Consider our OTT Management System Case Study for SQL

1. **CREATE AT LEAST FOUR TABLES WITH CONSTRAINTS (PRIMARY KEY, FOREIGN KEY, NOT NULL)**
2. **INSERT AT LEAST 5 TUPLES IN EACH TABLE**

```
CREATE TABLE Subscription
(
Subscription_ID varchar(50) NOT NULL PRIMARY KEY,
Subscription_Type varchar(20),
Amount int);
```

```
INSERT INTO Subscription(Subscription_ID,Subscription_Type,Amount)
VALUES('1A','Basic',199);
INSERT INTO Subscription(Subscription_ID,Subscription_Type,Amount) VALUES
('4K','Premium',599);
INSERT INTO Subscription(Subscription_ID,Subscription_Type,Amount) VALUES
('13B','VIP',399);
INSERT INTO Subscription(Subscription_ID,Subscription_Type,Amount) VALUES
('7G','Basic',199);
INSERT INTO Subscription(Subscription_ID,Subscription_Type,Amount) VALUES
('5B','VIP',399);
```

SUBSCRIPTION_ID	SUBSCRIPTION_TYPE	AMOUNT
1A	Basic	199
4K	Premium	599
13B	VIP	399
7G	Basic	199
5B	VIP	399

```
CREATE TABLE OTTUser
(
User_ID varchar(50) NOT NULL PRIMARY KEY,
User_Name varchar(50),
Age int,
Phone int,
City varchar(50),
State varchar(50),
Street varchar(50),
Subscription_ID varchar(50) REFERENCES Subscription(Subscription_ID),
Subscription_Start_Date date,
Subscription_End_Date date);
```

```
INSERT INTO OTTUser (User_ID,User_Name,Age,Phone,City,State,Street,Subscription_ID,
Subscription_Start_Date, Subscription_End_Date) VALUES
('AA','Dhoni',39,9782304281,'Ranchi','Jharkhand','Gandhi','1A',DATE'2021-01-01',DATE'2021-02-01');
INSERT INTO OTTUser (User_ID,User_Name,Age,Phone,City,State,Street,Subscription_ID,
Subscription_Start_Date, Subscription_End_Date) VALUES
```

('JJ','Nattu',32,8957281281,'Salem','Tamilnadu','Meenakshi','4K',DATE'2020-04-11',DATE'2021-04-11');
INSERT INTO OTTUser (User_ID,User_Name,Age,Phone,City,State,Street,Subscription_ID, Subscription_Start_Date, Subscription_End_Date) VALUES
('PP','Vikram',54,7823629134,'Chennai','Tamilnadu','Cheran','13B',DATE'2019-09-21',DATE'2019-12-21');
INSERT INTO OTTUser (User_ID,User_Name,Age,Phone,City,State,Street,Subscription_ID, Subscription_Start_Date, Subscription_End_Date) VALUES
('QQ','Naruto',20,9241382391,'Leaf Village','Konoho','Tokushima','7G',DATE'2020-05-23',DATE'2020-06-23');
INSERT INTO OTTUser (User_ID,User_Name,Age,Phone,City,State,Street,Subscription_ID, Subscription_Start_Date, Subscription_End_Date) VALUES
('TT','Sasuke',21,9817929351,'Leaf Village','Konoho','Tokushima','5B',DATE'2020-11-17',DATE'2021-02-17');

USER_ID	USER_NAME	AGE	PHONE	CITY	STATE	STREET	SUBSCRIPTION_ID	SUBSCRIPTION_START_DATE	SUBSCRIPTION_END_DATE
AA	Dhoni	39	9782304281	Ranchi	Jharkhand	Gandhi	1A	01-JAN-21	01-FEB-21
JJ	Nattu	32	8957281281	Salem	Tamilnadu	Meenakshi	4K	11-APR-20	11-APR-21
PP	Vikram	54	7823629134	Chennai	Tamilnadu	Cheran	13B	21-SEP-19	21-DEC-19
QQ	Naruto	20	9241382391	Leaf Village	Konoho	Tokushima	7G	23-MAY-20	23-JUN-20
TT	Sasuke	21	9817929351	Leaf Village	Konoho	Tokushima	5B	17-NOV-20	17-FEB-21

CREATE TABLE Payment_Type
(
Payment_ID varchar(50) PRIMARY KEY,
Payment_Date date,
Amount_Due int,
User_ID varchar(50) REFERENCES OTTUser(User_ID),
P_Type char(20),
Credit_Card_No int,
Debit_Card_No int,
Net_Banking_ID int,
UPI_ID varchar(20));

INSERT INTO Payment_Type
(Payment_ID,Payment_Date,Amount_Due,User_ID,P_Type,Credit_Card_No) VALUES
('111',DATE'2021-01-01',250,'AA','Credit',1234567890123456);
INSERT INTO Payment_Type
(Payment_ID,Payment_Date,Amount_Due,User_ID,P_Type,Credit_Card_No) VALUES
('999',DATE'2020-04-11',650,'JJ','Credit',4709839201849391);
INSERT INTO Payment_Type
(Payment_ID,Payment_Date,Amount_Due,User_ID,P_Type,Debit_Card_No) VALUES
('222',DATE'2019-09-21',450,'PP','Debit',14792301837223456);
INSERT INTO Payment_Type
(Payment_ID,Payment_Date,Amount_Due,User_ID,P_Type,Debit_Card_No) VALUES
('333',DATE'2020-05-23',250,'QQ','Debit',470480198371849);

INSERT INTO Payment_Type
(Payment_ID,Payment_Date,Amount_Due,User_ID,P_Type,Credit_Card_No) VALUES
('444',DATE'2020-11-17',450,'TT','Credit',35697284040138301);

PAYMENT_ID	PAYMENT_DATE	AMOUNT_DUE	USER_ID	P_TYPE	CREDIT_CARD_NO	DEBIT_CARD_NO	NET_BANKING_ID	UPI_ID
111	01-JAN-21	250	AA	Credit	1234567890123456	–	–	–
999	11-APR-20	650	JJ	Credit	4709839201849391	–	–	–
222	21-SEP-19	450	PP	Debit	–	14792301837223456	–	–
333	23-MAY-20	250	QQ	Debit	–	470480198371849	–	–
444	17-NOV-20	450	TT	Credit	35697284040138301	–	–	–

CREATE TABLE Has_Subscription
(
Subscription_ID varchar(50) REFERENCES Subscription(Subscription_ID));

INSERT INTO Has_Subscription (Subscription_ID,Payment_ID) VALUES ('1A','111');
INSERT INTO Has_Subscription (Subscription_ID,Payment_ID) VALUES ('4K','999');
INSERT INTO Has_Subscription (Subscription_ID,Payment_ID) VALUES ('13B','222');
INSERT INTO Has_Subscription (Subscription_ID,Payment_ID) VALUES ('7G','333');
INSERT INTO Has_Subscription (Subscription_ID,Payment_ID) VALUES ('5B','444');

SUBSCRIPTION_ID	PAYMENT_ID
1A	111
4K	999
13B	222
7G	333
5B	444

3. PRACTICE ALTER AND DROP COMMANDS.

ALTER TABLE Has_Subscription ADD
(
Payment_ID varchar(50) REFERENCES Payment_Type(Payment_ID));

DROP TABLE Has_Subscription;

```
Table created.

Table altered.

Table dropped.
```

4. PERFORM THE FOLLOWING DML QUERIES.

1. SIMPLE SELECT QUERY.

SELECT * FROM OTTUser;

USER_ID	USER_NAME	AGE	PHONE	CITY	STATE	STREET	SUBSCRIPTION_ID	SUBSCRIPTION_START_DATE	SUBSCRIPTION_END_DATE
AA	Dhoni	39	9782304281	Ranchi	Jharkhand	Gandhi	1A	01—JAN—21	01—FEB—21
JJ	Nattu	32	8957281281	Salem	Tamilnadu	Meenakshi	4K	11—APR—20	11—APR—21
PP	Vikram	54	7823629134	Chennai	Tamilnadu	Cheran	13B	21—SEP—19	21—DEC—19
QQ	Naruto	20	9241382391	Leaf Village	Konoho	Tokushima	7G	23—MAY—20	23—JUN—20
TT	Sasuke	21	9817929351	Leaf Village	Konoho	Tokushima	5B	17—NOV—20	17—FEB—21

2. **SELECT QUERY WITH PATTERN MATCHING(LIKE OPERATOR).**
   SELECT User_Name, State
   FROM OTTUser
   WHERE State LIKE 'K%';

USER_NAME	STATE
Naruto	Konoho
Sasuke	Konoho

3. **EXPRESSIONS IN SELECT QUERY.**
   SELECT Subscription_ID, Subscription_Type , Amount , Amount*0.12 Tax
   FROM Subscription;

SUBSCRIPTION_ID	SUBSCRIPTION_TYPE	AMOUNT	TAX
1A	Basic	199	23.88
4K	Premium	599	71.88
13B	VIP	399	47.88
7G	Basic	199	23.88
5B	VIP	399	47.88

4. **AGGREGATE FUNCTIONS IN SELECT QUERY.**

   SELECT COUNT(State) No_of_users,State
   FROM OTTUser
   GROUP BY State;

NO_OF_USERS	STATE
2	Konoho
2	Tamilnadu
1	Jharkhand

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3 rows selected.

5. **SELECT QUERY WITH GROUP BY AND HAVING CLAUSE.**

   SELECT COUNT(User_ID) No_of_users,State
   FROM OTTUser
   GROUP BY State

HAVING COUNT(State) > 1;

NO_OF_USERS	STATE
2	Konoho
2	Tamilnadu

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2 rows selected.

6. **SELECT QUERY FOR SORTING THE DATA.**
   SELECT User_Name , State
   FROM OTTUser
   ORDER BY State desc;

USER_NAME	STATE
Vikram	Tamilnadu
Nattu	Tamilnadu
Sasuke	Konoho
Naruto	Konoho
Dhoni	Jharkhand

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5 rows selected.

7. **RETRIEVAL USING A SUBQUERY IN AND EXISTS OPERATOR**
   SELECT * FROM Subscription
   WHERE Subscription_Type IN ('Basic','VIP');

SUBSCRIPTION_ID	SUBSCRIPTION_TYPE	AMOUNT
1A	Basic	199
13B	VIP	399
7G	Basic	199
5B	VIP	399

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4 rows selected.

   SELECT User_Name
   FROM OTTUser
   WHERE EXISTS (SELECT Payment_ID
   FROM Payment_Type t3
   WHERE t3.User_ID = OTTUser.User_ID AND t3.Amount_Due > 600);

USER_NAME
Nattu

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8. CORRELATED SUBQUERIES

SELECT User_Name, Payment_Date , Subscription_Type
FROM OTTUser , Payment_Type , Subscription
WHERE OTTUser.User_ID = Payment_Type.User_ID AND OTTUser.Subscription_ID = Subscription.Subscription_ID AND Amount_Due > (SELECT avg(Amount_Due) FROM Payment_Type);

USER_NAME	PAYMENT_DATE	SUBSCRIPTION_TYPE
Nattu	11-APR-20	Premium
Vikram	21-SEP-19	VIP
Sasuke	17-NOV-20	VIP

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3 rows selected.

9. JOINS (MINIMUM 3 TABLES)

SELECT *
FROM Subscription t1, OTTUser t2 , Payment_Type t3
WHERE t1.Subscription_ID = t2.Subscription_ID AND t2.User_ID = t3.User_ID;

SUBSCRIPTION_ID	SUBSCRIPTION_TYPE	AMOUNT	USER_ID	USER_NAME	AGE	PHONE	CITY	STATE	STREET	SUBSCRIPTION_ID	SUBSCRIPTION_START_DATE	SUBSCRIPTION_END_DATE	PAYMENT_ID	PAYMENT_DATE	AMOUNT_DUE	USER_ID	P_TYPE	CREDIT_CARD_NO	DEBIT_CARD_NO
1A	Basic	199	AA	Dhoni	39	9782304281	Ranchi	Jharkhand	Gandhi	1A	01-JAN-21	01-FEB-21	111	01-JAN-21	250	AA	Credit	1234567890123456	–
4K	Premium	599	JJ	Nattu	32	8957281281	Salem	Tamilnadu	Meenakshi	4K	11-APR-20	11-APR-21	999	11-APR-20	650	JJ	Credit	4709839201849391	–
13B	VIP	399	PP	Vikram	54	7823629134	Chennai	Tamilnadu	Cheran	13B	21-SEP-19	21-DEC-19	222	21-SEP-19	450	PP	Debit	–	14792301837223456
7G	Basic	199	QQ	Naruto	20	9241382391	Leaf Village	Konoho	Tokushima	7G	23-MAY-20	23-JUN-20	333	23-MAY-20	250	QQ	Debit	–	470480198371849
5B	VIP	399	TT	Sasuke	21	9817929351	Leaf Village	Konoho	Tokushima	5B	17-NOV-20	17-FEB-21	444	17-NOV-20	450	TT	Credit	35697284040138301	–

Download CSV
5 rows selected.

10. SET OPERATIONS

SELECT *
FROM Payment_Type
MINUS
SELECT *
FROM Payment_Type
WHERE Amount_Due >300;

PAYMENT_ID	PAYMENT_DATE	AMOUNT_DUE	USER_ID	P_TYPE	CREDIT_CARD_NO	DEBIT_CARD_NO	NET_BANKING_ID	UPI_ID
111	01-JAN-21	250	AA	Credit	1234567890123456	–	–	–
333	23-MAY-20	250	QQ	Debit	–	470480198371849	–	–

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2 rows selected.

SELECT t1.Subscription_ID, t1.Subscription_Type
FROM Subscription t1 , OTTUser
WHERE OTTUser.Subscription_ID = t1.Subscription_ID AND OTTUser.Age > 20
INTERSECT
SELECT t1.Subscription_ID,t1.Subscription_Type
FROM Subscription t1
WHERE Amount < 400;

SUBSCRIPTION_ID	SUBSCRIPTION_TYPE
13B	VIP
1A	Basic
5B	VIP

Download CSV
3 rows selected.

```
SELECT T1.SUBSCRIPTION_ID , USER_NAME
FROM SUBSCRIPTION T1 , OTTUSER T2
WHERE T2.SUBSCRIPTION_ID = T1.SUBSCRIPTION_ID AND SUBSCRIPTION_TYPE =
'BASIC'
UNION
SELECT  SUBSCRIPTION_ID , USER_NAME
FROM PAYMENT_TYPE T3 , OTTUSER T2
WHERE  T3.USER_ID = T2.USER_ID AND P_TYPE = 'CREDIT';
```

SUBSCRIPTION_ID	USER_NAME
1A	Dhoni
4K	Nattu
5B	Sasuke
7G	Naruto

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