

## Classe : 3IIR

### Travail à faire :

Effectuer le TP1 de SQL sous la supervision de :

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```
SQL> connect
Enter user-name: c##tp/majid
Connected.
SQL> select user from dual;

USER
-----
C##TP

SQL> |
```

Nous sommes sur le point d'ouvrir un nouveau compte sur SQL Plus. Ensuite, nous pourrons commencer le compte rendu. Bien entendu, nous prévoyons d'ajouter une capture d'écran des résultats des requêtes SQL pour chaque question.

## I) Création des tables

- 1) Créer les différentes tables de ce schéma relationnel (n'oubliez pas les contraintes d'intégrité clé primaire et clé étrangère).

```
1  create table doc(  
2  numDoc integer,  
3  nomDoc varchar(20),  
4  villeDoc varchar(20),  
5  constraint pk_doc primary key(numDoc)  
6  )  
7  
8  
9  create table pat(  
10 numPat number(3),  
11 nomPat varchar(20),  
12 villePat varchar(20),  
13 agePat number(3),  
14 constraint pk_pat primary key(numPat)  
15 )  
16  
17 create table rdv(  
18 numRdv number(4),  
19 dateRdv date ,  
20 numDoc number(4),  
21 numPat number(4),  
22 motif varchar(20),  
23 constraint pk_rdv primary key(numRdv),  
24 constraint fk_rdv_doc foreign key(numDoc) references doc(numDoc),  
25 constraint fk_pat_numPat foreign key(numPat) references pat(numPat)  
26 );  
27  
28 create table med(  
29 numMed number(4),  
30 nomMed varchar(20),  
31 prix decimal(8,2),  
32 constraint pk_med primary key(numMed),  
33 constraint check_med_prix check(prix>=0)  
34 );  
35  
36 Create Table ORD  
37 (  
38 NumOrd Number(4),  
39 DateOrd Date,  
40 NumDoc Number(4),  
41 NumPat Number(4),  
42 Constraint PK_ORD Primary Key (NumORD),  
43 Constraint Ref_Ord_Doc Foreign Key(NumDoc) References DOC(NumDoc),  
44 Constraint Ref_Ord_PAT Foreign Key(NumPat) References PAT(NumPat)  
45 );  
46  
47 create table det(  
48 numOrd number(4),  
49 numLig number(4),  
50 numMed number(4),  
51 qte number(4),  
52 constraint pk_det primary key(numOrd,numLig),  
53 constraint fk_det_ord foreign key(numOrd) references ord(numOrd),  
54 constraint fk_det_med foreign key(numMed) references med(numMed)  
55 );  
56  
57 Create Table DOC(  
58 NumDOC integer Constraint PK_DOC PRIMARY KEY,  
59 NomDOC VARCHAR2(20),  
60 VilleDOC VARCHAR2(20)  
61 );  
62
```

**Result :**

```
SQL> select table_name from user_tables;
```

```
TABLE_NAME
```

```
-----  
ORD  
DET  
DOC  
PAT  
RDV  
MED
```

```
6 rows selected.
```

2) Ajouter les contraintes d'intégrité suivantes :

a) Pour la table DOC, la ville d'un docteur ne peut être que 'Rabat', 'Casablanca' ou 'Marrakech'.

```
1 ALTER TABLE doc  
2 ADD CONSTRAINT villeChoice CHECK (villeDoc IN ('Rabat', 'Casablanca', 'Marrakech'));  
3
```

```
SQL> ALTER TABLE doc  
2 ADD CONSTRAINT villeChoice CHECK (villeDoc IN ('Rabat', 'Casablanca', 'Marrakech'));  
  
Table altered.  
  
SQL> SELECT CONSTRAINT_NAME, CONSTRAINT_TYPE, TABLE_NAME  
2 FROM USER_CONSTRAINTS;  
  
CONSTRAINT_NAME      C TABLE_NAME  
-----  
FK_DET_ORD            R DET  
FK_RDV_DOC            R RDV  
REF_ORD_DOC           R ORD  
FK_PAT_NUMPAT         R RDV  
REF_ORD_PAT           R ORD  
FK_DET_MED            R DET  
PK_PAT                P PAT  
PK_RDV                P RDV  
PK_DOC                P DOC  
CHECK_MED_PRIX        C MED  
PK_MED                P MED  
  
CONSTRAINT_NAME      C TABLE_NAME  
-----  
PK_ORD                P ORD  
PK_DET                P DET  
VILLECHOICE          C DOC  
  
14 rows selected.  
  
SQL> |
```

b) Pour la table MED, le prix doit être positif.



```
1 alter table med
2 add constraint med_prixMoreThan0 check(prix>0);
```

```
SQL> alter table med
      2 add constraint med_prixMoreThan0 check(prix>0);

Table altered.

SQL> SELECT CONSTRAINT_NAME, CONSTRAINT_TYPE, TABLE_NAME from user_constraints where constraint_name='MED_PRIXMORETHAN0';

CONSTRAINT_NAME      C TABLE_NAME
-----
MED_PRIXMORETHAN0    C MED
```

3) Remplir les différentes tables (essayer de violer les contraintes d'intégrité). Puis faire COMMIT pour valider la transaction

```
1 Insert into PAT Values(1,'Touzani','Rabat',35);      Insert into PAT Values(2,'Farhati','Casablanca',50);
2 Insert into PAT Values(3,'Naciri','Rabat',19);      Insert into PAT Values(4,'Andaloussi','Marrakech',10);
3 Insert into PAT Values(5,'Tounsi','Casablanca',20); Insert into PAT Values(6,'Mourabiti','Salé',70);
4 Insert into PAT Values(7,'Essaaidi','Marrakech',41); Insert into PAT Values(8,'Ansari','Rabat',37);
5 Insert into PAT Values(9,'Houari','Rabat',36);      Insert into PAT Values(10,'Touzani','Casablanca',52);
6
7 Insert into DOC Values(1,'Alaoui','Rabat');        Insert into DOC Values(2,'Filali','Marrakech');Insert into DOC Values(3,'Rachidi','Casablanca');
8 Insert into DOC Values(4,'Berrada','Rabat');      Insert into DOC Values(5,'Bennani','Casablanca');
9
10 Insert into MED Values(1,'ACUPRIL 5 MG',37.5);    Insert into MED Values(2,'ACDigest, Gelule',50);
11 Insert into MED Values(3,'ACERUMEN',58);         Insert into MED Values(4,'ACFOL 5 MG',26.20);
12 Insert into MED Values(5,'ACIDAC 150 MG',90);    Insert into MED Values(6,'ACIDAC 300 MG',90);
13 Insert into MED Values(7,'ACIGAM 100 MG',28.90); Insert into MED Values(8,'ACLAV 1 G',99);
14 Insert into MED Values(9,'ACOL 1000 MG',18.30);  Insert into MED Values(10,'ACTACEPT 10 MG',400);
15 Insert into MED Values(11,'ACTALEVURE, Gelule',39); Insert into MED Values(12,'ACTICARBINE 70 MG',46.90);
16
17 Insert into RDV Values(1,'12/10/2019',1,1,'Consultation'); Insert into RDV Values(2,'13/10/2019',1,2,'Consultation');
18 Insert into RDV Values(3,'05/11/2020',1,1,'Controle'); Insert into RDV Values(4,'12/01/2021',1,10,'Consultation');
19 Insert into RDV Values(5,'15/02/2021',2,2,'Controle'); Insert into RDV Values(6,'18/03/2021',5,10,'Consultation');
20 Insert into RDV Values(7,'28/05/2021',1,1,NULL);    Insert into RDV Values(8,'29/07/2021',2,2,'Consultation');
21 Insert into RDV Values(9,'15/08/2021',1,1,'Consultation'); Insert into RDV Values(10,'15/08/2021',4,2,'Controle');
22 Insert into RDV Values(11,'16/08/2021',1,7,'Controle'); Insert into RDV Values(12,'18/09/2021',1,1,NULL); delete
23 Insert into RDV Values(13,'16/10/2021',5,7,'Consultation'); Insert into RDV Values(14,'18/10/2021',5,2,'Consultation');
24 Insert into RDV Values(15,'25/12/2021',3,2,'Controle'); Insert into RDV Values(16,'12/01/2022',5,3,'Consultation');
25 Insert into RDV Values(17,'30/03/2022',2,9,'Controle'); Insert into RDV Values(18,'12/10/2022',1,1,'Consultation');
26 Insert into RDV Values(19,'12/10/2022',1,3,'Controle'); Insert into RDV Values(20,'13/10/2022',1,4,'Controle');
27 Insert into RDV Values(21,'13/10/2022',1,5,'Controle'); Insert into RDV Values(22,'15/10/2022',1,6,'Controle');
28 Insert into RDV Values(23,'15/10/2022',1,8,'Controle'); Insert into RDV Values(24,'16/10/2022',1,9,'Controle');
29 Insert into RDV Values(25,'15/10/2022',1,10,'Controle');
30
31 Insert into ORD Values(1,'12/10/2019',1,1); Insert into ORD Values(2,'13/10/2019',1,2);
32 Insert into ORD Values(3,'12/01/2021',1,10); Insert into ORD Values(4,'18/03/2021',5,10);
33 Insert into ORD Values(5,'29/07/2021',3,2); Insert into ORD Values(6,'15/08/2021',1,1);
34 Insert into ORD Values(7,'16/10/2021',5,7); Insert into ORD Values(8,'18/10/2021',5,2); delete
35 Insert into ORD Values(9,'12/01/2022',5,3); Insert into ORD Values(10,'12/10/2022',1,1);
36
37 Insert into DET Values(1,1,1,2); Insert into DET Values(2,1,1,3);
38 Insert into DET Values(3,2,4,2); Insert into DET Values(4,2,3,4);
39 Insert into DET Values(5,3,1,1); Insert into DET Values(6,2,5,1);
40 Insert into DET Values(7,3,7,2); Insert into DET Values(8,4,9,1);
41 Insert into DET Values(9,4,1,1); Insert into DET Values(10,4,2,10,2);
42 Insert into DET Values(11,4,3,12,1); Insert into DET Values(12,5,1,6,2);
43 Insert into DET Values(13,5,2,8,1); Insert into DET Values(14,5,3,10,3);
44 Insert into DET Values(15,5,4,11,1); Insert into DET Values(16,6,1,3,1);
45 Insert into DET Values(17,6,2,7,4); Insert into DET Values(18,6,3,9,1);
46 Insert into DET Values(19,7,1,1,5); Insert into DET Values(20,7,2,3,6);
47 Insert into DET Values(21,8,1,1,1); Insert into DET Values(22,9,1,1,1);
48 Insert into DET Values(23,9,2,7,3); Insert into DET Values(24,10,1,1,5);
49 Insert into DET Values(25,10,2,10,3); Insert into DET Values(26,10,3,11,5);
50 Insert into DET Values(27,10,4,1,4);
51
52 Commit;
53
```

```
SQL> Commit;
```

```
Commit complete.
```

- 4) Créer la vue V\_PAT\_RABAT qui permet de consulter les patients de Rabat. Peut-on insérer des patients à partir de cette vue ?

```
1 create view V_PAT_RABAT
2 as select * from pat where villePat='Rabat';
3
```

```
SQL> create view V_PAT_RABAT as select * from pat where villePat='Rabat';
```

```
View created.
```

```
SQL> SELECT object_name, object_type FROM user_objects;
```

OBJECT_NAME	OBJECT_TYPE
PK_MED	INDEX
ORD	TABLE
PK_ORD	INDEX
DET	TABLE
PK_DET	INDEX
V_PAT_RABAT	VIEW
SALMORETHAN100	VIEW
DOC	TABLE
PK_DOC	INDEX
PAT	TABLE
PK_PAT	INDEX

OBJECT_NAME	OBJECT_TYPE
RDV	TABLE
PK_RDV	INDEX
MED	TABLE

```
14 rows selected.
```



```
1  -- Peut-on insérer des tuples à partir de cette vue ? oui
2  insert into V_PAT_RABAT valeurs (11,'ayoub','Rabat',19);
```

```
SQL> select * from v_pat_rabat;
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
1	Touzani	Rabat	35
3	Naciri	Rabat	19
8	Ansari	Rabat	37
9	Houari	Rabat	36

```
SQL> INSERT INTO v_pat_rabat VALUES (11, 'ayoub', 'Rabat', 19);
```

```
1 row created.
```

```
SQL> select * from v_pat_rabat;
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
1	Touzani	Rabat	35
3	Naciri	Rabat	19
8	Ansari	Rabat	37
9	Houari	Rabat	36
11	ayoub	Rabat	19

```
SQL> |
```

- 5) Créer la vue V\_ORD\_Total qui permet de consulter les numéros d'ordonnances avec leur montant total. Peut-on insérer des tuples à partir de cette vue ?



```
1  create view V_ORD_Total as
2  select numOrd ,sum(qte*prix) as "Total" from det d ,med m
3  where d.numMed=m.numMed
4  group by numOrd ;
```

```
SQL> create view V_ORD_Total as
2 select numOrd ,sum(qte*prix) as "Total" from det d ,med m
3 where d.numMed=m.numMed
4 group by numOrd ;
```

View created.

```
SQL> SELECT object_name, object_type FROM user_objects;
```

OBJECT_NAME	OBJECT_TYPE
PK_MED	INDEX
ORD	TABLE
PK_ORD	INDEX
DET	TABLE
PK_DET	INDEX
V_PAT_RABAT	VIEW
V_ORD_TOTAL	VIEW
SALMORETHAN100	VIEW
DOC	TABLE
PK_DOC	INDEX
PAT	TABLE

OBJECT_NAME	OBJECT_TYPE
PK_PAT	INDEX
RDV	TABLE
PK_RDV	INDEX
MED	TABLE

15 rows selected.

## II) Mise à jour de la base de données :

- 1) Changer la ville du patient 'Naciri' de 'Rabat' à 'Casablanca'.

```
1 UPDATE pat
2 SET villePat = 'Casablanca'
3 WHERE nomPat = 'Naciri' AND villePat = 'Rabat';
```

```
SQL> UPDATE pat
2 SET villePat = 'Casablanca'
3 WHERE nomPat = 'Naciri' AND villePat = 'Rabat';
```

1 row updated.

```
SQL> select * from pat where nomPat='Naciri';
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
3	Naciri	Casablanca	19

SQL> |

2) Augmenter de 20% le prix des médicaments dont le prix est inférieur à 60 DH



```
1 UPDATE med
2 SET prix = prix * 1.20
3 WHERE prix < 60;
4
```

```
SQL> select * from med;
```

NUMMED	NOMMED	PRIX
1	ACCUPRIL 5 MG	37.5
2	ACDigest, Gélule	59
3	ACERUMEN	58
4	ACFOL 5 MG	26.2
5	ACIDAC 150 MG	90
6	ACIDAC 300 MG	90
7	ACIGAM 100 MG	28.9
8	ACLAV 1 G	99
9	ACOL 1000 MG	18.3
10	ACTACEPT 10 MG	400
11	ACTALEVURE, Gelule	39

NUMMED	NOMMED	PRIX
12	ACTICARBINE 70 MG	46.9

12 rows selected.

```
SQL> UPDATE med
2 SET prix = prix * 1.20
3 WHERE prix < 60;
```

8 rows updated.

```
SQL> select * from med;
```

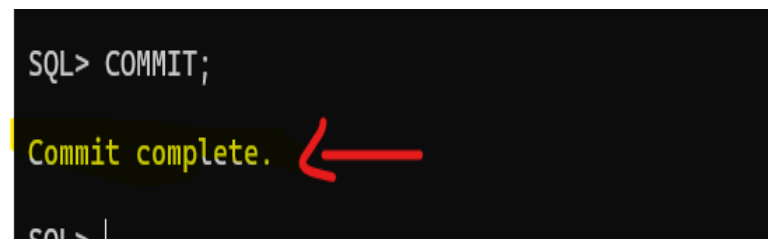
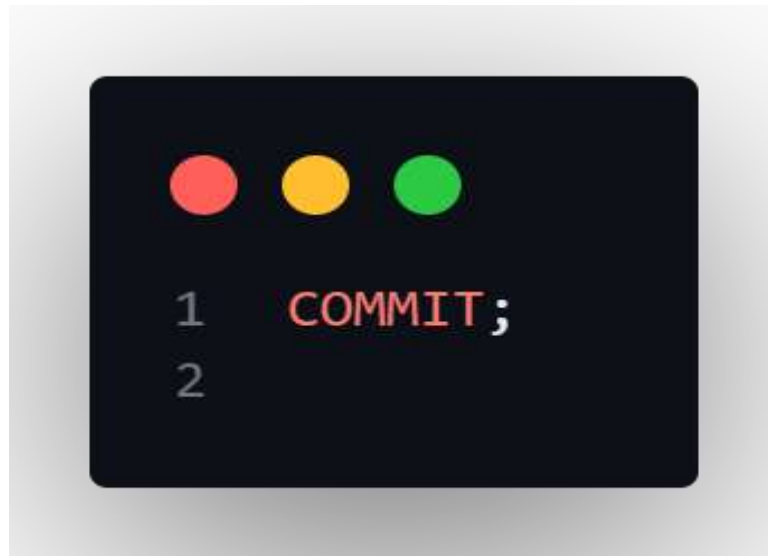
NUMMED	NOMMED	PRIX
1	ACCUPRIL 5 MG	45
2	ACDigest, Gélule	70.8
3	ACERUMEN	69.6
4	ACFOL 5 MG	31.44
5	ACIDAC 150 MG	90
6	ACIDAC 300 MG	90
7	ACIGAM 100 MG	34.68
8	ACLAV 1 G	99
9	ACOL 1000 MG	21.96
10	ACTACEPT 10 MG	400
11	ACTALEVURE, Gelule	46.8

NUMMED	NOMMED	PRIX
12	ACTICARBINE 70 MG	56.28

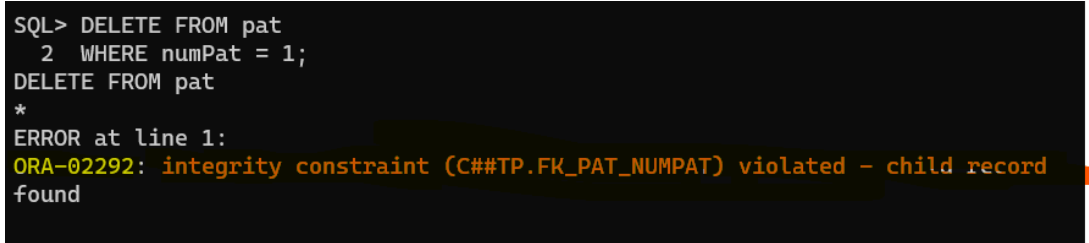
12 rows selected.



3) Valider la transaction :




4) Supprimer le patient N°1. Remarque ?

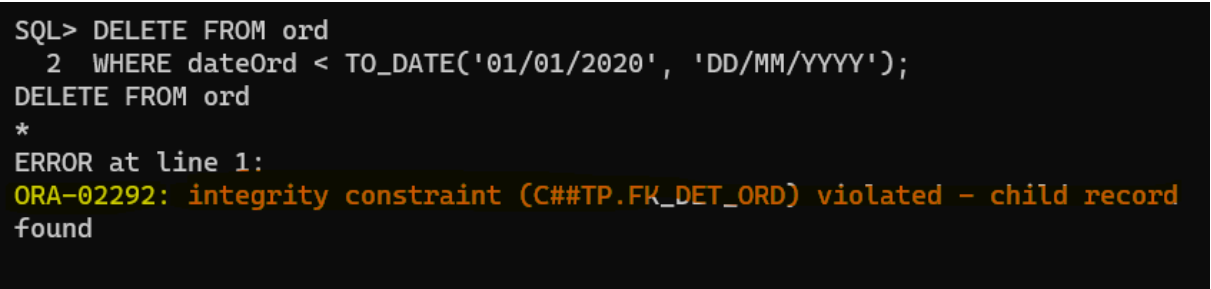


L'erreur ORA-02292 indique qu'il existe une contrainte d'intégrité référentielle (FK\_PAT\_NUMPAT) qui est violée lors de la tentative de suppression du patient numéro 1. Cette contrainte indique qu'il existe des enregistrements dans d'autres tables qui référencent ce patient.

5) Supprimer toutes les ordonnances dont la date est inférieure à '01/01/2020'. Remarque ?



```
1 DELETE FROM ord
2 WHERE dateOrd < TO_DATE('01/01/2020', 'DD/MM/YYYY');
3
```



```
SQL> DELETE FROM ord
      2 WHERE dateOrd < TO_DATE('01/01/2020', 'DD/MM/YYYY');
DELETE FROM ord
*
ERROR at line 1:
ORA-02292: integrity constraint (C##TP.FK_DET_ORD) violated - child record found
```

L'erreur ORA-02292 indique qu'il existe une contrainte d'intégrité référentielle (FK\_DET\_ORD) qui est violée lors de la tentative de suppression des ordonnances dont la date est inférieure à '01/01/2020'. Cette contrainte indique qu'il existe des enregistrements dans la table det qui référencent ces ordonnances.

Avant de supprimer les ordonnances, vous devez supprimer toutes les références à ces ordonnances dans la table det.

**III) Interrogation de la base de données :**

1) Tous les patients.



```
1 select * from pat;
```

```
SQL> select * from pat;
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
1	Touzani	Rabat	35
2	Farhati	Casablanca	50
3	Naciri	Rabat	19
4	Andaloussi	Marrakech	10
5	Tounsi	Casablanca	20
6	Mourabiti	Salé	70
7	Essaaidi	Marrakech	41
8	Ansari	Rabat	37
9	Houari	Rabat	36
10	Touzani	Casablanca	52
11	ayoub	Rabat	19

```
11 rows selected.
```

2) Le nom et l'âge des patients de Rabat



```
1 SELECT nomPat, agePat
2 FROM pat
3 WHERE villePat = 'Rabat';
4
```

```
SQL> SELECT nomPat, agePat
2 FROM pat
3 WHERE villePat = 'Rabat';
```

NOMPAT	AGEPAT
Touzani	35
Naciri	19
Ansari	37
Houari	36
ayoub	19

3) Les patients de Casablanca dont le nom est 'Touzani'.

```
SQL> SELECT *
2 FROM pat
3 WHERE villePat = 'Casablanca' AND nomPat = 'Touzani';
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
10	Touzani	Casablanca	52



```
1 FROM pat
2 WHERE villePat = 'Casablanca' AND nomPat = 'Touzani';
3
```

4) Les patients dont le nom est soit 'Naciri' soit 'Ansari'.



```
1 SELECT * FROM PAT WHERE NomPat = 'Naciri' OR NomPat = 'Ansari';
```

```
SQL> SELECT * FROM PAT WHERE NomPat = 'Naciri' OR NomPat = 'Ansari';
```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
3	Naciri	Rabat	19
8	Ansari	Rabat	37

5) Les noms des patients dont le nom contient 'd'.

```

1 SELECT NomPat FROM PAT WHERE NomPat LIKE '%d%';

SQL> SELECT NomPat FROM PAT WHERE NomPat LIKE '%d%';

NOMPAT
-----
Andaloussi
Essaaidi

```

6) Les ordonnances de 2021 classées dans l'ordre décroissant des numéros d'ordonnance.

```

1 SELECT * FROM ORD WHERE TO_CHAR(DateOrd, 'YYYY') = '2021' ORDER BY NumOrd DESC;

SQL> SELECT * FROM ORD WHERE TO_CHAR(DateOrd, 'YYYY') = '2021' ORDER BY NumOrd DESC;

  NUMORD DATEORD      NUMDOC      NUMPAT
-----
      8 18-OCT-21         5         2
      7 16-OCT-21         5         7
      6 15-AUG-21         1         1
      5 29-JUL-21         3         2
      4 18-MAR-21         5        10
      3 12-JAN-21         1        10

6 rows selected.

```

7) Les RDVs qui n'ont pas de motif.

```

1 SELECT * FROM RDV WHERE Motif IS NULL;

SQL> SELECT * FROM RDV WHERE Motif IS NULL;

  NUMRDV DATERDV      NUMDOC      NUMPAT MOTIF
-----
      7 28-MAY-21         1         1
     12 12-SEP-21         1         1

```

8) Les noms des patients ayant pris au moins un médicament de prix supérieur à 80DH.



```
1  SELECT DISTINCT P.NomPat
2  FROM PAT P, ORD O, MED M, DET D
3  WHERE P.NumPat = O.NumPat
4         AND O.NumOrd = D.NumOrd
5         AND D.NumMed = M.NumMed
6         AND M.Prix > 80;
```

```
SQL> SELECT DISTINCT P.NomPat
2  FROM PAT P, ORD O, MED M, DET D
3  WHERE P.NumPat = O.NumPat
4         AND O.NumOrd = D.NumOrd
5         AND D.NumMed = M.NumMed
6         AND M.Prix > 80;
```

NOMPAT

-----

Farhati  
Touzani

9) Les noms des patients n'ayant pas pris un médicament de prix supérieur à 80 DH.



```
1  SELECT DISTINCT P.NomPat
2  FROM PAT P
3  WHERE P.NumPat NOT IN (
4      SELECT DISTINCT P1.NumPat
5      FROM PAT P1
6      JOIN ORD O ON P1.NumPat = O.NumPat
7      JOIN DET D ON O.NumOrd = D.NumOrd
8      JOIN MED M ON D.NumMed = M.NumMed
9      WHERE M.Prix > 80
10 );
```

```

NOMPAT
-----
Mourabiti
Naciri
Andaloussi
Houari
Essaaidi
Ansari
Tounsi

7 rows selected.

```

10) Le nombre de RDV par docteur en 2021.



```

1 SELECT NumDoc, COUNT(NumRDV) AS NombreRDV
2 FROM RDV
3 WHERE TO_CHAR(DateRDV, 'YYYY') = '2021'
4 GROUP BY NumDoc;

```

```

SQL> SELECT NumDoc, COUNT(NumRDV) AS NombreRDV
2 FROM RDV
3 WHERE TO_CHAR(DateRDV, 'YYYY') = '2021'
4 GROUP BY NumDoc;

```

NUMDOC	NOMBRERDV
-----	-----
1	5
2	1
5	3
4	1
3	2

11) Les numéros d'ordonnances et leur montant total.



```
1 SELECT DISTINCT O.NumOrd, SUM(M.Prix) AS MontantTotal
2 FROM ORD O
3 JOIN DET D ON O.NumOrd = D.NumOrd
4 JOIN MED M ON D.NumMed = M.NumMed
5 GROUP BY O.NumOrd
6 ORDER BY O.NumOrd DESC;
```

```
SQL> SELECT DISTINCT O.NumOrd, SUM(M.Prix) AS MontantTotal
2 FROM ORD O
3 JOIN DET D ON O.NumOrd = D.NumOrd
4 JOIN MED M ON D.NumMed = M.NumMed
5 GROUP BY O.NumOrd
6 ORDER BY O.NumOrd DESC;
```

NUMORD	MONTANTTOTAL
10	514
9	66.4
8	37.5
7	95.5
6	105.2
5	628
4	484.4
3	174.7
2	121.7
1	37.5

10 rows selected.

12) Les patients sans RDV en 2021.



```
1 SELECT *
2 FROM PAT
3 WHERE NumPat NOT IN (
4     SELECT DISTINCT NumPat
5     FROM RDV
6     WHERE TO_CHAR(DateRDV, 'YYYY') = '2021'
7 );
8
```



```

SQL> SELECT *
2 FROM PAT
3 WHERE NumPat NOT IN (
4     SELECT DISTINCT NumPat
5     FROM RDV
6     WHERE TO_CHAR(DateRDV, 'YYYY') = '2021'
7 );

```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
3	Naciri	Rabat	19
4	Andaloussi	Marrakech	10
5	Tounsi	Casablanca	20
6	Mourabiti	Salé	70
8	Ansari	Rabat	37
9	Houari	Rabat	36

6 rows selected.

13) Les patients ayant eu des RDV avec tous les docteurs.

```

1 SELECT p.NumPat, p.NomPat
2 FROM PAT p
3 WHERE NOT EXISTS (
4     SELECT DISTINCT d.NumDoc
5     FROM DOC d
6     WHERE NOT EXISTS (
7         SELECT *
8         FROM RDV r
9         WHERE r.NumPat = p.NumPat AND r.NumDoc = d.NumDoc
10    )
11 );

```

```

SQL> SELECT p.NumPat, p.NomPat
2 FROM PAT p
3 WHERE NOT EXISTS (
4     SELECT DISTINCT d.NumDoc
5     FROM DOC d
6     WHERE NOT EXISTS (
7         SELECT *
8         FROM RDV r
9         WHERE r.NumPat = p.NumPat AND r.NumDoc = d.NumDoc
10    )
11 );

```

NUMPAT	NOMPAT
2	Farhati

14) Les docteur ayant RDV avec tous les patients.

```

1  SELECT d.NumDoc, d.NomDoc
2  FROM DOC d
3  WHERE NOT EXISTS (
4      SELECT DISTINCT p.NumPat
5      FROM PAT p
6      WHERE NOT EXISTS (
7          SELECT *
8          FROM RDV r
9          WHERE r.NumPat = p.NumPat AND r.NumDoc = d.NumDoc
10     )
11 );

```

```

SQL> SELECT d.NumDoc, d.NomDoc
2  FROM DOC d
3  WHERE NOT EXISTS (
4      SELECT DISTINCT p.NumPat
5      FROM PAT p
6      WHERE NOT EXISTS (
7          SELECT *
8          FROM RDV r
9          WHERE r.NumPat = p.NumPat AND r.NumDoc = d.NumDoc
10     )
11 );

```

NUMDOC NOMDOC

1 Alaoui

15) Les patients ayant eu des RDV avec les mêmes docteurs que le patient N°10.

```

1  Select * from PAT P
2  Where
3  NOT EXISTS ((Select Distinct R1.NumDoc From RDV R1 Where R1.NumPAT = P.NumPAT)
4  MINUS
5  (Select Distinct R2.NumDoc From RDV R2 Where R2.NumPAT=10))
6  AND
7  NOT EXISTS ((Select Distinct R3.NumDoc From RDV R3 Where R3.NumPAT=10)
8  MINUS
9  (Select Distinct R4.NumDoc From RDV R4 Where R4.NumPAT = P.NumPAT))
10 And P.NumPAT<>10;

```

```

SQL> Select * from PAT P
2  Where NOT EXISTS((Select Distinct R1.NumDoc From RDV R1 Where R1.NumPAT = P.NumPAT) MINUS (Select Distinct R2.NumDo
c From RDV R2 Where R2.NumPAT=10))
3  AND NOT EXISTS ((Select Distinct R3.NumDoc From RDV R3 Where R3.NumPAT=10) MINUS (Select Distinct R4.NumDoc From RD
V R4 Where R4.NumPAT = P.NumPAT))
4  And P.NumPAT<>10;

```

NUMPAT	NOMPAT	VILLEPAT	AGEPAT
3	Naciri	Rabat	19
7	Essaaidi	Marrakech	41

16) Les médicaments les plus prescrits en 2021.

```

1  SELECT m.NomMed, COUNT(*) AS PrescriptionCount
2  FROM MED m
3  JOIN DET d ON m.NumMed = d.NumMed
4  JOIN ORD o ON d.NumOrd = o.NumOrd
5  JOIN RDV r ON o.NumPat = r.NumPat AND r.NumDoc = o.NumDoc
6  WHERE TO_CHAR(r.DateRDV, 'YYYY') = '2021'
7  GROUP BY m.NomMed
8  ORDER BY PrescriptionCount DESC;
9

```

```

SQL> SELECT m.NomMed, COUNT(*) AS PrescriptionCount
2  FROM MED m
3  JOIN DET d ON m.NumMed = d.NumMed
4  JOIN ORD o ON d.NumOrd = o.NumOrd
5  JOIN RDV r ON o.NumPat = r.NumPat AND r.NumDoc = o.NumDoc
6  WHERE TO_CHAR(r.DateRDV, 'YYYY') = '2021'
7  GROUP BY m.NomMed
8  ORDER BY PrescriptionCount DESC;

```

NOMMED	PRESCRIPTIONCOUNT
ACCUPRIL 5 MG	13
ACTACEPT 10 MG	6
ACTALEVURE, Gelule	5
ACERUMEN	4
ACOL 1000 MG	4
ACIGAM 100 MG	4
ACLAV 1 G	2
ACIDAC 300 MG	2
ACIDAC 150 MG	1
ACTICARBINE 70 MG	1

10 rows selected.

SQL> |