MariaDB [db3]> Insert Into Client_master values ('C001','Ivan Bayross','R-274','Bandra','Bombay','400054','Maharashtra',15000);
Query OK, 1 row affected (0.008 sec)

MariaDB [db3]> select * from client_master;
+-----+-----+-----+-----+-----+-----+
| CLIENTNO | NAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE |
+-----+-----+-----+-----+-----+-----+
| C001 | Ivan Bayross | R-274 | Bandra | Bombay | 400054 | Maharashtra |
|      |          |          |          |      |          |          |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.003 sec)

MariaDB [db3]> Insert into Client_master values ('C002','Vandana Saitwal','Rp-67','Pali hill','Madras','780001','Tamil Nadu','0'),('C003','Pramada Jaguste','M-09','Warli','Bombay','400057','Maharashtra','0000'),('C004','Basu Navindgi','789','Juhu','Bombay','400056','Maharashtra','0'),('C005','Ravi Sreedharan','Z-549','C.P.','Delhi','110001','Delhi','2000'),('C006','Rukmini','Rz-521','Khandala','Bombay','400050','Maharashtra','0');
Query OK, 5 rows affected (0.005 sec)
Records: 5 Duplicates: 0 Warnings: 0

MariaDB [db3]> select * from client_master;
+-----+-----+-----+-----+-----+-----+
| CLIENTNO | NAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE |
+-----+-----+-----+-----+-----+-----+
| C001 | Ivan Bayross | R-274 | Bandra | Bombay | 400054 | Maharashtra |
| C002 | Vandana Saitwal | Rp-67 | Pali hill | Madras | 780001 | Tamil Nadu |
| C003 | Pramada Jaguste | M-09 | Warli | Madras | 400057 | Maharashtra |
| C004 | Basu Navindgi | 789 | Juhu | Bombay | 400056 | Maharashtra |
| C005 | Ravi Sreedharan | Z-549 | C.P. | Delhi | 110001 | Delhi |
| C006 | Rukmini | Rz-521 | Khandala | Bombay | 400050 | Maharashtra |
|      |          |          |          |      |          |          |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.001 sec)

MariaDB [db3]> Insert into Product_master values('P00001','1.44 Floppies','5','Piece',100,20,525,500),('P00451','Monitors',8,'Piece',10,3,12000,11200),('P06734','Mouse',5,'Piece',20,5,1050,500),('P07885','CD Drive',2.5,'Piece',10,3,3156,3050),('P07885','CD Drive',2.5,'Piece',10,3,3156,3050),('P07965','540 HDD',4,'Piece',10,3,8400,8000),('P07975','1.44 Drive',5,'Piece',10,3,1050,1000);
Query OK, 9 rows affected, 1 warning (0.000 sec)
Records: 9 Duplicates: 0 Warnings: 1

MariaDB [db3]> select * from Product_master;
+-----+-----+-----+-----+-----+-----+-----+-----+
| PRODUCTNO | DESCRIPTION | PROFITPERCENT | UNITMEASURE | QTYONHAND | REORDERLV | SELLPRICE | COSTPRICE |
+-----+-----+-----+-----+-----+-----+-----+-----+
| P00001 | 1.44 Floppies | 5 | Piece | 100 | 20 | 525 | 500 |
| P03453 | Monitors | 6 | Piece | 10 | 3 | 12000 | 11200 |
| P06734 | Mouse | 5 | Piece | 20 | 5 | 1050 | 500 |
| P07865 | 1.44 Floppies | 5 | Piece | 100 | 20 | 525 | 500 |
| P07885 | Keyboards | 2 | Piece | 10 | 3 | 3156 | 3050 |
| P07965 | 540 HDD | 4 | Piece | 10 | 3 | 8400 | 8000 |
| P07975 | 1.44 Drive | 5 | Piece | 10 | 3 | 1050 | 1000 |
| P08865 | 1.44 Drive | 5 | Piece | 2 | 3 | 1050 | 1000 |
|      |          |          |          |      |          |          |          |
+-----+-----+-----+-----+-----+-----+-----+-----+
9 rows in set (0.000 sec)

MariaDB [db3]> Insert into Salesman_master values ('S001', 'Kiran', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 3000,100,50,'Good'), ('S002', 'Manish', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra', 3000, 200,100,'Good'), ('S003', 'Ravi', 'P-7', 'Bandra', 'Mumbai', 400003, 'Maharashtra', 3000, 200,100,'Good'), ('S004', 'Ashish', 'A/5', 'Juhu', 'Mumbai', 400004, 'Maharashtra', 3000, 200,150,'Good');
Query OK, 4 rows affected (0.004 sec)
Records: 4 Duplicates: 0 Warnings: 0

MariaDB [db3]> select * from salesman_master;
+-----+-----+-----+-----+-----+-----+-----+-----+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE | REMARKS |
+-----+-----+-----+-----+-----+-----+-----+-----+
| S001 | Kiran | A/14 | Worli | Mumbai | 400002 | Maharashtra | 3000.00 | 100.00 | 50.00 | Good |
| S002 | Manish | 65 | Nariman | Mumbai | 400001 | Maharashtra | 3000.00 | 200.00 | 100.00 | Good |
| S003 | Ravi | P-7 | Bandra | Mumbai | 400003 | Maharashtra | 3000.00 | 200.00 | 100.00 | Good |
| S004 | Ashish | A/5 | Juhu | Mumbai | 400004 | Maharashtra | 3000.00 | 200.00 | 150.00 | Good |
|      |          |          |          |      |          |          |          |
+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.000 sec)
```

b. Data for Sales_Order table:

OrderNo	ClientNo	OrderDate	SalesmanNo	DelyType	BillYN	DelyDate	OrderStatus
O19001	C00001	12-June-04	S00001	F	N	20-July-02	In Process
O19002	C00002	25-June-04	S00002	P	N	27-June-02	Cancelled
O46865	C00003	18-Feb-04	S00003	F	Y	20-Feb-02	Fulfilled
019003	C00001	03-Apr-04	S00001	F	Y	07-Apr-02	Fulfilled
O46866	C00004	20-May-04	S00002	P	N	22-May-02	Cancelled
O19008	C00005	24-May-04	S00004	F	N	26-July-02	In Process

```
Ma iaDB [db3]> select    from sales.order;
+-----+-----+-----+-----+-----+-----+-----+
| ORDE8NO | CLIENTNO | ORDERDATE | DELYADD8 | SALESRANNO | DELYTYPE | BILLYN | DELEYDATE | ORDEASTATUS |
+-----+-----+-----+-----+-----+-----+-----+
| 019001 | C00601   | 2004-01-12 | Mahastra  | S00001      |          |          |            | 2002-07-20 | InProcess
| 019002 | C00002   | 2004-01-25 | Makarstra | S00002      | P         |          |            | 2002-01-27 | Cancelled
| 019003 | C00001   | 2004-04-03 | Mahastra  | S00001      |          | Y         |            | 2002-04-07 | Fulfilled
| 019008 | C00005   | 2004-05-24 | Bikar     | S00004      |          |          |            | Process 2002-02-20 | Fulfilled
| 046865 | C00603   | 2004-02-18 | Mahastra  | S00003      |          | Y         |            | 2002-05-22 | Cancelled
| 046860 | C00002   | 2004-05-20 | Bikar     | S00002      | P         |          |            |             |
+-----+-----+-----+-----+-----+-----+-----+
```

n oils in set 8. 885 sec)

```

MariaDB [db3]> CREATE TABLE SALES_ORDER (
->     ORDERNO varchar(6) primary key,
->     CLIENTNO varchar(6) references Client_Master,
->     ORDERDATE date not null,
->     DELYADDDA varchar(25),
->     SALESMANNO varchar(6) references Salesman_Master,
->     DELIVTYPE char(1) default 'F',
->     BILLYN char(1),
->     ORDERSTATUS varchar(10),
->     CONSTRAINT CK_DELIVTYPE CHECK(DELIVTYPE IN('P','F')),
->     CONSTRAINT CK_DELYDATE CHECK(DELYDATE < ORDERDATE),
->     CONSTRAINT CK_ORDERSTATUS CHECK(ORDERSTATUS IN('In Process', 'Fulfilled', 'BackOrder', 'Cancelled'))
-> );
Query OK, 0 rows affected (0.024 sec)

MariaDB [db3]> Insert into Sales_order values ('019001', '000001', '2004-06-12', 'Maharashtra', '500001', 'F', 'N', '2002-07-20', 'In Process'), ('019002', '000002', '2004-06-25', 'Maharashtra', '500002', 'P', 'N', '2002-06-27', 'Cancelled'), ('040605', '000005', '2004-02-18', 'Maharashtra', '500003', 'F', 'Y', '2002-02-20', 'Fulfilled'), ('019003', '000003', '2004-04-01', 'Maharashtra', '500001', 'F', 'Y', '2002-04-07', 'Fulfilled'), ('040606', '000006', '2004-05-20', 'Bihar', '500002', 'P', 'N', '2002-05-22', 'Cancelled'), ('019008', '000008', '2004-05-24', 'Bihar', '500004', 'F', 'N', '2002-07-26', 'In Process');
Query OK, 6 rows affected (0.085 sec)
Records: 6  Duplicates: 0  Warnings: 0

```

c. Data for Sales OrdCr Details table:

<i>Orderho</i>	<i>Product o</i>	<i>QtyOrdereil</i>	<i>QtyDisp</i>	<i>ProductRai</i>
019001	P00001	4	4	525
019001	P07965	2	1	8400
019001	P07881	2	1	5250
019002	P00001	10	0	525
046865	P07868	3	3	3150
046865	P07885	3	1	5250
046865	P00001	10	10	525
046865	P0345	4	4	1050
0isoos	r0aiss	S	Z	loso
01°9003	P06734	1	1	12000
046866	P07965	1	0	8400
046866	P07975	1	0	1050
019008	P00001	10	5	525
019008	I'07975	5	3	1050

```

MariaDB [db3]> insert into sales_order_details values ('019001','P00001',4,4,525), ('019001','P07965',2,1,8400), ('019001','P07885',2,1,5250), ('019002','P00001',10,10,525), ('046865','P00001',10,10,525), ('046865','P03453',4,4,1050), ('019003','P03453',2,2,1050), ('019003','P06734',1,1,12000), ('046866','P07965',1,0,8400), ('046866','P07975',1,0,1050), ('019008','P088
Query OK, 14 rows affected (0.004 sec)
Records: 14  Duplicates: 0  Warnings: 0

MariaDB [db3]> select * from sales_order_details;
+-----+-----+-----+-----+-----+
| ORDERNO | PRODUCTNO | QTYORDERED | QTYDISP | PRODUCTRATE |
+-----+-----+-----+-----+-----+
| 019001 | P00001 | 4 | 4 | 525.00 |
| 019001 | P07965 | 2 | 1 | 8400.00 |
| 019001 | P07885 | 2 | 1 | 5250.00 |
| 019002 | P00001 | 10 | 0 | 525.00 |
| 046865 | P00001 | 3 | 3 | 3150.00 |
| 046865 | P07965 | 3 | 1 | 5250.00 |
| 046865 | P00001 | 10 | 10 | 525.00 |
| 046865 | P03453 | 4 | 4 | 1050.00 |
| 019003 | P03453 | 2 | 2 | 1050.00 |
| 019003 | P06734 | 1 | 1 | 12000.00 |
| 046866 | P07965 | 1 | 0 | 8400.00 |
| 046866 | P07975 | 1 | 0 | 1050.00 |
| 019003 | P06734 | 10 | 5 | 5250.00 |
| 019008 | P07975 | 5 | 3 | 1050.00 |
+-----+-----+-----+-----+-----+
14 rows in set (0.000 sec)

```

3. Using the tables created previously generate the SQL statements for the operations mentioned below. The tables in user are as follows:

a. Client_Master

b. Product_Master

c. Salesman_Master

d. Sales_Order

e. Sales_Order_Details

i) Perform the following computations on table data:

a. List the names of all clients having 'a' as the second letter in their names.

```

MariaDB [db3]> select name from client_master
    -> where name like '_a%';
+-----+
| name      |
+-----+
| Vandana Saitwal |
| Basu Navindgi   |
| Ravi Sreedharam |
+-----+
3 rows in set (0.001 sec)

```

b. List the clients who stay in a city whose First letter is 'M'.

g. List products whose selling price is greater than 500 and less than or equal to 750.

```
MariaDB [db3]> select productno,description,sellprice
    -> from product_master
    -> where sellprice>500 && sellprice<=750;
+-----+-----+-----+
| productno | description | sellprice |
+-----+-----+-----+
| P00001   | 1.44 Floppies |      525 |
| P07865   | 1.22 Floppies  |      525 |
+-----+-----+-----+
2 rows in set (0.001 sec)
```

h. List products whose selling price is more than 500. Calculate a new selling price as, original selling price*.15. Rename the new column in the output of the above query as new_price.

```
MariaDB [db3]> SELECT DESCRIPTION, SELLPRICE*0.15 "NEW_PRICE" FROM PRODUCT_MASTER WHERE SELLPRICE > 500;
+-----+-----+
| DESCRIPTION | NEW_PRICE |
+-----+-----+
| 1.44 Floppies |    78.75 |
| Monitors     | 1800.00 |
| Mouse        | 157.50 |
| 1.22 Floppies |    78.75 |
| Keyboards    | 472.50 |
| CD Drive     | 787.50 |
| 540 HDD       | 1260.00 |
| 1.44 Drive   | 157.50 |
| 1.22 Drive   | 157.50 |
+-----+-----+
9 rows in set (0.003 sec)
```

i. List the names, city and state of clients who are not in the state of 'Maharashtra'.

```
MariaDB [db3]> select name,city,state from client_master
    -> where state!='Maharashtra';
+-----+-----+-----+
| name      | city    | state   |
+-----+-----+-----+
| Akash Mittal | Mangalore | Karnataka |
| Vandana Saitwal | Madras | Tamil Nadu |
| Ravi Sreedharam | Delhi | Delhi |
+-----+-----+-----+
3 rows in set (0.001 sec)
```

j. Count the total Int of orders.

```
MariaDB [db3]> select count(qtyordered) as Total_order from sales_order_details;
+-----+
| Total_order |
+-----+
|      14 |
+-----+
1 row in set (0.001 sec)
```

k. Calculate the average price of all the products.

```
MariaDB [db3]> SELECT AVG(SELLPRICE), AVG(COSTPRICE) FROM PRODUCT_MASTER;
+-----+-----+
| AVG(SELLPRICE) | AVG(COSTPRICE) |
+-----+-----+
|      3666.6667 |      3427.7778 |
+-----+-----+
1 row in set (0.001 sec)
```

l. Determine the maximum and minimum product prices. Rename the output as max_price and min_price respectively.

```
MariaDB [db3]> SELECT MIN(SELLPRICE) "MIN_PRICE", MAX(SELLPRICE) "MAX_PRICE" FROM PRODUCT_MASTER;
+-----+-----+
| MIN_PRICE | MAX_PRICE |
+-----+-----+
|      525 |     12000 |
+-----+-----+
1 row in set (0.001 sec)
```

m. Count the Int of products having price less than or equal to 500.

```
MariaDB [db3]> SELECT COUNT(*) FROM PRODUCT_MASTER WHERE SELLPRICE <=500;
+-----+
| COUNT(*) |
+-----+
|      0 |
+-----+
1 row in set (0.001 sec)
```

n. List all the products whose QtyOnHand is less than recorder level.

```
MariaDB [db3]> SELECT DESCRIPTION FROM PRODUCT_MASTER WHERE QTYONHAND < REORDERLVL;
+-----+
| DESCRIPTION |
+-----+
| 1.22 Drive |
+-----+
1 row in set (0.001 sec)
```

ii) Exercise on Date Manipulation:

a. List the order Int and day on which clients placed their order.

```
MariaDB [db3]> SELECT ORDERNO, DAY(ORDERDATE) "ORDER DAY" FROM SALES_ORDER;
+-----+-----+
| ORDERNO | ORDER DAY |
+-----+-----+
| 019001 |      12 |
| 019002 |      25 |
| 019003 |       3 |
| 019008 |      24 |
| 046865 |      18 |
| 046866 |      20 |
+-----+-----+
6 rows in set (0.001 sec)
```

b. List the month (in alphabets) and date when the orders must be delivered.

```
MariaDB [db3]> SELECT ORDERNO, MONTH(DELYDATE) "MONTH", DELYDATE FROM SALES_ORDER;
+-----+-----+-----+
| ORDERNO | MONTH | DELYDATE  |
+-----+-----+-----+
| 019001 |      7 | 2002-07-20 |
| 019002 |      6 | 2002-06-27 |
| 019003 |      4 | 2002-04-07 |
| 019008 |      7 | 2002-07-26 |
| 046865 |      2 | 2002-02-20 |
| 046866 |      5 | 2002-05-22 |
+-----+-----+-----+
6 rows in set (0.001 sec)
```

c. List the OrderDate in the format ‘DD-Month-YY’. E.g. 12-February-02.

```
MariaDB [db3]> SELECT DATE_FORMAT(ORDERDATE, '%e-%M-%y') ORDERdATE
    -> FROM SALES_ORDER;
+-----+
| ORDERdATE |
+-----+
| 12-June-04 |
| 25-June-04 |
| 3-April-04 |
| 24-May-04  |
| 18-February-04 |
| 20-May-04  |
+-----+
6 rows in set (0.001 sec)
```

d. List the date, 15 days after today's date.

```
MariaDB [db3]> SELECT DATE_ADD("2022-01-25", INTERVAL 15 DAY);
+-----+
| DATE_ADD("2022-01-25", INTERVAL 15 DAY) |
+-----+
| 2022-02-09 |
+-----+
1 row in set (0.001 sec)
```

4. Exercises on using Having and Group By Clauses:

a. Print the description and total qty sold for each product.

```
MariaDB [db3]> SELECT DESCRIPTION, SUM(QTYDISP) FROM PRODUCT_MASTER PM, SALES_ORDER_DETAILS SOD WHERE PM.PRODUCTNO = SOD
._PRODUCTNO GROUP BY DESCRIPTION;
+-----+-----+
| DESCRIPTION | SUM(QTYDISP) |
+-----+-----+
| 1.44 Drive | 3 |
| 1.44 Floppies | 19 |
| 540 HDD | 1 |
| CD Drive | 2 |
| Keyboards | 3 |
| Monitors | 6 |
| Mouse | 1 |
+-----+-----+
7 rows in set (0.001 sec)
```

b. Find the value of each product sold.

```
MariaDB [db3]> SELECT SOD.PRODUCTNO, PM.DESCRIPTION, SUM(SOD.QTYDISP * SOD.PRODUCTRATE) SALESPERPRODUCT FROM SALES_ORDER
_DETAILS SOD, PRODUCT_MASTER PM WHERE PM.PRODUCTNO = SOD.PRODUCTNO GROUP BY PM.PRODUCTNO;
+-----+-----+-----+
| PRODUCTNO | DESCRIPTION | SALESPERPRODUCT |
+-----+-----+-----+
| P00001 | 1.44 Floppies | 9975.00 |
| P03453 | Monitors | 6300.00 |
| P06734 | Mouse | 12000.00 |
| P07868 | Keyboards | 9450.00 |
| P07885 | CD Drive | 10500.00 |
| P07965 | 540 HDD | 8400.00 |
| P07975 | 1.44 Drive | 3150.00 |
+-----+-----+-----+
7 rows in set (0.001 sec)
```

c. Calculate the average qty sold for each client that has a maximum order value of 15000.00.

```
MariaDB [db3]> SELECT SO.CLIENTNO, AVG(SOD.QTYDISP) AVGSALES
    -> FROM SALES_ORDER_DETAILS SOD, SALES_ORDER SO WHERE SO.ORDERNO = SOD.ORDERNO
    -> GROUP BY SO.CLIENTNO HAVING MAX(SOD.QTYORDERED * SOD.PRODUCTRATE) > 15000;
+-----+-----+
| CLIENTNO | AVGSALES |
+-----+-----+
| C00001   | 1.8000  |
| C00003   | 4.5000  |
+-----+-----+
2 rows in set (0.001 sec)
```

d. Find out the total of all the billed orders for the month of June.

```
MariaDB [db3]> SELECT SO.ORDERNO, SO.ORDERDATE, SUM(SOD.QTYORDERED * SOD.PRODUCTRATE) ORDERBILLED FROM SALES_ORDER SO, SALES_ORDER_DETAILS SOD WHERE SOD.ORDERNO = SO.ORDERNO AND SO.BILLYN = 'Y' AND MONTH(ORDERDATE) = 'JUNE' GROUP BY SO.ORDERNO, SO.ORDERDATE;
Empty set, 1 warning (0.001 sec)
```

i) Exercise on Joins and Correction:

a. Find out the products, which have been sold to 'Ivan Bayross'.

```
MariaDB [db3]> SELECT SOD.PRODUCTNO, PM.DESCRIPTION FROM SALES_ORDER_DETAILS SOD, PRODUCT_MASTER PM, SALES_ORDER SO, CLIENT_MASTER CM WHERE PM.PRODUCTNO = SOD.PRODUCTNO AND SO.ORDERNO = SOD.ORDERNO AND CM.CLIENTNO = SO.CLIENTNO AND CM.NAME = 'Ivan Bayross';
+-----+-----+
| PRODUCTNO | DESCRIPTION  |
+-----+-----+
| P00001   | 1.44 Floppies |
| P07965   | 540 HDD        |
| P07885   | CD Drive       |
| P03453   | Monitors       |
| P06734   | Mouse          |
+-----+-----+
5 rows in set (0.001 sec)
```

b. Find out the products and their quantities that will have to be delivered in the current month.

```
MariaDB [db3]> SELECT SOD.PRODUCTNO, PM.DESCRIPTION, SUM(SOD.QTYORDERED) FROM SALES_ORDER_DETAILS SOD, SALES_ORDER SO, PRODUCT_MASTER PM WHERE PM.PRODUCTNO = SOD.PRODUCTNO AND SO.ORDERNO = SOD.ORDERNO AND MONTH(DELYDATE) = MONTH(CURRENT_DATE) GROUP BY SOD.PRODUCTNO, PM.DESCRIPTION;
Empty set (0.001 sec)
```

c. List the ProductNo. and description of constantly sold (i.e. rapidly moving) products.

```
MariaDB [db3]> SELECT DISTINCT PRODUCT_MASTER.PRODUCTNO, DESCRIPTION FROM SALES_ORDER_DETAILS, PRODUCT_MASTER WHERE PRODUCT_MASTER.PRODUCTNO = SALES_ORDER_DETAILS.PRODUCTNO;
+-----+-----+
| PRODUCTNO | DESCRIPTION  |
+-----+-----+
| P00001   | 1.44 Floppies |
| P07965   | 540 HDD        |
| P07885   | CD Drive       |
| P07868   | Keyboards      |
| P03453   | Monitors       |
| P06734   | Mouse          |
| P07975   | 1.44 Drive     |
+-----+-----+
7 rows in set (0.001 sec)
```

e. Find the names of clients who have purchased 'Trousers'.

```
MariaDB [db3]> SELECT DISTINCT SO.CLIENTNO, CM.NAME FROM SALES_ORDER_DETAILS SOD, SALES_ORDER SO, PRODUCT_MASTER PM, CLIENT_MASTER CM WHERE PM.PRODUCTNO = SOD.PRODUCTNO AND SO.ORDERNO = SOD.ORDERNO AND CM.CLIENTNO = SO.CLIENTNO AND DESCRIPTION = 'Trousers';
Empty set (0.001 sec)
```

f. List the products and orders from customers who have ordered less than 5 units of 'Pull Overs'.

```
MariaDB [db3]> SELECT SOD.PRODUCTNO, SOD.ORDERNO FROM SALES_ORDER_DETAILS SOD, SALES_ORDER SO, PRODUCT_MASTER PM WHERE SO.ORDERNO = SOD.ORDERNO AND PM.PRODUCTNO = SOD.PRODUCTNO AND SOD.QTYORDERED < description = 'Pull Overs';
+-----+-----+
| PRODUCTNO | ORDERNO |
+-----+-----+
| P00001   | 019001  |
| P07885   | 019001  |
| P00001   | 019002  |
| P07868   | 046865  |
| P07885   | 046865  |
| P00001   | 046865  |
| P03453   | 046865  |
| P03453   | 019003  |
| P06734   | 019003  |
| P00001   | 019008  |
| P07975   | 019008  |
+-----+-----+
11 rows in set, 15 warnings (0.001 sec)
```

g. Find the products and their quantities for the orders placed by 'Ivan Bayross' and 'Mamta Muzumdar'

```
MariaDB [db3]> SELECT SOD.PRODUCTNO, PM.DESCRIPTION, SUM(QTYORDERED) UNITSORDERED FROM SALES_ORDER_DETAILS SOD, SALES_ORDER SO, PRODUCT_MASTER PM, CLIENT_MASTER CM WHERE SO.ORDERNO = SOD.ORDERNO AND PM.PRODUCTNO = SOD.PRODUCTNO AND CM.CLIENTNO = SO.CLIENTNO AND (CM.NAME = 'Ivan Bayross' OR CM.NAME = 'Mamta Muzumdar') GROUP BY SOD.PRODUCTNO, PM.DESCRIPTION;
+-----+-----+-----+
| PRODUCTNO | DESCRIPTION | UNITSORDERED |
+-----+-----+-----+
| P00001   | 1.44 Floppies |      4 |
| P03453   | Monitors       |      2 |
| P06734   | Mouse          |      1 |
| P07885   | CD Drive        |      2 |
| P07965   | 540 HDD         |      2 |
+-----+-----+-----+
5 rows in set (0.001 sec)
```

h. Find the products and their quantities for the orders placed by ClientNo 'C00001' and C00002'.

```
MariaDB [db3]> SELECT SO.CLIENTNO, SOD.PRODUCTNO, PM.DESCRIPTION, SUM(QTYORDERED) UNITSORDERED FROM SALES_ORDER SO, SALES_ORDER_DETAILS SOD, PRODUCT_MASTER PM, CLIENT_MASTER CM WHERE SO.ORDERNO = SOD.ORDERNO AND SOD.PRODUCTNO = PM.PRODUCTNO AND SO.CLIENTNO = CM.CLIENTNO GROUP BY SO.CLIENTNO, SOD.PRODUCTNO, PM.DESCRIPTION HAVING SO.CLIENTNO = 'C00001' OR SO.CLIENTNO = 'C00002';
+-----+-----+-----+-----+
| CLIENTNO | PRODUCTNO | DESCRIPTION | UNITSORDERED |
+-----+-----+-----+-----+
| C00001   | P00001    | 1.44 Floppies | 4          |
| C00001   | P03453    | Monitors      | 2          |
| C00001   | P06734    | Mouse         | 1          |
| C00001   | P07885    | CD Drive     | 2          |
| C00001   | P07965    | 540 HDD      | 2          |
| C00002   | P00001    | 1.44 Floppies | 10         |
| C00002  | P07965   | 540 HDD      | 1          |
| C00002  | P07975   | 1.44 Drive   | 1          |
+-----+-----+-----+-----+
8 rows in set (0.003 sec)
```

ii) Exercise on Sub-queries:

- a. Find the ProductNo and description of non-moving products i.e. products not being sold.**

```
MariaDB [db3]> SELECT PRODUCTNO, DESCRIPTION FROM PRODUCT_MASTER WHERE PRODUCTNO NOT IN(SELECT PRODUCTNO FROM SALES_ORDER_DETAILS);
+-----+-----+
| PRODUCTNO | DESCRIPTION |
+-----+-----+
| P07865   | 1.22 Floppies |
| P08865   | 1.22 Drive   |
+-----+-----+
2 rows in set (0.007 sec)
```

- b. List the customer Name, Address1, Address2, City and PinCode for the client who has placed order no 'O19001'.**

```
MariaDB [db3]> SELECT NAME, ADDRESS1, ADDRESS2, CITY, PINCODE FROM CLIENT_MASTER WHERE CLIENTNO IN(SELECT CLIENTNO FROM SALES_ORDER WHERE ORDERNO = 'O19001');
+-----+-----+-----+-----+-----+
| NAME    | ADDRESS1 | ADDRESS2 | CITY    | PINCODE |
+-----+-----+-----+-----+-----+
| Ivan Bayross | R-274    | Bandra    | Bombay  | 400054 |
+-----+-----+-----+-----+
1 row in set (0.001 sec)
```

- c. List the client names that have placed orders before the month of May, 02.**

```
MariaDB [db3]> SELECT CLIENTNO, NAME FROM CLIENT_MASTER WHERE CLIENTNO IN(SELECT CLIENTNO FROM SALES_ORDER WHERE MONTH(ORDERDATE)<'05' AND YEAR(ORDERDATE)<'02');
Empty set (0.001 sec)
```

- d. List if the product 'Lycra Top' has been ordered by any client and print the Client_no, Name to whom it was sold.**

```
MariaDB [db3]> SELECT CLIENTNO, NAME FROM CLIENT_MASTER WHERE CLIENTNO IN(SELECT CLIENTNO FROM SALES_ORDER WHERE ORDERNO IN(SELECT ORDERNO FROM SALES_ORDER_DETAILS WHERE PRODUCTNO IN(SELECT PRODUCTNO FROM PRODUCT_MASTER WHERE DESCRIPTION = 'Lycra Top')));  
Empty set (0.001 sec)
```

e. List the names of clients who have placed orders worth Rs. 10000 or more.

```
MariaDB [db3]> SELECT NAME FROM CLIENT_MASTER WHERE CLIENTNO IN(SELECT CLIENTNO FROM SALES_ORDER WHERE ORDERNO IN(SELECT ORDERNO FROM SALES_ORDER_DETAILS WHERE(QTYORDERED * PRODUCTRATE) >= 10000));  
+-----+  
| NAME |  
+-----+  
| Ivan Bayross |  
| Pramada Jaguste |  
+-----+  
2 rows in set (0.001 sec)
```

THE END
