Lab - Working with Database in Python Programming

1. Create the following tables:

Table name: CLIENT_MASTER

Column Name	Data Type	Size	Attributes
CLIENTNO	Varchar2	6	Primary Key / First letter must start with 'C'
NAME	Varchar2	20	Not Null
CITY	Varchar2	15	
PINCODE	Number	8	
STATE	Varchar2	15	
BALDUE	Number	10,2	

Table_Name: PRODUCT_MASTER

Column Name	Data Type	Size	Attributes
PRODUCTNO	Varchar2	6	Primary Key / First letter must start with 'P'
DESCRIPTION	Varchar2	15	Not Null
PROFITPERCENT	Number	4,2	Not Null
UNITMEASURE	Varchar2	10	Not Null
QTYONHAND	Number	8	Not Null
REORDERLVL	Number	8	Not Null
SELLPRICE	Number	8,2	Not Null, cannot be 0
COSTPRICE	Number	8,2	Not Null, cannot be 0

Table_Name: SALESMAN_MASTER

Column Name	Data Type	Size	Attributes
SALESMANNO	Varchar2	6	Primary Key / First letter must start with ‘S’
SALESMANNAME	Varchar2	20	Not Null
ADDRESS1	Varchar2	30	Not Null
ADDRESS2	Varchar2	30	
CITY	Varchar2	20	
PINCODE	Number	8	
STATE	Varchar2	20	
SALAMT	Number	8,2	Not Null, cannot be 0
TGTTOGET	Number	6,2	Not Null, cannot be 0
YTDSALES	Number	6,2	Not Null
REMARKS	Varchar2	60	

Table_Name: SALES_ORDER

Column Name	Data Type	Size	Attributes
ORDERNO	Varchar2	6	Primary Key / First letter must start with ‘O’
CLIENTNO	Varchar2	6	Foreign Key references ClientNo of Client_Master table
ORDERDATE	Date		Not Null
DELYADDR	Varchar2	25	
SALESMANNO	Varchar2	6	Foreign Key references SalesmanNo of Salesman_Master table
DELYTYPE			

	Char	1	
BILLYN	Char	1	
DELYDATE	Date		
ORDERSTATUS	Varchar2	10	

Table_Name: SALES_ORDER_DETAILS

Column Name	Data Type	Size	Attributes
ORDERNO	Varchar2	6	Foreign Key references OrderNo of Sales_Order table
PRODUCTNO	Varchar2	6	Foreign Key references ProductNo of Product_Master table
QTYORDERED	Number	8	
QTYDISP	Number	8	
PRODUCTRATE	Number	10,2	

2. Insert the following data into their respective tables:

Data for CLIENT_MASTER table:

CLIENT	NAME	CITY	PINCODE	STATE	BALDUE
C00001	Ivan Bayross	Mumbai	400054	Maharashtra	15000
C00003	Chhaya Bankar	Mumbai	400057	Maharashtra	5000
C00004	Ashwini Joshi	Bangalore	560001	Karnataka	0
C00005	Hansel Colaco	Mumbai	400060	Maharashtra	2000
C00006	Deepak Sharma	Mangalore	560050	Karnataka	0

Data for PRODUCT_MASTER table

PRODUC	DESCRIPTION	PROFITPERCENT	UNITMEASUR	QTYONHAND	REORDERLVL	SELLPRICE	COSTPRICE
P00001	T-Shirts	5	Piece	200	50	350	250
P03453	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 Shirts	4	Piece	100	40	350	250
P07975	Lycra Tops	5	Piece	70	30	300	175
P08865	Skirts	5	Piece	75	30	450	300

Data for SALESMAN_MASTER table

SALESM	SALESMANNAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	SALAMT	TGTTOGET	YTDSALES	REMARKS
S00001	Aman	A/14	Worli	Mumbai	400002	Maharashtra	3000	100	50	Good
S00002	Omkar	65	Nariman	Mumbai	400001	Maharashtra	3000	200	100	Good
S00003	Raj	P-7	Bandra	Mumbai	400032	Maharashtra	3000	200	100	Good
S00004	Ashish	A/5	Juhu	Bombay	400044	Maharashtra	3500	200	150	Good

Data for Sales_Order Table

ORDERN	CLIENT	ORDERDATE	DELYADDR	SALESM	D	B	DELYDATE	ORDERSTATU
O19003	C00001	03-APR-02	Delhi	S00001	F	Y	07-APR-02	Fulfilled
O46866	C00004	20-MAY-02	Delhi	S00002	P	N	22-MAY-02	Cancelled
O19008	C00005	24-MAY-02	Delhi	S00004	F	N	26-JUL-96	In Process
O19001	C00001	12-JUN-02	Delhi	S00001	F	N	20-JUL-02	In Process
O19002	C00002	25-JUN-02	Delhi	S00002	P	N	27-JUL-02	Cancelled

Data for Sales_Order _Details Table

OrderNo	ProductNo	Qtyordered	QtyDisp	ProductRate
O19001	P00001	4	4	525
O19001	P07965	2	1	8400
O19001	P07885	2	1	5250
O19002	P00001	10	0	525
O46865	P07868	3	3	3150
O46865	P07885	3	1	5250
O46865	P00001	10	10	525
O46865	P03453	4	4	1050
O19003	P03453	2	2	1050
O19003	P06734	1	1	12000
O46866	P07965	1	0	8400
O46866	P07975	1	0	1050
O19008	P00001	10	5	525
O19008	P07975	5	3	1050

3. Generate the SQL statements to perform the following computations on table data in Python IDLE:

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

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

c. List all clients who stay in 'Bangalore' or 'Mangalore'.

d. List all clients whose BalDue is greater than value 10000.

e. List all information from the Sales_order table for order placed in the month of June.

f. List the Order No & day on which clients placed their order.

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

4. Exercises on Using Having, Group By and Joins in Python IDLE:

a. Printing the description and total quantity sold for each product.

b. Calculating the average quantity sold for each client that has a maximum order value of 15000.00.