Data Analyst Training, Openclassrooms

Project 3 – Part 2

1. Le nombre total d'appartements vendus au 1er semestre 2020
The total number of apartments sold in the first half of 2020

Query:

Run SQL query/queries on database projet_dataimmo:

```
1 SELECT COUNT(DISTINCT(prop.ID)) AS 'Total_appartements_vendus_1ier_semestre_2020' FROM propriete AS prop
2 JOIN transaction as tr ON prop.ID = tr.ID_prop
3 WHERE prop.Type_Local = 'appartement' AND tr.Date BETWEEN '2020-01-01' AND '2020-06-30';
```

Result:

Total_appartements_vendus_1ier_semestre_2020
31378

2. Proportion des ventes d'appartements par le nombre de pièces
Proportion of apartment sales by number of rooms

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
WITH Table1 AS
(SELECT SUM(valeur)  AS Ventes_Totales FROM transaction tr
 JOIN propriete AS prop ON prop.ID = tr.ID_prop
 WHERE prop.Type_Local = 'appartement')

SELECT Type_Local,
    Nombre_Pieces,
    SUM(tr.Valeur) AS Ventes_au_Pieces,
    Ventes_Totales,
    (SUM(tr.Valeur) * 100) / Ventes_Totales AS Proportion_des_Ventes
FROM table1, propriete AS prop
JOIN transaction as tr ON prop.ID = tr.ID_prop
WHERE prop.Type_Local = 'appartement'
GROUP BY Nombre_Pieces
ORDER BY Ventes_au_Pieces;
```

2. Proportion des ventes d'appartements par le nombre de pièces
Proportion of apartment sales by number of rooms

Result:

Type_Local	Nombre_Pieces	Ventes_au_Pieces	Ventes_Totales	Proportion_des_Ventes
Appartement	11	139000	7851157784	0.0018
Appartement	10	657000	7851157784	0.0084
Appartement	0	3337249	7851157784	0.0425
Appartement	9	14065142	7851157784	0.1791
Appartement	8	55731860	7851157784	0.7099
Appartement	7	99419213	7851157784	1.2663
Appartement	6	204260160	7851157784	2.6017
Appartement	5	587777026	7851157784	7.4865
Appartement	1	969036661	7851157784	12.3426
Appartement	4	1507375451	7851157784	19.1994
Appartement	2	1983921908	7851157784	25.2692
Appartement	3	2425437114	7851157784	30.8927

3. Liste des 10 départements où le prix du mètre carré est le plus élevé
List of the 10 departments where the price/m2 are the highest

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
SELECT Round(AVG(Valeur/Surface), 2) AS Prix_m2, Code_Departement
FROM propriete p
JOIN adresse a ON p.ID_Adresse = a.ID
JOIN transaction t ON t.ID_prop = p.ID
GROUP BY Code_Departement
ORDER BY Prix_m2 DESC LIMIT 10;
```

3. Liste des 10 départements où le prix du mètre carré est le plus élevé
List of the 10 departments where the price/m2 are the highest

Result:

Prix_m2 ▼ 1	Code_Departement
12121.88	75
7415.28	92
5395.98	94
4681.76	6
4363.01	93
4149.56	74
4126.19	78
4063.83	69
3905.71	2A
3838.74	33

4. Prix moyen du mètre carré d'une maison en Île-de-France.
Average price per square meter of a house in Île-de-France

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
SELECT Round(AVG(Valeur/surface), 2) AS Prix_m2_maison
FROM propriete p
JOIN adresse a ON p.ID_Adresse = a.ID
JOIN transaction t ON t.ID_prop = p.ID
WHERE Type_Local = 'Maison' AND Code_Departement IN ('75', '77', '78', '91', '92', '93', '94', '95');

```

Result:

Prix_m2_maison_IDF
3997.71

5. Liste des 10 appartements les plus chers avec le département et le nombre de mètres carrés..
List of the 10 most expensive apartments with the department and the number of m-sq

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
SELECT P.ID AS ID_bien, Code_Departement, Surface AS m2, Valeur
FROM propriete p
JOIN adresse a ON p.ID_Adresse = a.ID
JOIN transaction t ON t.ID_prop = p.ID
WHERE Type_Local = 'appartement'
ORDER BY Valeur DESC LIMIT 10;
```

5. Liste des 10 appartements les plus chers avec le département et le nombre de mètres carrés..
List of the 10 most expensive apartments with the department and the number of m-sq

Result:

ID_bien	Code_Departement	m2	Valeur 1
32275	75	10	9000000
21835	91	62	8600000
29799	75	289	8577713
32433	75	42	7620000
29850	75	200	7600000
29522	75	143	7535000
31973	75	357	7420000
32135	75	241	7200000
29353	75	310	7050000
29513	75	76	6600000

6. Taux d'évolution du nombre de ventes entre le premier et le second trimestre de 2020
Rate of change in the number of sales between the first and the second quarter of 2020

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
WITH
Table1 AS
(SELECT COUNT(tr.ID_prop) AS trimestre1
 FROM transaction tr
 JOIN propriete AS prop ON prop.ID = tr.ID_prop
 WHERE tr.Date BETWEEN '2020-01-01' AND '2020-03-31'),

Table2 AS
(SELECT COUNT(tr.ID_prop) AS trimestre2
 FROM transaction tr
 JOIN propriete AS prop ON prop.ID = tr.ID_prop
 WHERE tr.Date BETWEEN '2020-04-01' AND '2020-06-30'),

Table3 AS
(SELECT (trimestre2-trimestre1) *100 / trimestre1 AS Pourcentage_Difference
 FROM Table1, Table2)

SELECT trimestre1, trimestre2, Pourcentage_Difference FROM table1, table2, table3;
```

Result:

Taux_d_evolution %
3.6779

7. Liste des communes où le nombre de ventes a augmenté d'au moins 20% entre le premier et le second trimestre de 2020.

List of municipalities where the number of sales increased by at least 20% between the first and second quarters of 2020.

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
WITH
Table1 AS
(SELECT COUNT(tr.ID_prop) AS trimestre1, adr.commune as commune
 FROM transaction tr
 JOIN propriete AS prop ON prop.ID = tr.ID_prop
 JOIN adresse AS adr ON prop.ID_Adresse = adr.ID
 WHERE tr.Date BETWEEN '2020-01-01' AND '2020-03-31'
 GROUP BY adr.commune),

Table2 AS
(SELECT COUNT(tr.ID_prop) AS trimestre2, adr.commune as commune
 FROM transaction tr
 JOIN propriete AS prop ON prop.ID = tr.ID_prop
 JOIN adresse AS adr ON prop.ID_Adresse = adr.ID
 WHERE tr.Date BETWEEN '2020-04-01' AND '2020-06-30'
 GROUP BY adr.commune)

```

7. Liste des communes où le nombre de ventes a augmenté d'au moins 20% entre le premier et le second trimestre de 2020.

List of municipalities where the number of sales increased by at least 20% between the first and second quarters of 2020.

Query:

```
18 SELECT trimestre1, trimestre2,
19 (trimestre2-trimestre1)*100/trimestre1 AS Difference_Pourcentage,
20 adr.commune
21 FROM adresse adr LEFT OUTER JOIN table1 ON table1.commune = adr.Commune
22 LEFT OUTER JOIN table2 ON table2.commune = adr.commune
23 WHERE (trimestre2-trimestre1)*100/trimestre1 >= 20;
```

Result:

Showing rows 0 - 24 (580 total, Query took 0.9088 seconds.)

trimestre1	trimestre2	Difference_Pourcentage	commune
5	6	20.0000	DIVONNE-LES-BAINS
11	14	27.2727	LAON
3	5	66.6667	VILLERS-COTTERETS
1	2	100.0000	CHATEAU-ARNOUX-SAINT-AUBAN
2	5	150.0000	BARCELONNETTE
1	2	100.0000	SAINT-MARTIN-DE-BROMES

8. Différence en pourcentage du prix au mètre carré entre un appartement de 2 pièces et un appartement de 3 pièces

Percentage difference in price per square meter between a 2 room apartment and a 3 room apartment

Query:

Run SQL query/queries on database projet_dataimmo:

```sql
WITH
Table1 AS (
SELECT AVG(t.Valeur/p.Surface) AS Deux_Pieces_Prix_m2
FROM propriete p
JOIN transaction t ON t.ID_prop = p.ID
WHERE p.Nombre_Pieces = 2 AND Type_Local = 'appartement'),

Table2  AS (
SELECT AVG(t.Valeur/p.Surface) AS Trois_Pieces_Prix_m2
FROM propriete p
JOIN transaction t ON t.ID_prop = p.ID
WHERE p.Nombre_Pieces = 3 AND Type_Local = 'appartement'),

Table3 AS (
SELECT (Trois_Pieces_Prix_m2-Deux_Pieces_Prix_m2)*100/Deux_Pieces_Prix_m2 AS Difference_Pourcentage
FROM Table1, Table2)

SELECT Deux_Pieces_Prix_m2, Trois_Pieces_Prix_m2, Difference_Pourcentage FROM table1, table2, table3;
```

8. Différence en pourcentage du prix au mètre carré entre un appartement de 2 pièces et un appartement de 3 pièces

Percentage difference in price per square meter between a 2 room apartment and a 3 room apartment

Result:

Deux_Pieces_Prix_m2	Trois_Pieces_Prix_m2	Difference_Pourcentage
4927.803353603943	4285.3712055990 13	-13.036886862278875

9. Les moyennes des valeurs foncières pour le top 3 des communes des départements 6, 13, 33, 59, 69
Average land values for the top 3 municipalities in each of these departments 6, 13, 33, 59 and 69

Query:

Run SQL query/queries on table projet_dataimmo.propriete:

```sql
WITH
table1 AS
(SELECT AVG(tr.valeur) OVER (PARTITION BY adr.commune) AS Avg6, Code_Departement, Commune
FROM transaction tr
JOIN propriete prop ON prop.ID = tr.ID_prop
JOIN adresse adr ON adr.ID = prop.ID_Adresse
WHERE adr.Code_Departement = '6'
GROUP BY adr.commune
ORDER BY Avg6 DESC LIMIT 3),

table2 AS
(SELECT AVG(tr.valeur) OVER (PARTITION BY adr.commune) AS Avg13, Code_Departement, Commune
FROM transaction tr
JOIN propriete prop ON prop.ID = tr.ID_prop
JOIN adresse adr ON adr.ID = prop.ID_Adresse
WHERE adr.Code_Departement = '13'
GROUP BY adr.commune
ORDER BY Avg13 DESC LIMIT 3),

```

9. Les moyennes des valeurs foncières pour le top 3 des communes des départements 6, 13, 33, 59, 69
Average land values for the top 3 municipalities in each of these departments 6, 13, 33, 59 and 69

Query:

Run SQL query/queries on table projet_dataimmo.propriete:

```
19
20 table3 AS
21 (SELECT AVG(tr.valeur) OVER (PARTITION BY adr.commune) AS Avg33, Code_Departement, Commune
22 FROM transaction tr
23 JOIN propriete prop ON prop.ID = tr.ID_prop
24 JOIN adresse adr ON adr.ID = prop.ID_Adresse
25 WHERE adr.Code_Departement = '33'
26 GROUP BY adr.commune
27 ORDER BY Avg33 DESC LIMIT 3),
28
29 table4 AS
30 (SELECT AVG(tr.valeur) OVER (PARTITION BY adr.commune) AS Avg59, Code_Departement, Commune
31 FROM transaction tr
32 JOIN propriete prop ON prop.ID = tr.ID_prop
33 JOIN adresse adr ON adr.ID = prop.ID_Adresse
34 WHERE adr.Code_Departement = '59'
35 GROUP BY adr.commune
36 ORDER BY Avg59 DESC LIMIT 3),
37
```

9. Les moyennes des valeurs foncières pour le top 3 des communes des départements 6, 13, 33, 59, 69
Average land values for the top 3 municipalities in each of these departments 6, 13, 33, 59 and 69

Query:

Run SQL query/queries on table projet_dataimmo.propriete:

```
37
38 table5 AS
39 (SELECT AVG(tr.valeur) OVER (PARTITION BY adr.commune) AS Avg69, Code_Departement, Commune
40 FROM transaction tr
41 JOIN propriete prop ON prop.ID = tr.ID_prop
42 JOIN adresse adr ON adr.ID = prop.ID_Adresse
43 WHERE adr.Code_Departement = '69'
44 GROUP BY adr.commune
45 ORDER BY Avg69 DESC LIMIT 3)
46
47 SELECT * FROM TABLE1
48 UNION
49 SELECT * FROM TABLE2
50 UNION
51 SELECT * FROM TABLE3
52 UNION
53 SELECT * FROM TABLE4
54 UNION
55 SELECT * FROM TABLE5;
```

9. Les moyennes des valeurs foncières pour le top 3 des communes des départements 6, 13, 33, 59, 69
Average land values for the top 3 municipalities in each of these departments 6, 13, 33, 59 and 69

Result:

Avg6	Code_Departement	Commune
1380000.0000	6	SAINT-JEAN-CAP-FERRAT
980000.0000	6	EZE
780000.0000	6	CAP-D AIL
330850.0000	13	SAINT SAVOURNIN
330000.0000	13	GIGNAC-LA-NERTHE
293790.0000	13	PLAN DE CUQUES
800000.0000	33	LEGE-CAP-FERRET
349900.0000	33	CESTAS
335000.0000	33	VAYRES
970000.0000	59	HALLUIN
433202.0000	59	BERSEE
417500.0000	59	MOUVAUX
621300.0000	69	GENAS
566950.0000	69	COLLONGES-AU-MONT- D OR
540000.0000	69	LYON 6EME