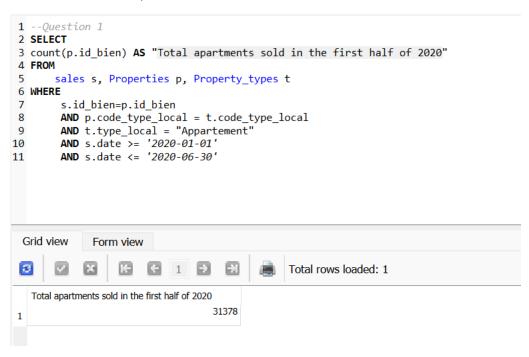


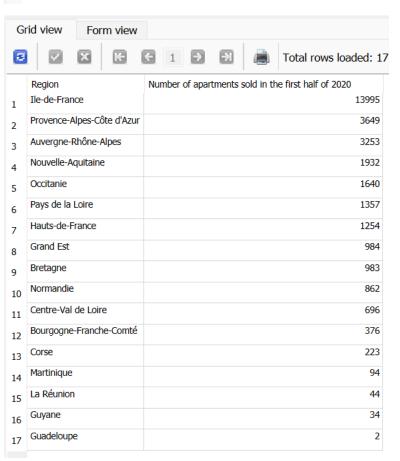
# **DATA ANALYSIS**

Question 1 – Total apartments sold in the first half of 2020.



### Question 2 – Number of apartments sold in the first half of 2020

```
1 SELECT
       r.nom_region as Region,
 3
       count(*) as "Number of apartments sold in the first half of 2020"
 4 -- Question 2
 5 FROM
       regions r, departements d, communes c, Properties p, Property_types t, Sales s
 6
7 WHERE
8
       r.code_region=d.code_region
9
       AND c.code departement=d.code departement
10
       AND p.id_codedep_codecommune=c.id_codedep_codecommune
11
       AND t.code_type_local=p.code_type_local
       AND p.id_bien=s.id_bien
12
13
       AND t.type_local = 'Appartement'
       AND s.date >= '2020-01-01'
AND s.date <= '2020-06-30'
14
15
16 GROUP BY
17
       r.nom_region
18 ORDER BY
19
       "Number of apartments sold in the first half of 2020" DESC
```



## Question 3 – Proportion of total apartment sales by number of rooms

```
Query
          History
1 -- Question 3
2 SELECT
       p.total_piece AS "Number of rooms",
       count(s.id_vente) AS "Apartments sold",
       round(count(s.id_vente) * 100.0 /
(select count(*) from Sales s, Properties p, Property_types t
6
7
           WHERE s.id_bien=p.id_bien
           AND p.code_type_local=t.code_type_local
8
           AND t.type_local='Appartement'),4)
9
           AS "Percentage of total apartment sales"
10
11 FROM
       Sales s, Properties p, Property_types t
12
13 WHERE
14
        s.id_bien=p.id_bien
        AND p.code_type_local=t.code_type_local
15
16
       AND t.type_local = 'Appartement'
17 GROUP BY
       "Number of rooms"
```

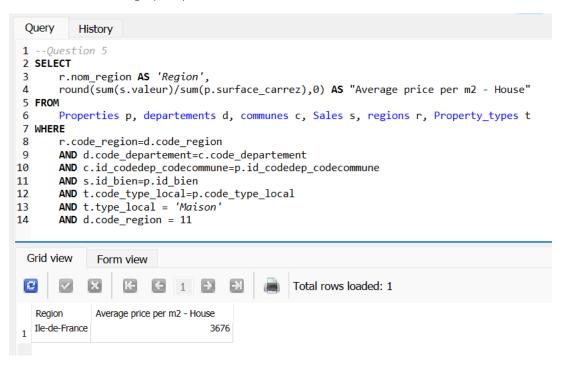
Gı	id view Form	view	
ø		K	Total rows loaded
	Number of rooms	Apartments sold	Percentage of total apartment sales
L	0	30	0.0956
2	1	6739	21.4768
3	2	9783	31.1779
1	3	8966	28.5742
5	4	4460	14.2138
5	5	1114	3.5503
,	6	204	0.6501
3	7	54	0.1721
)	8	17	0.0542
.0	9	8	0.0255
1	10	2	0.0064
2	11	1	0.0032

## Question 4 – List of the top 10 most expensive departments in terms of price per m<sup>2</sup>

```
1 -- Question 4
 2 SELECT
 3 d.nom_departement AS Departement,
4 round(sum(s.valeur)/sum(p.surface_carrez),2) AS "Average price per m2"
 6 Sales s, Properties p, departements d, communes c
7 WHERE
      s.id_bien=p.id_bien
9
       AND p.id_codedep_codecommune=c.id_codedep_codecommune
10
      AND c.code_departement=d.code_departement
11 GROUP BY
12 d.nom_departement
13 ORDER BY
14
       "Average price per m2" DESC
15 LIMIT
16
      10
```

16	rid view For	m view	
3	<b>Z</b> X	<b>(-</b> 1 <b>-</b>	Total rows loaded: 10
	Departement	Average price per m2	
L	Paris	11898.72	
)	Hauts-de-Seine	7238.19	
3	Val-de-Marne	4831.37	
1	Alpes-Maritimes	4587.83	
5	Haute-Savoie	4159.22	
5	Seine-Saint-Denis	4065.39	
7	Yvelines	4002.16	
3	Rhône	3893.5	
)	Corse-du-Sud	3752.76	
10	Gironde	3567.93	

Question 5 – Average prix per m² of a house in Île-de-France.

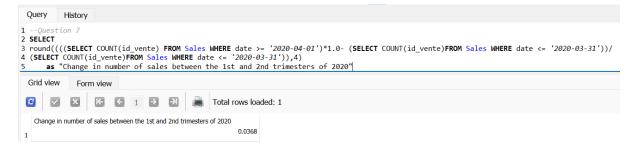


Question 6 – List of the 10 most expensive apartments with the region they are in and the number of metres squared.

```
1 -- Question 6
 2 SELECT
 3
       s.valeur AS Price,
       p.no_voie as "Street Number",
 4
       p.btq AS "B/T/Q",
p.type_voie AS "Type of street",
 5
 6
       p.voie AS "Street name",
p.code_postal AS "Post code",
 7
 8
       r.nom_region AS "Region",
p.surface_carrez AS "Metres squared"
 9
10
11 FROM
12 regions r, departements d, communes c, Properties p, Sales s, Property_types t
13 WHERE
       r.code_region=d.code_region
14
15
       AND d.code_departement=c.code_departement
16
       AND c.id_codedep_codecommune=p.id_codedep_codecommune
17
       AND s.id_bien=p.id_bien
       AND t.code_type_local=p.code_type_local
18
19
       AND t.type_local = 'Appartement'
20 ORDER BY
21
       s.valeur DESC
22 LIMIT
23
       10
```

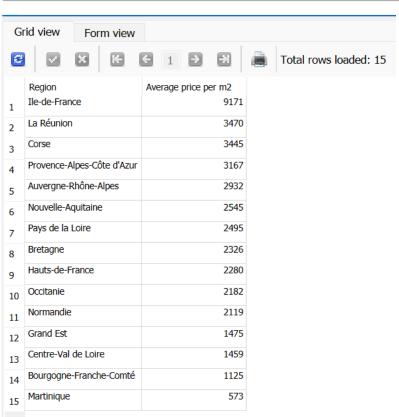
Gr	id view	Form view						
e	V X	₭ €	1 🖹	1 Tota	l rows loaded: 10			
	Price	Street Number	B/T/Q	Type of street	Street name	Post code	Region	Metres squared
1	9000000.0	6		BD	SUCHET	75016	Ile-de-France	9.1
2	8600000	16		CHE	DE LA CAVIGNON	91100	Ile-de-France	64
3	8577713	104		RUE	DU BAC	75007	Ile-de-France	20.55
ļ	7620000	33		RUE	LEMERCIER	75017	Ile-de-France	42.77
;	7600000	72		RUE	D ASSAS	75006	Ile-de-France	253.3
5	7535000	8		RUE	SAINT HYACINTHE	75001	Ile-de-France	139.9
,	7420000	36		AV	GEORGES MANDEL	75016	Ile-de-France	360.95
3	7200000	23		BD	DE BEAUSEJOUR	75016	Ile-de-France	595
,	7050000	26		RUE	CAMBON	75001	Ile-de-France	122.56
10	6600000	108		RUE	SAINT HONORE	75001	Ile-de-France	79.38

## Question 7 – Change in number of sales between the 1st and 2nd trimesters of 2020



Question 8 – Ranking of regions based on the price per square metre of apartments with more than 4 rooms.

```
Query
          History
 1 -- Question 8
 2 SELECT
       r.nom_region AS Region,
       round(sum(s.valeur)/sum(p.surface_carrez),0) AS "Average price per m2"
 5 FROM
 6 regions r, departements d, communes c, Properties p, Sales s, Property_types t
 7 WHERE
       r.code region=d.code region
9
       AND d.code_departement=c.code_departement
10
       AND c.id_codedep_codecommune=p.id_codedep_codecommune
       AND s.id_bien=p.id_bien
11
12
       AND t.code_type_local=p.code_type_local
       AND p.total_piece > 4
AND t.type_local = 'Appartement'
13
14
15 GROUP BY
16
       r.nom_region
17 ORDER BY
       "Average price per m2" DESC
```



Question 9 - Liste des communes ayant eu au moins 50 ventes au 1er trimestre

```
Query
        History
1 -- Question 9
2 SELECT
3
      c.nom_commune AS Commune,
      count(s.id_vente) AS 'Number of sales'
5 FROM
6
      communes c, Properties p, Sales s
7 WHERE
8
      c.id_codedep_codecommune=p.id_codedep_codecommune
9
      AND s.id_bien=p.id_bien
10
      AND s.date <= '2020-03-31'
11 GROUP BY
12
      c.nom_commune
13 HAVING
      count(s.id_vente) >= 50
15 ORDER BY
     count(s.id_vente) desc
16
```

G	rid view	Form view	1		
e	<b>V</b>	X	<b>6</b> 1 <b>3 3</b>	Tot	al rows loaded: 48
L	Commune Paris 17e	e Arrondissement	Number of sales 228		
2	Paris 15e	Arrondissement	215		
3	Paris 18e	Arrondissement	209		
4	Nice		173		
5	Paris 11e	Arrondissement	169		
6	Paris 16e	Arrondissement	165		
7	Bordeaux		157		
8	Paris 14e	Arrondissement	146		
9	Paris 20e	Arrondissement	127		
10	Nantes		119		
11	Paris 19e	Arrondissement	116		
12	Paris 12e	Arrondissement	110		
13	Paris 10e	Arrondissement	109		
14	Paris 9e A	rrondissement	106		
15	Grenoble		106		
16	Boulogne-	Billancourt	99		
17	Paris 13e	Arrondissement	94		
18	Paris 7e A	rrondissement	87		
19	Paris 6e A	rrondissement	86		
20	Marseille 8	Be Arrondisseme	nt 81		

21	Asnières-sur-Seine	81
22	Courbevoie	80
23	Paris 5e Arrondissement	79
24	Paris 3e Arrondissement	79
25	Toulouse	78
26	Antibes	77
27	Marseille 4e Arrondissement	72
28	Marseille 1er Arrondissement	71
29	Vincennes	68
30	Rueil-Malmaison	68
31	Lille	67
32	Marseille 9e Arrondissement	66
33	Montreuil	65
34	Angers	64
35	Nîmes	63
36	Sète	62
37	Paris 8e Arrondissement	62
38	La Ciotat	62
39	Rennes	61

40	Paris 2e Arrondissement	61
41	Paris 4e Arrondissement	60
42	Toulon	59
43	Levallois-Perret	59
44	Saint-Maur-des-Fossés	56
45	Versailles	54
46	Ajaccio	54
47	Puteaux	53
48	Issy-les-Moulineaux	50

Question 10 - Difference in percentage of the price per square metre of a 2 and a 3 room apartment

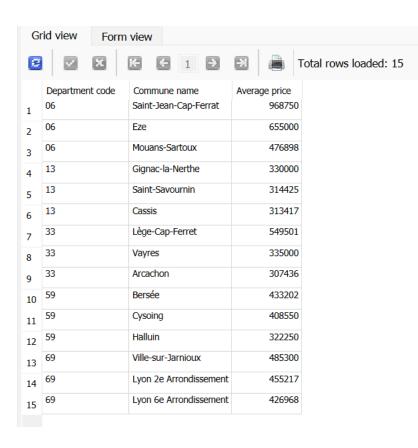
```
Query
          History
 1 --Question 10
 2 SELECT
       round(((\textbf{SELECT} \ sum(s.valeur)/sum(p.surface\_carrez)*1.0
 3
 4
           FROM Properties p, Sales s ,Property_types t
 5
           WHERE p.id_bien = s.id_bien
                AND p.code_type_local=t.code_type_local
 6
                AND p.total_piece = 2 AND t.type_local = 'Appartement') -
 7
 8
            (SELECT sum(s.valeur)/sum(p.surface_carrez)
           FROM properties p, sales s, Property_types t
 9
10
           WHERE p.id_bien = s.id_bien
                AND p.code_type_local=t.code_type_local
11
                AND p.total_piece = 3
12
                AND t.type_local = 'Appartement')) /
13
14
            (SELECT sum(s.valeur)/sum(p.surface_carrez)
15
           FROM Properties p, Sales s, Property_types t
16
           WHERE p.id_bien = s.id_bien
                AND p.code_type_local=t.code_type_local
17
               AND p.total_piece = 2
AND t.type_local = 'Appartement'),4)*100
18
19
20
           AS "Difference in percentage of the price per square metre of a 2 and a 3 room apartment"
  Grid view
              Form view
```



Question 11 - Les moyennes de valeurs foncières pour le top 3 des communes des départements 6, 13, 33, 59 et 69.

```
Query
           History
 1 --Question 11
 2 SELECT * FROM
       (SELECT
            c.code_departement AS "Department code",
            c.nom_commune AS "Commune name",
 5
 6
            round(avg(s.valeur),0) AS "Average price"
 7
 8
            communes c, Sales s, Properties p
 9
       WHERE
10
           p.id_bien=s.id_bien
           AND c.id_codedep_codecommune=p.id_codedep_codecommune
11
12
           AND c.code_departement = '06'
13
       GROUP BY
14
            c.nom_commune
15
       ORDER BY
            "Average price" DESC
16
17
       LIMIT 3)
18 UNION
19 SELECT * FROM
20
       (SELECT
           c.code_departement AS "Code de departement",
c.nom_commune AS "Commune name",
21
22
           round(avg(s.valeur),0) AS "Average price"
23
       FROM
24
25
            communes c, Sales s, Properties p
26
       WHERE
27
            p.id_bien=s.id_bien
            AND c.id_codedep_codecommune=p.id_codedep_codecommune
28
29
           AND c.code_departement = '13'
30 GROUP BY
31
            c.nom_commune
       ORDER BY
32
33
            "Average price" DESC
34
       LIMIT 3)
35 UNION
36 SELECT * FROM
```

```
37
       (SELECT
           c.code_departement AS "Code de departement",
38
           c.nom_commune AS "Commune name",
39
40
           round(avg(s.valeur),0) AS "Average price"
41
42
           communes c, Sales s, Properties p
43
       WHERE
44
           p.id_bien=s.id_bien
45
           AND c.id_codedep_codecommune=p.id_codedep_codecommune
           AND c.code_departement = '33'
46
47
48
           c.nom_commune
49
       ORDER BY
50
           "Average price" DESC
51
       LIMIT 3)
52 UNION
53 SELECT * FROM
54
       (SELECT
55
           c.code_departement AS "Code de departement",
           c.nom_commune AS "Commune name",
56
           round(avg(s.valeur),0) AS "Average price"
57
58
59
           communes c, Sales s, Properties p
60
       WHERE
61
           p.id_bien=s.id_bien
           AND c.id_codedep_codecommune=p.id_codedep_codecommune
62
63
           AND c.code_departement = '59'
64
       GROUP BY
65
           c.nom_commune
       ORDER BY
66
           "Average price" DESC
67
68
       LIMIT 3)
69 UNION
70 SELECT * FROM
71
       (SELECT
           c.code_departement AS "Code de departement",
72
           c.nom_commune AS "Commune name",
73
74
           round(avg(s.valeur),0) AS "Average price"
75
       FROM
           communes c, Sales s, Properties p
76
77
       WHERE
78
           p.id bien=s.id bien
79
           AND c.id_codedep_codecommune=p.id_codedep_codecommune
80
           AND c.code_departement = '69'
81
       GROUP BY
82
           c.nom commune
       ORDER BY
83
84
           "Average price" DESC
85
       LIMIT 3)
86
           ORDER BY
       "Code de departement", "Average price" DESC
87
```



Question 12 – The 20 communes with the most transactions per 1000 people for communes that have populations of more than 10,000.

```
1 -- Question 12
 2 SELECT
 3
        \verb|c.nom_commune| \textbf{AS} Commune, \\
        c.population AS Population,
       count(s.id_vente) AS Sales,
round((count(s.id_vente)*1.0/c.population),5) * 1000 AS "Transactions per 1000 people"
 6
 7 FROM
       communes c, Properties p, Sales s
9 WHERE
10
         \verb|c.id_codedep_codecommune=p.id_codedep_codecommune|\\
11
         AND p.id_bien=s.id_bien
        AND c.population >= 10000
12
13 GROUP BY
14
       c.nom_commune
15 ORDER BY
16 "Transactions per 1000 people" DESC
17 LIMIT 20
```

Grid view Form view						
C	<b>▼</b> X E	<b>6</b> 1	K E	Total rows loaded: 20		
	Commune	Population Sales		Transactions per 1000 people		
1	Paris 2e Arrondissement	21735	127	5.84		
2	Paris 1er Arrondissement	16055	79	4.92		
3	Paris 3e Arrondissement	34306	161	4.69		
4	Arcachon	11898	55	4.62		
5	La Baule-Escoublac	16797	77	4.58		
6	Paris 4e Arrondissement	29390	120	4.08		
7	Roquebrune-Cap-Martin	13041	52	3.99		
8	Paris 8e Arrondissement	36250	139	3.83		
9	Sanary-sur-Mer	17160	60	3.5		
10	Paris 9e Arrondissement	60563	208	3.43		
		40776	0.7	2.42		
11	La Londe-les-Maures	10776	37	3.43		
12	Paris 6e Arrondissement	41171	139	3.38		
13	Saint-Cyr-sur-Mer	11725	38	3.24		
14	Chantilly	11178	35	3.13		
15	Saint-Mandé	22576	69	3.06		
16	Pornichet	11440	35	3.06		
17	Paris 10e Arrondissement	86863	264	3.04		
18	Menton	30981	91	2.94		
19	Saint-Hilaire-de-Riez	11501	33	2.87		
20	Vincennes	50230	141	2.81		