ASSIGNMENT NO : 3

[Procedural and Non-Procedural Query Language]

Write down your own queries to retrieve the data from the relational schema of the corresponding project made in assignment 2 using the following:

Creating Tables and inserting values in it

```
Create database OrderManagement;
Use OrderManagement;
CREATE TABLE Product_info (
 MODELNO varchar(6) unique,
 CP numeric(6,2),
 DESCRIPTION varchar(15) not null,
 REMARKS varchar(10),
 PRODUCTID varchar(5) Primary key
);
INSERT INTO  Product_Info VALUES ('TS1224',1200 ,'T-Shirts', 'Good', 'P0034');
INSERT INTO  Product_Info VALUES ('TS3124',1000 ,'T-Shirts', 'Average', 'P0044');
INSERT INTO  Product_Info VALUES ('S4324',2100 ,'Shirts', 'Good', 'P0054');
INSERT INTO  Product_Info VALUES ('S4624',1200 ,'Shirts', 'Excellent', 'P0055');
INSERT INTO  Product_Info VALUES ('J5224',1300 ,'Jeans', 'Good', 'P0057');
INSERT INTO  Product_Info VALUES ('J6624',1400 ,'Jeans', 'Excellent', 'P0060');
INSERT INTO  Product_Info VALUES ('TR5624',1350 ,'Trousers', 'Good', 'P0062');
INSERT INTO  Product_Info VALUES ('SK4524',700 ,'Skirts', 'Good', 'P0063');
INSERT INTO  Product_Info VALUES ('SK8494',800 ,'Skirts', 'Average', 'P0064');
INSERT INTO  Product_Info VALUES ('PO9877',900 ,'Pull Overs', 'Good', 'P0074');
Select * from Product_Info;
```

OUTPUT :

MODELNO	CP	DESCRIPTION	REMARKS	PRODUCTID
TS1224	1200.00	T-Shirts	Good	P0034
TS3124	1000.00	T-Shirts	Average	P0044
S4324	2100.00	Shirts	Good	P0054
S4624	1200.00	Shirts	Excellent	P0055
J5224	1300.00	Jeans	Good	P0057
J6624	1400.00	Jeans	Excellent	P0060
TR5624	1350.00	Trousers	Good	P0062
SK4524	700.00	Skirts	Good	P0063
SK8494	800.00	Skirts	Average	P0064
PO9877	900.00	Pull Overs	Good	P0074
NULL	NULL	NULL	NULL	NULL

```
CREATE TABLE Client (
ClientId varchar(6) primary key,
LoginId varchar(20) unique
);

INSERT INTO Client VALUES ('C00001', 'Ivan99');
INSERT INTO Client VALUES ('C00002', 'Robert96');
INSERT INTO Client VALUES ('C00003', 'Annie90');
INSERT INTO Client VALUES ('C00004', 'Harish67');
INSERT INTO Client VALUES ('C00005', 'Anmol00');
INSERT INTO Client VALUES ('C00006', 'Puneet80');
INSERT INTO Client VALUES ('C00007', 'Clark80');
INSERT INTO Client VALUES ('C00008', 'Hardeep01');
INSERT INTO Client VALUES ('C00009', 'Amit86');
INSERT INTO Client VALUES ('C00010', 'Mohit87');
INSERT INTO Client VALUES ('F00001', 'pawan2453');
INSERT INTO Client VALUES ('F00002', 'aditya6786');
INSERT INTO Client VALUES ('F00003', 'mustard2341');
INSERT INTO Client VALUES ('F00004', 'hues1236');
```

```
INSERT INTO Client VALUES ('F00005', 'brown1765');
INSERT INTO Client VALUES ('F00006', 'zodiac7567');
INSERT INTO Client VALUES ('F00007', 'mohan9789');
INSERT INTO Client VALUES ('F00008', 'rohit5738');
INSERT INTO Client VALUES ('F00009', 'shiva9324');
INSERT INTO Client VALUES ('F00010', 'unified0784');

Select * from client;
```

OUTPUT :

ClientId	LoginId
F00002	aditya6786
C00009	Amit86
C00005	Anmol00
C00003	Annie90
F00005	brown1765
C00007	Clark80
C00008	Hardeep01
C00004	Harish67
F00004	hues1236
C00001	Ivan99
F00007	mohan9789
C00010	Mohit87
F00003	mustard2341
F00001	pawan2453

```
CREATE TABLE Individual (
 Bday Date,
 Fname varchar(10),
 Mname varchar(10),
```

```
 Lname varchar(10),
 Srt_No varchar(15),
 City varchar(15),
 State varchar(15),
 Pincode numeric(6),
 ClientId varchar(6), Foreign key(ClientId) References Client(ClientId),
 AddharNo numeric(5) Primary key,
 Check (ClientId like 'C%')
);


INSERT INTO  Individual VALUES ('1999-01-01', 'Ivan', 'John', 'Bayross', 'Lan-2', 'Mumbai',
'Maharashtra', 400054,  'C00001', 14253);

INSERT INTO  Individual VALUES ('1996-03-03', 'Robert', 'Miller', 'Brown', 'Street-5', 'Pune',
'Maharashtra', 400053, 'C00002', 12324);

INSERT INTO  Individual VALUES ('1990-02-04', 'Annie', 'Crown', 'Mayers', 'Street-32',
'Bangalore', 'Karnataka', 540053, 'C00003', 12514);

INSERT INTO  Individual VALUES ('1967-05-04', 'Harish', 'Singh', 'Rawat', 'Street-21',
'Amritsar', 'Punjab', 151002, 'C00004', 21724);

INSERT INTO  Individual VALUES ('2000-03-22', 'Anmol', 'Singh', 'Gill', 'Street-244',
'Faridkot', 'Punjab', 151920, 'C00005', 36324);

INSERT INTO  Individual VALUES ('1980-07-23', 'Puneet', 'Singh', 'Kohli', 'Lan-12', 'Nagpur',
'Maharashtra', 403033, 'C00006', 78824);

INSERT INTO  Individual VALUES ('1996-03-23', 'Clark', 'Robert', 'Miller', 'Street-35',
'Chennai', 'Tamil Nadu', 520053, 'C00007', 12124);

INSERT INTO  Individual VALUES ('2001-04-13', 'Hardeep', 'Singh', 'Mann', 'Street-123',
'Bathinda', 'Punjab', 151001, 'C00008', 71434);

INSERT INTO  Individual VALUES ('1986-08-17', 'Amit', 'Miller', 'Brown', 'Lan-124', 'Jaipur',
'Rajasthan', 343353, 'C00009', 56724);

INSERT INTO  Individual VALUES ('1987-10-17', 'Mohit', 'Rajput', 'Rathore', 'Street-14',
'Jodhpur', 'Rajasthan', 345453, 'C00010', 45724);


Select * from Individual;
```

OUTPUT :

Bday	Fname	Mname	Lname	Srt_No	City	State	Pincode	ClientId	AddharNo
1996-03-23	Clark	Robert	Miller	Street-35	Chennai	Tamil Nadu	520053	C00007	12124
1996-03-03	Robert	Miller	Brown	Street-5	Pune	Maharashtra	400053	C00002	12324
1990-02-04	Annie	Crown	Mayers	Street-32	Bangalore	Karnataka	540053	C00003	12514
1999-01-01	Ivan	John	Bayross	Lan-2	Mumbai	Maharashtra	400054	C00001	14253
1967-05-04	Harish	Singh	Rawat	Street-21	Amritsar	Punjab	151002	C00004	21724
2000-03-22	Anmol	Singh	Gill	Street-244	Faridkot	Punjab	151920	C00005	36324
1987-10-17	Mohit	Rajput	Rathore	Street-14	Jodhpur	Rajasthan	345453	C00010	45724
1986-08-17	Amit	Miller	Brown	Lan-124	Jaipur	Rajasthan	343353	C00009	56724
2001-04-13	Hardeep	Singh	Mann	Street-123	Bathinda	Punjab	151001	C00008	71434
1980-07-23	Puneet	Singh	Kohli	Lan-12	Nagpur	Maharashtra	403033	C00006	78824
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
CREATE TABLE Mobile_No (
 MobileNo numeric(10),
 AddharNo numeric(5), Foreign key(AddharNo) references individual(AddharNo),
 Primary key (MobileNo , AddharNo)
);

INSERT INTO Mobile_No VALUES (9474858523,14253 );
INSERT INTO Mobile_No VALUES (9474858511,12324 );
INSERT INTO Mobile_No VALUES (9474858512,12514 );
INSERT INTO Mobile_No VALUES (9474858678,21724 );
INSERT INTO Mobile_No VALUES (9474858134,36324 );
INSERT INTO Mobile_No VALUES (8874858523,78824 );
INSERT INTO Mobile_No VALUES (7774858523,12124 );
INSERT INTO Mobile_No VALUES (9654858523,71434 );
INSERT INTO Mobile_No VALUES (9744858523,56724 );
INSERT INTO Mobile_No VALUES (8474858523,45724 );

Select * from Mobile_No;
```

OUTPUT :

	MobileNo	AddharNo
▶	7774858523	12124
	9474858511	12324
	9474858512	12514
	9474858523	14253
	9474858678	21724
	9474858134	36324
	8474858523	45724
	9744858523	56724
	9654858523	71434
	8874858523	78824
*	NULL	NULL

```
CREATE TABLE Firm (
 Fname varchar(10),
 Mname varchar(10),
 Lname varchar(10),
 Srt_No varchar(15),
 City varchar(15),
 State varchar(15),
 Pincode numeric(6),
 Reg_No varchar(6) Primary key,
 ClientId varchar(6) ,Foreign key(ClientId) References Client(ClientId),
 Check (ClientId Like 'F%')
);
```

```
INSERT INTO FIRM VALUES ('Pawan', 'Padamawati', 'Clothing', 'Street-112',
'Nagpur', 'Maharashtra', 403033, 'MA2453', 'F00001' );
```

INSERT INTO FIRM VALUES ('Aditya', 'Fabric', 'Centre', 'Lan-42', 'Amritsar', 'Punjab', 151002, 'PU6786', 'F00002');

INSERT INTO FIRM VALUES ('Mustard', 'Clothing', 'Company', 'Street-56', 'Chennai', 'Tamil Nadu', 520053, 'TN2341', 'F00003');

INSERT INTO FIRM VALUES ('Hues', 'Private', 'Limited', 'Street-11', 'Ludhiana', 'Punjab', 151330, 'PU1236', 'F00004');

INSERT INTO FIRM VALUES ('Brown', 'Clothing', 'Company', 'Lan-25', 'Mumbai', 'Maharashtra', 400054, 'MA1765', 'F00005');

INSERT INTO FIRM VALUES ('Zodiac', 'Limited', 'Clothing', 'Street-57', 'Bangalore', 'Karnataka', 540053, 'KA7567', 'F00006');

INSERT INTO FIRM VALUES ('Mohan', 'Clothing', 'Company', 'Lan-96', 'Udaipur', 'Rajasthan', 355453, 'RA9789', 'F00007');

INSERT INTO FIRM VALUES ('Rohit', 'Fabric', 'Centre', 'Street-2', 'Patna', 'Bihar', 704554, 'BI5738', 'F00008');

INSERT INTO FIRM VALUES ('Shiva', 'Private', 'Limited', 'Lan-213', 'Pune', 'Maharashtra', 400053, 'MA9324', 'F00009');

INSERT INTO FIRM VALUES ('Unified', 'Clothing', 'Company', 'Street-54', 'Jodhpur', 'Rajasthan', 355453, 'RA0784', 'F00010');

Select * from Firm;

OUTPUT :

Fname	Mname	Lname	Srt_No	City	State	Pincode	Reg_No	ClientId
Rohit	Fabric	Centre	Street-2	Patna	Bihar	704554	BI5738	F00008
Zodiac	Limited	Clothing	Street-57	Bangalore	Karnataka	540053	KA7567	F00006
Brown	Clothing	Company	Lan-25	Mumbai	Maharashtra	400054	MA1765	F00005
Pawan	Padamawati	Clothing	Street-112	Nagpur	Maharashtra	403033	MA2453	F00001
Shiva	Private	Limited	Lan-213	Pune	Maharashtra	400053	MA9324	F00009
Hues	Private	Limited	Street-11	Ludhiana	Punjab	151330	PU1236	F00004
Aditya	Fabric	Centre	Lan-42	Amritsar	Punjab	151002	PU6786	F00002
Unified	Clothing	Company	Street-54	Jodhpur	Rajasthan	355453	RA0784	F00010
Mohan	Clothing	Company	Lan-96	Udaipur	Rajasthan	355453	RA9789	F00007
Mustard	Clothing	Company	Street-56	Chennai	Tamil Nadu	520053	TN2341	F00003
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

CREATE TABLE EmailId (

```
 EmailId varchar(21),
 Reg_No varchar(6),
 Primary key (EmailId, Reg_No)
);
INSERT INTO EmailID VALUES ('pawan2453@gmail.com', 'MA2453');
INSERT INTO EmailID VALUES ('aditya6786@yahoo.com', 'PU6786');
INSERT INTO EmailID VALUES ('mustard2341@gmail.com', 'TN2341');
INSERT INTO EmailID VALUES ('hues1236@gmail.com', 'PU1236');
INSERT INTO EmailID VALUES ('brown1765@yahoo.com', 'MA1765');
INSERT INTO EmailID VALUES ('zodiac7567@gmail.com', 'KA7567');
INSERT INTO EmailID VALUES ('mohan9789@gmail.com', 'RA9789');
INSERT INTO EmailID VALUES ('rohit5738@yahoo.com', 'BI5738');
INSERT INTO EmailID VALUES ('shiva9324@gmail.com', 'MA9324');
INSERT INTO EmailID VALUES ('unified0784@gmail.com', 'RA0784');
Select * from EmailId;
```

OUTPUT :

EmailId	Reg_No
aditya6786@yahoo.com	PU6786
brown1765@yahoo.com	MA1765
hues1236@gmail.com	PU1236
mohan9789@gmail.com	RA9789
mustard2341@gmail.com	TN2341
pawan2453@gmail.com	MA2453
rohit5738@yahoo.com	BI5738
shiva9324@gmail.com	MA9324
unified0784@gmail.com	RA0784
zodiac7567@gmail.com	KA7567
NULL	NULL

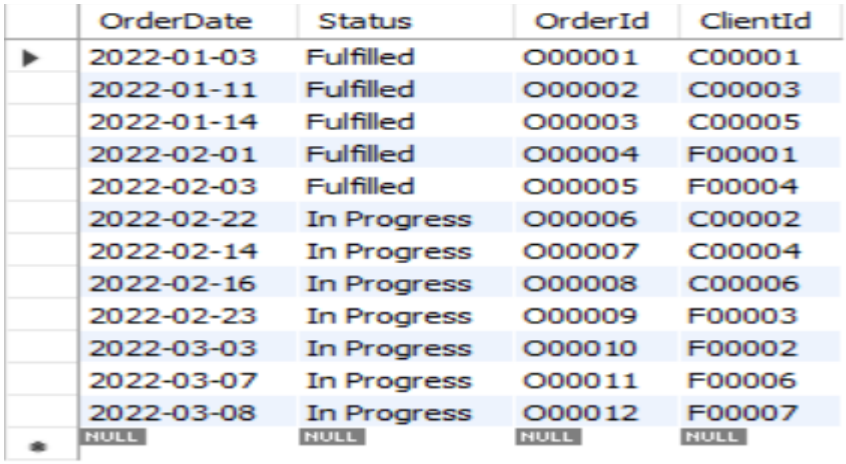
```
CREATE TABLE Order_info (
 OrderDate Date,
 Status varchar(11),
 OrderId varchar(6) Primary key,
 ClientId varchar(6), Foreign key(ClientId) References Client(ClientId),
 check (Status in ("Fulfilled", "In Progress"))
);

INSERT INTO  Order_Info VALUES ('2022-01-03', 'Fulfilled', 'O00001', 'C00001');
INSERT INTO  Order_Info VALUES ('2022-01-11', 'Fulfilled', 'O00002', 'C00003');
INSERT INTO  Order_Info VALUES ('2022-01-14', 'Fulfilled', 'O00003', 'C00005');
INSERT INTO  Order_Info VALUES ('2022-02-01', 'Fulfilled', 'O00004', 'F00001');
INSERT INTO  Order_Info VALUES ('2022-02-03', 'Fulfilled', 'O00005', 'F00004');

INSERT INTO  Order_Info VALUES ('2022-02-22', 'In Progress', 'O00006', 'C00002');
INSERT INTO  Order_Info VALUES ('2022-02-14', 'In Progress', 'O00007', 'C00004');
INSERT INTO  Order_Info VALUES ('2022-02-16', 'In Progress', 'O00008', 'C00006');
INSERT INTO  Order_Info VALUES ('2022-02-23', 'In Progress', 'O00009', 'F00003');
INSERT INTO  Order_Info VALUES ('2022-03-03', 'In Progress', 'O00010', 'F00002');
INSERT INTO  Order_Info VALUES ('2022-03-07', 'In Progress', 'O00011', 'F00006');
INSERT INTO  Order_Info VALUES ('2022-03-08', 'In Progress', 'O00012', 'F00007');


Select * from Order_Info;
```

OUTPUT :



	OrderDate	Status	OrderId	ClientId
▶	2022-01-03	Fulfilled	O00001	C00001
	2022-01-11	Fulfilled	O00002	C00003
	2022-01-14	Fulfilled	O00003	C00005
	2022-02-01	Fulfilled	O00004	F00001
	2022-02-03	Fulfilled	O00005	F00004
	2022-02-22	In Progress	O00006	C00002
	2022-02-14	In Progress	O00007	C00004
	2022-02-16	In Progress	O00008	C00006
	2022-02-23	In Progress	O00009	F00003
	2022-03-03	In Progress	O00010	F00002
	2022-03-07	In Progress	O00011	F00006
	2022-03-08	In Progress	O00012	F00007
*	NULL	NULL	NULL	NULL

```
CREATE TABLE Fulfilled (
 Paymethod varchar(16),
 DelayDate Date,
 OrderId varchar(6),Foreign key(OrderId) References Order_info(OrderId),
 Primary Key (OrderId)
 );


INSERT INTO FULFILLED VALUES ('ONLINE', '2022-01-16', 'O00001');
INSERT INTO FULFILLED VALUES ('ONLINE', '2022-01-28', 'O00002');
INSERT INTO FULFILLED VALUES ('CASH ON DELIVERY', '2022-01-29',
'O00003');
INSERT INTO FULFILLED VALUES ('CASH ON DELIVERY', '2022-02-20',
'O00004');
INSERT INTO FULFILLED VALUES ('ONLINE', '2022-02-22', 'O00005');


Select * from Fulfilled;
```

OUTPUT :

Paymethod	DelayDate	OrderId
ONLINE	2022-01-16	O00001
ONLINE	2022-01-28	O00002
CASH ON DELIVERY	2022-01-29	O00003
CASH ON DELIVERY	2022-02-20	O00004
ONLINE	2022-02-22	O00005
NULL	NULL	NULL

```
CREATE TABLE InProgress (
 Exp_DelyDate Date,
 OrderId varchar(6), Foreign key(OrderId) References Order_info(OrderId),
 Primary Key (OrderId)
);

INSERT INTO InProgress VALUES ('2022-03-07', 'O00006');
INSERT INTO InProgress VALUES ('2022-03-03', 'O00007');
INSERT INTO InProgress VALUES ('2022-03-05', 'O00008');
INSERT INTO InProgress VALUES ('2022-03-10', 'O00009');
INSERT INTO InProgress VALUES ('2022-03-20', 'O00010');
INSERT INTO InProgress VALUES ('2022-03-22', 'O00011');
INSERT INTO InProgress VALUES ('2022-03-27', 'O00012');

Select * from InProgress;
```

OUTPUT :

	Exp_DelyDate	OrderId
▶	2022-03-07	O00006
	2022-03-03	O00007
	2022-03-05	O00008
	2022-03-10	O00009
	2022-03-20	O00010
	2022-03-22	O00011
	2022-03-27	O00012
*	NULL	NULL

```
CREATE TABLE Order_dtls (
 ItemNo numeric(6),
 Qty numeric(3) not null,
 Discount numeric(4,2) default 5,
 PricePerItem numeric(6,2),
 ProductId varchar(5), Foreign key(ProductId) References Product_info(ProductId),
 OrderId varchar(6), Foreign key(OrderId) References Order_info(OrderId),
 Primary Key (ItemNo, OrderId)
);

INSERT INTO  Order_Dtls VALUES (1,3 ,10,2400, 'P0034', 'O00001');
INSERT INTO  Order_Dtls VALUES (2,4 ,15,2000, 'P0044', 'O00001');
INSERT INTO  Order_Dtls VALUES (3,1 ,20,4200, 'P0054', 'O00003');
INSERT INTO  Order_Dtls VALUES (4,5 ,15,2400, 'P0055', 'O00003');
INSERT INTO  Order_Dtls VALUES (5,6 ,30,2600, 'P0057', 'O00004');
INSERT INTO  Order_Dtls VALUES (6,7 ,23,2800, 'P0060', 'O00005');
INSERT INTO  Order_Dtls VALUES (7,8 ,25,2700, 'P0062', 'O00006');
INSERT INTO  Order_Dtls VALUES (8,3 ,30,1400, 'P0063', 'O00007');
```

```
INSERT INTO  Order_Dtls VALUES (9,4 ,35,1600, 'P0064', 'O00008');
INSERT INTO  Order_Dtls VALUES (10,3 ,40,2800, 'P0060', 'O00008');
INSERT INTO  Order_Dtls VALUES (11,1 ,35,4200, 'P0054', 'O00008');
INSERT INTO  Order_Dtls VALUES (12,2 ,15,1800, 'P0074', 'O00008');
INSERT INTO  Order_Dtls VALUES (13,3 ,5,1600, 'P0064', 'O00009');
INSERT INTO  Order_Dtls VALUES (14,4 ,15,2800, 'P0060', 'O00010');
INSERT INTO  Order_Dtls VALUES (15,1 ,7,1600, 'P0064', 'O00010');
INSERT INTO  Order_Dtls VALUES (16,2 ,20,2600, 'P0057', 'O00011');
INSERT INTO  Order_Dtls VALUES (17,1 ,10,2800, 'P0060', 'O00011');
INSERT INTO  Order_Dtls VALUES (18,4 ,10,2400, 'P0034', 'O00012');

Select * from Order_dtls;
```

OUTPUT :

ItemNo	Qty	Discount	PricePerItem	ProductId	OrderId
1	3	10.00	2400.00	P0034	O00001
2	4	15.00	2000.00	P0044	O00001
3	1	20.00	4200.00	P0054	O00003
4	5	15.00	2400.00	P0055	O00003
5	6	30.00	2600.00	P0057	O00004
6	7	23.00	2800.00	P0060	O00005
7	8	25.00	2700.00	P0062	O00006
8	3	30.00	1400.00	P0063	O00007
9	4	35.00	1600.00	P0064	O00008
10	3	40.00	2800.00	P0060	O00008
11	1	35.00	4200.00	P0054	O00008
12	2	15.00	1800.00	P0074	O00008
13	3	5.00	1600.00	P0064	O00009
14	4	15.00	2800.00	P0060	O00010

-*

1. Relational Algebra(Minimum 15 Queries)

1) Find the *model-number, product id,Remarks,Desc* and CP for CP of over 1200

$\Pi_{MODELNO,\ PRODUCTID,\ REMARKS,\ DESC,\ CP}\ (\sigma_{CP>1200}\ (PRODUCT\_INFO))$

2) Find the product id for each CP of an amount greater than 1200

$\Pi_{PRODUCTID}\ (\sigma_{CP>1200}\ (PRODUCT\_INFO))$

3) Find Product Id of all the products having remarks as excellent or good

$\Pi_{PRODUCTID}\ (\sigma\ (REMARKS=Good)\ OR\ (REMARKS=Excellent)\ (PRODUCT\_INFO))$

4) Find the clientid of all customers whose order has been fulfilled

$\Pi_{ClientId}\ (\sigma_{Status=Fulfilled}\ (ORDER\_INFO))$

5) Find the names of all individuals who have ordered T-shirt

$\Pi_{FNAME}\ (\sigma_{DESCRIPTION=T\text{-}Shirts}\ (ORDER\_INFO))$

6) Find the names of all firms located in Maharashtra

$\Pi_{FNAME,MNAME,LNAME}(\sigma_{STATE=MAHARASHTRA}(FIRM))$

7) List all orders that were ordered in month of January

$\Pi_{ORDERID}(\sigma_{(ORDERDATE>2021\text{-}12\text{-}31)\ AND\ (ORDERDATE<2022\text{-}02\text{-}01)}(ORDER\_INFO))$

8) Find the login id of client “C00001”

$\Pi_{LOGINID}(\sigma_{CLIENTID=C00001}(Client))$

9) Find the description of product that were offered discount more than 15 percent

$\Pi_{DESCRIPTION}(\sigma_{DISCOUNT>15}(Order\_dtls))$

10) List the firms who have used online payment method.

$\Pi_{FNAME,MNAME,LNAME}(\pi_{FIRM}(\pi_{ORDERID}(\sigma_{PAYMETHOD=ONLINE}(FULFILLED))$

11) List the product name and CP of those whose price per item is greater than 2500.

$\Pi_{DESCRIPTION,CP}$ ($\pi_{PRODUCTID}$ ($\sigma_{PRICEPERITEM > 2500}$ (ORDER_DTLS))

12) Show the ClientID of the order whose product is Jeans.

$\Pi_{ClientId}$ ($\Pi_{OrderID}$ ($\Pi_{ProductID}$ ($\sigma_{DESCRIPTION = JEANS}$ (PRODUCT_INFO))

13) Show the names of those customers whose name is Maharashtra.

$\Pi_{FNAME,MNAME,LNAME}$ ($\sigma_{STATE=MAHARASHTRA}$ (INDIVIDUAL))

14) Give the aadhaar no. of those clients whose order status is fulfilled.

$\Pi_{AddharNo}$ ($\Pi_{ClientID}$ ($\sigma_{Status=Fulfilled}$ (Order_Info))

15) Produce the EmailID of those Firms whose Reg. No belongs to Rajasthan.

$\Pi_{EMAILID}$ (Π_{REGNO} ($\Pi_{FNAME,MNAME, LNAME}$ ($\sigma_{STATE=RAJASTHAN}$ (FIRM))

***-**

2. SQL (Minimum 25 Queries using all the concepts)

Use ordermanagement;

a) Find the order id of order whose total quantity ordered is minimum and also display its total quantity.

```
SELECT ORDERID, SUM(QTY)
FROM Order_dtls
group by OrderId
having SUM(QTY) = (
        SELECT sum(QTY)
   FROM order_dtls
   Group by OrderId
   ORDER BY SUM(QTY) ASC LIMIT 1
);
```

OUTPUT :

ORDERID	SUM(QTY)
O00007	3
O00009	3
O00011	3

b) Display Order id of order and product id related to it on which maximum profit has been offered

```
SELECT ORDERID, PRODUCTID
FROM ORDER_DTLS
WHERE DISCOUNT = (SELECT MAX(DISCOUNT) FROM ORDER_DTLS);
```

OUTPUT :

	ORDERID	PRODUCTID
▶	O00008	P0060

c) Retrieve the minimum discount for each order

```
SELECT ORDERID, MIN(DISCOUNT)
FROM ORDER_DTLS
group by ORDERID;
```

OUTPUT :

	ORDERID	MIN(DISCOUNT)
▶	O00001	10.00
	O00003	15.00
	O00004	30.00
	O00005	23.00
	O00006	25.00
	O00007	30.00
	O00008	15.00
	O00009	5.00
	O00010	7.00
	O00011	10.00
	O00012	10.00

d) Display the total quantity ordered for each order id.

```
SELECT ORDERID, SUM(QTY) AS "TOTAL ORDERS"
FROM ORDER_DTLS
GROUP BY ORDERID;
```

OUTPUT :

	ORDERID	TOTAL ORDERS
▶	O00001	7
	O00003	6
	O00004	6
	O00005	7
	O00006	8
	O00007	3
	O00008	10
	O00009	3
	O00010	5
	O00011	3
	O00012	4

e) Find the order on which discount ordered is greater than 20% and display related product ordered.

```
SELECT ORDERID, PRODUCTID
FROM ORDER_DTLS
WHERE DISCOUNT > 20;
```

OUTPUT :

ORDERID	PRODUCTID
O00004	P0057
O00005	P0060
O00006	P0062
O00007	P0063
O00008	P0064
O00008	P0060
O00008	P0054

f) List the orders ordered in the month of February.

```
SELECT *
FROM ORDER_INFO
WHERE MONTH(ORDERDATE)=2;
```

OUTPUT :

OrderDate	Status	OrderId	ClientId
2022-02-01	Fulfilled	O00004	F00001
2022-02-03	Fulfilled	O00005	F00004
2022-02-22	In Progress	O00006	C00002
2022-02-14	In Progress	O00007	C00004
2022-02-16	In Progress	O00008	C00006
2022-02-23	In Progress	O00009	F00003
NULL	NULL	NULL	NULL

g) Display the number of days in between the delivery date and order date for each fulfilled order.

```
SELECT FULFILLED.ORDERID,DELAYDATE-ORDERDATE AS "NO OF DAYS"
FROM FULFILLED, ORDER_INFO
WHERE FULFILLED.ORDERID = ORDER_INFO.ORDERID;
```

OUTPUT :

ORDERID	NO OF DAYS
O00001	13
O00002	17
O00003	15
O00004	19
O00005	19

h) Display the number of orders whose expected delivery date is in between 01-Mar-22 and 15-Mar-22.

```
SELECT ORDERID
FROM INPROGRESS
WHERE EXP_DELYDATE BETWEEN '2022-03-01' AND '2022-03-15';
```

OUTPUT :

	ORDERID
▶	O00006
	O00007
	O00008
	O00009

i) Retrieve the order id, client id and name of the weekday for all the order_date.

```
SELECT CLIENTID, ORDERID, dayname(ORDERDATE)
FROM ORDER_INFO;
```

OUTPUT :

	CLIENTID	ORDERID	dayname(ORDERDATE)
▶	C00001	O00001	Monday
	C00003	O00002	Tuesday
	C00005	O00003	Friday
	F00001	O00004	Tuesday
	F00004	O00005	Thursday
	C00002	O00006	Tuesday
	C00004	O00007	Monday
	C00006	O00008	Wednesday
	F00003	O00009	Wednesday
	F00002	O00010	Thursday
	F00006	O00011	Monday
	F00007	O00012	Tuesday

j) Change the individual table by converting each value of the field Fname,Mname and Lname in uppercase

```
UPDATE individual
SET
        FNAME = ucase(FNAME),
   MNAME = ucase(MNAME),
   LNAME = UCASE(LNAME);
```

OUTPUT :

Bday	Fname	Mname	Lname	Srt_No	City	State	Pincode	ClientId	AddharNo
1996-03-23	CLARK	ROBERT	MILLER	Street-35	Chennai	Tamil Nadu	520053	C00007	12124
1996-03-03	ROBERT	MILLER	BROWN	Street-5	Pune	Maharashtra	400053	C00002	12324
1990-02-04	ANNIE	CROWN	MAYERS	Street-32	Bangalore	Karnataka	540053	C00003	12514
1999-01-01	IVAN	JOHN	BAYROSS	Lan-2	Mumbai	Maharashtra	400054	C00001	14253
1967-05-04	HARISH	SINGH	RAWAT	Street-21	Amritsar	Punjab	151002	C00004	21724
2000-03-22	ANMOL	SINGH	GILL	Street-244	Faridkot	Punjab	151920	C00005	36324
1987-10-17	MOHIT	RAJPUT	RATHORE	Street-14	Jodhpur	Rajasthan	345453	C00010	45724
1986-08-17	AMIT	MILLER	BROWN	Lan-124	Jaipur	Rajasthan	343353	C00009	56724
2001-04-13	HARDEEP	SINGH	MANN	Street-123	Bathinda	Punjab	151001	C00008	71434
1980-07-23	PUNEET	SINGH	KOHLI	Lan-12	Nagpur	Maharashtra	403033	C00006	78824
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

k) Display the length of the value in the description field from PRODUCT_INFO table.

```
SELECT DESCRIPTION, length(DESCRIPTION)
FROM product_info;
```

OUTPUT :

	DESCRIPTION	length(DESCRIPTION)
▶	T-Shirts	8
	T-Shirts	8
	Shirts	6
	Shirts	6
	Jeans	5
	Jeans	5
	Trousers	8
	Skirts	6
	Skirts	6
	Pull Overs	10

l) List all the items of PRODUCT_INFO table in decreasing order of CP.

```
SELECT *
FROM product_info
ORDER BY CP DESC;
```

OUTPUT :

	MODELNO	CP	DESCRIPTION	REMARKS	PRODUCTID
▶	S4324	2100.00	Shirts	Good	P0054
	J6624	1400.00	Jeans	Excellent	P0060
	TR5624	1350.00	Trousers	Good	P0062
	J5224	1300.00	Jeans	Good	P0057
	TS1224	1200.00	T-Shirts	Good	P0034
	S4624	1200.00	Shirts	Excellent	P0055
	TS3124	1000.00	T-Shirts	Average	P0044
	PO9877	900.00	Pull Overs	Good	P0074
	SK8494	800.00	Skirts	Average	P0064
	SK4524	700.00	Skirts	Good	P0063
*	NULL	NULL	NULL	NULL	NULL

m) Display the product ID, CP and description of product for which cost price is more than or equal to 1200 in descending order of the cost Price

```
SELECT PRODUCTID, DESCRIPTION, CP
FROM product_info
WHERE CP>=1200
ORDER BY CP DESC;
```

OUTPUT :

PRODUCTID	DESCRIPTION	CP
P0054	Shirts	2100.00
P0060	Jeans	1400.00
P0062	Trousers	1350.00
P0057	Jeans	1300.00
P0034	T-Shirts	1200.00
P0055	Shirts	1200.00
NULL	NULL	NULL

n) Count the client id in which product is ordered after 1-february-2022.

```
SELECT COUNT(CLIENTID)
FROM ORDER_INFO
WHERE ORDERDATE>'2022-02-01';
```

OUTPUT :

	COUNT(CLIENTID)
▶	8

o) Find the count of Order ID grouped by status.

```
SELECT COUNT(ORDERID),STATUS
FROM ORDER_INFO
group by STATUS;
```

OUTPUT :

	COUNT(ORDERID)	STATUS
▶	5	Fulfilled
	7	In Progress

p) Retrieve the Fname,City, Pincode of individual related to order id "O00001"

```
SELECT FName, City, Pincode
FROM individual
WHERE CLIENTID in (
```

```
        select CLIENTID
    from order_INFO
    where ORDERID = "O00001"
);
```

OUTPUT :

	FName	City	Pincode
▶	IVAN	Mumbai	400054

q) List the name of individual client who has ordered in January month

```
SELECT FName,MNAME,LNAME
FROM individual
WHERE ClientID in (
        select CLIENTID
        from order_info
    where month(ORDERDATE) = 1
);
```

OUTPUT :

	FName	MNAME	LNAME
▶	ANNIE	CROWN	MAYERS
	IVAN	JOHN	BAYROSS
	ANMOL	SINGH	GILL

r) List if the product ‘Jeans’ has been ordered by any client and print the Client_ID to whom it was sold

```
select CLIENTID
from ORDER_INFO
where ORDERID in (
        select ORDERID
        from order_dtls
        where PRODUCTID in (
                select PRODUCTID
                from PRODUCT_INFO
                where DESCRIPTION = "Jeans"
        )
);
```

OUTPUT :

CLIENTID
F00001
F00006
F00004
C00006
F00002

s) Retrieve the name of every customer whose city name starts with ‘J’.

```
SELECT FNAME,MNAME,LNAME, CITY
FROM FIRM
WHERE CITY LIKE "J%";
```

OUTPUT :

	FNAME	MNAME	LNAME	CITY
▶	Unified	Clothing	Company	Jodhpur

t) Find the client id of the client who have more than 1 orders.

```
SELECT PRODUCTID , DESCRIPTION
FROM PRODUCT_INFO
WHERE PRODUCTID IN (
        SELECT PRODUCTID
   FROM ORDER_DTLS
   GROUP BY PRODUCTID
   HAVING SUM(QTY)<5
);
```

OUTPUT :

	PRODUCTID	DESCRIPTION
▶	P0044	T-Shirts
	P0054	Shirts
	P0063	Skirts
	P0074	Pull Overs
*	NULL	NULL

u) Find the description and product id who's total qtl ordered is less than 5.

```
SELECT CLIENTID
FROM order_info
WHERE ORDERID IN(
        SELECT ORDERID
        FROM order_dtls
        GROUP BY OrderId
        HAVING COUNT(ItemNo)>1
);
```

OUTPUT :

CLIENTID
C00001
C00005
C00006
F00002
F00006

v) Find the description, cost price of the products whose price per item is less than 2500 by temporary changing the name of the tables.

```
SELECT DESCRIPTION AS INFO, CP
```

```
FROM PRODUCT_INFO
WHERE PRODUCTID IN (
        SELECT PRODUCTID
    FROM ORDER_DTLS
    WHERE PRICEPERITEM < 2500
);
```

OUTPUT :

	INFO	CP
▶	T-Shirts	1200.00
	T-Shirts	1000.00
	Shirts	1200.00
	Skirts	700.00
	Skirts	800.00
	Pull Overs	900.00

w) Find the Client ID,status of the orders of those clients who belongs to Maharashtra.

```
SELECT CLIENTID, STATUS
FROM ORDER_INFO
WHERE CLIENTID IN(
        SELECT CLIENTID
    FROM firm
    WHERE STATE = "Maharashtra"
);
```

OUTPUT :

	CLIENTID	STATUS
▶	F00001	Fulfilled

x) Find the total number of orders placed by individual from Karnataka state.

```
SELECT COUNT(ORDERID)
FROM order_info
WHERE CLIENTID IN(
        SELECT CLIENTID
        FROM individual
        WHERE STATE = "Karnataka"
);
```

OUTPUT :

	COUNT(ORDERID)
▶	1

y) Find the total number of orders placed by firm from Maharashtra state.

```
SELECT COUNT(ORDERID)
FROM order_info
WHERE CLIENTID IN(
        SELECT CLIENTID
        FROM FIRM
        WHERE STATE = "MAHARASHTRA");
```

OUTPUT :

	COUNT(ORDERID)
▶	1

_*_

3. Tuple Calculus(10)

1) Find the *model-number, product id,Remarks,Desc* and CP for CP of over 1200

$\{t \mid t \in Product\_Info \wedge t[CP] > 1200\}$

2) Find the product id for each CP of an amount greater than 1200

$\{t \mid \exists s \in \text{Product\_Info}\ (t[ProductID] = s[ProductID] \wedge s[CP] > 1200\}$

3) Find Product Id of all the products having remarks as excellent or good

$\{t \mid \exists s \in Product\_Info(t[productid] = s[productid] \wedge (s[\text{remarks}] = \text{“Excellent”} \vee s[\text{remarks}] = \text{“Good”}))$

4) Find the clientid of all customers whose order has been fulfilled

$\{t \mid \exists s \in Order\_Info(t[clientid] = s[clientid] \wedge s[\text{status}] = \text{“Fulfilled”})$

5) Find the names of all individuals who have ordered T-shirt

$\{t \mid \exists s \in Product\_Info(s[desc] = \text{“T-Shirts”} \wedge \exists u \in Order\_Dtls(u[ProductID] = s[\text{ProductID}] \wedge \exists p \in \text{Order\_Info}(u[OrderID] = p[\text{ClientID}] \wedge \exists i \in \text{individual}(i[ClientID] = p[\text{ClientID}] \wedge t[fname]=i[fname])))))\}$

6) Find the names of all firms located in Maharashtra

{t | ∃s ∈ firm(t[fname] = s[fname] ∧ s[state] = “Maharashtra”) }

7) List all orders that were ordered in month of January

{t | ∃s ∈ Order_Info(t[OrderID] = s[OrderID] ∧ (s[OrderDate] <“2022-02-01” ∨ s[OrderDate] >“2021-12-31”)) }

8) Find the login id of client “C00001”

{t | ∃s ∈ Client(t[login_id] = s[login_id] ∧ s[clientID] = “C00001”) }

9) Find the description of product that were offered discount more than 15 percent

{t | ∃s ∈ Product_Info(s[Desc] =t[Desc] ∧ ∃u ∈ Order_Dtls(u[ProductID] = s[ProductID] ∧ u[Discount]>15))}

10) List the firms who have used online payment method

{t | ∃s ∈ firm(t[Reg No] = s[Reg No] ∧ ∃u ∈Order_Info (u[ClientID]=s[ClientID] ∧ ∃ p∈ Fulfilled(p[OrderID]=u[OrderID] ∧ p[Pay_Method]=“Online”))) }

-*-

4. Domain Calculus(10)

1) Find the *model-number, product id,Remarks,Desc* and CP for CP of over 1200

$\{< m,c,r,d,p > | < m,c,r,d,p > \in Product\_Info \wedge c > 1200\}$

2) Find the product id for each CP of an amount greater than 1200

$\{< p > | \exists\ m,c,r,d\ (< m,c,r,d,p > \in Product\_Info \wedge c > 1200)\}$

3) Find Product Id of all the products having remarks as excellent or good

$\{< p > | \exists\ m,c,r,d\ (< m,c,r,d,p > \in Product\_Info \wedge (r = \text{“Good”} \vee r = \text{“ Excellent”}))\}$

4) Find the clientid of all customers whose order has been fulfilled

{*t* | ∃*s* ∈ *Order_Info*(*t*[*clientid*] = *s*[*clientid*] ∧ s[status]= "Fulfilled")

{< *c* > | ∃ *od,s,o,* (< *od,s,o,c* > ∈ *Order_Info* ∧ s="Fulfilled")}

5) Find the names of all individuals who have ordered T-shirt

{< *f* > | ∃ *p* (< *m,cp,r,"T-Shirts",p* > ∈ *Product_Info* ∧ ∃*o* (< *i,q,d,pp,p,o* > ∈ Order_Dtls ∧ ∃*c* (< *o,s,oi,c* > ∈ Order_Info ∧ ∃*f* (< *f,m,l,s,ct,st,pi,c,a* > ∈ Individual))))}

6) Find the names of all firms located in Maharashtra

{< *f* > | ∃ *m,l,s,ci,st,p,r,c* (<f,*m,l,s,ci,* "Maharashtra",*p,r,c* > ∈ *firm*)}

7) List all orders that were ordered in month of January

{< *o* > | ∃ *od,s,c*(<od,*s,o,c* > ∈ *Order_Info*∧ (od <“2022-02-01” ∧ od>“2021-12-31”)))}

8) Find the login id of client “C00001”

{< *l* > | ∃ *c*(<l,*”C00001”* > ∈ *Client*)}

9) Find the description of product that were offered discount more than 15 percent

{< *d* > | ∃ *p*(<*m,c,r,d,p* > ∈ *Product_Info* ∧ ∃*di* ∈ (<*l,q,di,pp,p,o* >∈ *Order_Dtls* ∧ di > 15))}

10) List the firms who have used online payment method

{< *r* > | ∃ *c*(<*f,m,l,s,ci,st,pi,r,c* > ∈ *firm* ∧ ∃*o* ∈ (<*od,ss,o,c* >∈ *Order_Info* ∧ ∃*pm* ∈ (<”Online”,*dd,o* >∈ *Fulfilled*)))}

THANK YOU
