


```
-- 1. Nombre total d'appartements vendus au 1er semestre 2020. --
```

```
SELECT COUNT(type_local) as total_appart  
FROM biens b  
      JOIN ventes v ON b.id_bien = v.id_bien  
WHERE type_local = 'Appartement'  
      AND date_mutation BETWEEN '2020-01-01' AND '2020-06-30';
```

| | |
|---|--------------|
| | total_appart |
| ▶ | 31378 |

```
-- 2. Le nombre de ventes d'appartement par région pour le 1er semestre 2020. --
SELECT nom_region,
       COUNT(*) AS nombre_ventes
FROM ventes v
     JOIN biens b ON v.id_bien = b.id_bien
     JOIN communes c ON b.id_commune = c.id_commune
     JOIN regions r ON c.id_region = r.id_region
WHERE type_local = 'Appartement'
GROUP BY nom_region
ORDER BY nombre_ventes DESC;
```

| | nom_region | nombre_ventes |
|---|----------------------------|---------------|
| ► | Ile-de-France | 13853 |
| | Provence-Alpes-Côte d'Azur | 3664 |
| | Auvergne-Rhône-Alpes | 3285 |
| | Nouvelle-Aquitaine | 1956 |
| | Occitanie | 1706 |
| | Pays de la Loire | 1310 |
| | Hauts-de-France | 1260 |
| | Grand Est | 995 |
| | Bretagne | 992 |
| | Normandie | 875 |
| | Centre-Val de Loire | 707 |
| | Bourgogne-Franche-Comté | 374 |
| | Corse | 230 |
| | Martinique | 94 |
| | La Réunion | 42 |
| | Guyane | 33 |
| | Guadeloupe | 2 |

```

-- 3. Proportion des ventes d'appartements par le nombre de pièces. --
SELECT nb_piece,
       COUNT(*) AS nombre_vente,
       ROUND(
         (
           COUNT(*) * 100 / (
             SELECT COUNT(*)
             FROM ventes v
             JOIN biens b ON v.id_bien = b.id_bien
             WHERE b.type_local = 'Appartement'
           )
         ),
         2
       ) AS proportion
FROM ventes v
     JOIN biens b ON v.id_bien = b.id_bien
WHERE b.type_local = 'Appartement'
GROUP BY nb_piece
ORDER BY nb_piece ASC;

```

| | nb_piece | nombre_vente | proportion |
|---|----------|--------------|------------|
| ► | 0 | 30 | 0.10 |
| | 1 | 6738 | 21.47 |
| | 2 | 9782 | 31.17 |
| | 3 | 8972 | 28.59 |
| | 4 | 4458 | 14.21 |
| | 5 | 1112 | 3.54 |
| | 6 | 204 | 0.65 |
| | 7 | 54 | 0.17 |
| | 8 | 17 | 0.05 |
| | 9 | 8 | 0.03 |
| | 10 | 2 | 0.01 |
| | 11 | 1 | 0.00 |

```
-- 4. Liste des 10 départements où le prix du mètre carré est le plus élevé. --
SELECT c.code_departement AS Num_Departement,
       c.nom_departement AS Departement,
       ROUND(AVG(v.valeur_fonciere / b.surface), 2) AS prix_m2
FROM ventes v
     JOIN biens b ON v.id_bien = b.id_bien
     JOIN communes c ON b.id_commune = c.id_commune
WHERE surface_carrez != 0
GROUP BY Num_Departement,
         c.nom_departement
ORDER BY prix_m2 DESC
LIMIT 10
;
```

| | Num_Departement | Departement | prix_m2 |
|---|-----------------|-------------------|----------|
| ► | 75 | Paris | 12133.36 |
| | 92 | Hauts-de-Seine | 7398.30 |
| | 94 | Val-de-Marne | 5417.53 |
| | 6 | Alpes-Maritimes | 4682.10 |
| | 93 | Seine-Saint-Denis | 4360.52 |
| | 78 | Yvelines | 4148.17 |
| | 74 | Haute-Savoie | 4144.95 |
| | 69 | Rhône | 4063.44 |
| | 2A | Corse-du-Sud | 3896.97 |
| | 33 | Gironde | 3823.00 |

```
-- 5. Prix moyen du mètre carré d'une maison en Île-de-France. --  
SELECT ROUND(AVG(v.valeur_fonciere / b.surface_carrez), 2) AS prix_moyen_m2  
FROM ventes v  
      JOIN biens b ON v.id_bien = b.id_bien  
      JOIN communes c ON b.id_commune = c.id_commune  
WHERE b.type_local = 'Maison'  
      AND c.id_region = '11';
```

| | prix_moyen_m2 |
|---|---------------|
| ▶ | 3764.39 |

```

-- 6. Liste des 10 appartements les plus chers avec la région et le nombre de mètres carrés. --
SELECT r.nom_region,
       MAX(valeur_fonciere) AS prix,
       b.surface_carrez
FROM ventes v
     JOIN biens b ON v.id_bien = b.id_bien
     JOIN communes c ON b.id_commune = c.id_commune
     JOIN regions r ON c.id_region = r.id_region
WHERE b.type_local = 'appartement'
GROUP BY r.nom_region,
         b.surface_carrez
ORDER BY prix DESC
LIMIT 10;

```

| | nom_region | prix | surface_carrez |
|---|---------------|---------|----------------|
| ► | Ile-de-France | 9000000 | 9 |
| | Ile-de-France | 8600000 | 64 |
| | Ile-de-France | 8577713 | 21 |
| | Ile-de-France | 7620000 | 43 |
| | Ile-de-France | 7600000 | 253 |
| | Ile-de-France | 7535000 | 140 |
| | Ile-de-France | 7420000 | 361 |
| | Ile-de-France | 7200000 | 595 |
| | Ile-de-France | 7050000 | 123 |
| | Ile-de-France | 6600000 | 79 |

```
-- 7. Taux d'évolution du nombre de ventes entre le premier et le second trimestre de 2020. -  
-  
WITH vente_1t AS (  
    SELECT COUNT(*) AS vente01  
    FROM ventes  
    WHERE date_mutation BETWEEN '2020-01-01' AND '2020-03-31'  
),  
vente_2t AS (  
    SELECT COUNT(*) AS vente02  
    FROM ventes  
    WHERE date_mutation BETWEEN '2020-04-01' AND '2020-06-30'  
)  
SELECT ROUND((vente02 * 100 / vente01) - 100, 2) AS taux_evolution  
FROM vente_1t,  
     vente_2t;
```

| | taux_evolution |
|---|----------------|
| ▶ | 3.68 |


```
-- 8. Le classement des régions par rapport au prix au mètre carré des appartement de plus de 4 pièces. --
SELECT r.nom_region,
       ROUND(AVG(v.valeur_fonciere / b.surface_carrez), 2) AS prix_m2
FROM ventes v
     JOIN biens b ON v.id_bien = b.id_bien
     JOIN communes c ON b.id_commune = c.id_commune
     JOIN regions r ON c.id_region = r.id_region
WHERE nb_piece > 4
      AND b.type_local = 'appartement'
GROUP BY r.nom_region
ORDER BY prix_m2 DESC;
```

| | nom_region | prix_m2 |
|---|----------------------------|---------|
| ► | Ile-de-France | 8775.11 |
| | La Réunion | 3636.52 |
| | Provence-Alpes-Côte d'Azur | 3582.69 |
| | Corse | 3106.69 |
| | Auvergne-Rhône-Alpes | 2898.25 |
| | Nouvelle-Aquitaine | 2471.79 |
| | Bretagne | 2409.28 |
| | Pays de la Loire | 2298.86 |
| | Hauts-de-France | 2189.28 |
| | Occitanie | 2106.30 |
| | Normandie | 2016.03 |
| | Grand Est | 1532.52 |
| | Centre-Val de Loire | 1437.29 |
| | Bourgogne-Franche-Comté | 1250.37 |
| | Martinique | 574.77 |

```
-- 9. Liste des communes ayant eu au moins 50 ventes au 1er trimestre --
SELECT c.nom_commune,
       COUNT(v.id_mutation) AS nombre_ventes
FROM ventes v
      JOIN biens b ON v.id_bien = b.id_bien
      JOIN communes c ON b.id_commune = c.id_commune
WHERE v.date_mutation BETWEEN '2020-01-01' AND '2020-03-31'
GROUP BY c.nom_commune,
         v.nature_mutation
HAVING nombre_ventes >= 50
ORDER BY nombre_ventes DESC;
```

| | nom_commune | nombre_ventes | | | |
|---|----------------|---------------|--|-----------------|----|
| ▶ | PARIS 17 | 229 | | ANTIBES | 78 |
| | PARIS 15 | 215 | | MARSEILLE 4... | 72 |
| | PARIS 18 | 209 | | MARSEILLE 1ER | 71 |
| | NICE | 173 | | LILLE | 67 |
| | PARIS 11 | 170 | | RUEIL-MALMA... | 67 |
| | PARIS 16 | 165 | | VINCENNES | 67 |
| | BORDEAUX | 157 | | MARSEILLE 9... | 66 |
| | PARIS 14 | 148 | | ANGERS | 64 |
| | PARIS 20 | 127 | | MONTREUIL | 64 |
| | NANTES | 118 | | SETE | 64 |
| | PARIS 19 | 116 | | RENNES | 63 |
| | PARIS 12 | 110 | | NIMES | 63 |
| | PARIS 10 | 110 | | PARIS 08 | 62 |
| | GRENOBLE | 109 | | PARIS 02 | 62 |
| | PARIS 09 | 106 | | LA CIOTAT | 62 |
| | BOULOGNE-BI... | 96 | | TOULON | 60 |
| | PARIS 13 | 94 | | PARIS 04 | 59 |
| | PARIS 06 | 87 | | LEVALLOIS-PE... | 59 |
| | PARIS 07 | 87 | | SAINT-MAUR-... | 55 |
| | MARSEILLE 8... | 81 | | AJACCIO | 55 |
| | COURBEVOIE | 80 | | VERSAILLES | 55 |
| | ASNIERES-SU... | 80 | | PUTEAUX | 53 |
| | TOULOUSE | 79 | | | |
| | PARIS 05 | 79 | | | |
| | PARIS 03 | 78 | | | |

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

```
WITH p2 AS (  
)  
p3 AS (  
    SELECT round(AVG(v.valeur_fonciere / b.surface_carrez), 2) AS prix_3pcs  
    FROM biens b  
        JOIN ventes v ON b.id_bien = v.id_bien  
    WHERE b.nb_piece = 3  
)  
SELECT round(prix_3pcs * 100 / prix_2pcs, 2) - 100 AS difference,  
    prix_2pcs,  
    prix_3pcs  
FROM p2,  
    p3;
```

| | difference | prix_2pcs | prix_3pcs |
|---|------------|-----------|-----------|
| ▶ | -12.76 | 4880.81 | 4258.19 |

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

```
WITH valeur_ville AS (
    SELECT c.id_commune,
           c.nom_commune,
           nom_departement,
           ROUND(AVG(valeur_fonciere)) AS moyenne_valeurs,
           code_departement
    FROM ventes v
    JOIN biens b ON v.id_bien = b.id_bien
    JOIN communes c ON b.id_commune = c.id_commune
    WHERE code_departement IN (6, 13, 33, 59, 69)
    GROUP BY c.id_commune
)
SELECT *
FROM (
    SELECT code_departement as Departement,
           nom_departement,
           nom_commune as Commune,
           moyenne_valeurs,
           rank() OVER (
               PARTITION BY code_departement
               ORDER BY moyenne_valeurs DESC
           ) AS ranking
    FROM valeur_ville
) AS temp1
WHERE ranking <= 3;
```

| | Departement | nom_departement | Commune | moyenne_valeurs | ranking |
|---|-------------|------------------|-----------------------|-----------------|---------|
| ► | 13 | Bouches-du-Rhône | GIGNAC-LA-NERTHE | 330000 | 1 |
| | 13 | Bouches-du-Rhône | SAINT SAVOURNIN | 314425 | 2 |
| | 13 | Bouches-du-Rhône | PEYPIN | 288000 | 3 |
| | 33 | Gironde | LEGE-CAP-FERRET | 530044 | 1 |
| | 33 | Gironde | VAYRES | 335000 | 2 |
| | 33 | Gironde | ARCACHON | 306045 | 3 |
| | 59 | Nord | BERSEE | 433202 | 1 |
| | 59 | Nord | CYSOING | 408550 | 2 |
| | 59 | Nord | BONDUES | 318150 | 3 |
| | 6 | Alpes-Maritimes | SAINT-JEAN-CAP-FERRAT | 875000 | 1 |
| | 6 | Alpes-Maritimes | EZE | 655000 | 2 |
| | 6 | Alpes-Maritimes | VILLEFRANCHE-SUR-MER | 448053 | 3 |
| | 69 | Rhône | VILLE SUR JARNIOUX | 485300 | 1 |
| | 69 | Rhône | LYON 2EME | 449214 | 2 |
| | 69 | Rhône | LYON 6EME | 426968 | 3 |

```
-- 12. Les 20 communes avec le plus de transactions pour 1000 habitants pour les communes qui dépassent les 10 000 habitants. --
```

```
WITH temp AS (  
    SELECT c.nom_commune,  
           pop_totale,  
           COUNT(*) AS nb_ventes  
    FROM ventes v  
         JOIN biens b ON v.id_bien = b.id_bien  
         JOIN communes c ON b.id_commune = c.id_commune  
         JOIN population p ON c.id_commune = p.id_commune  
    WHERE pop_totale > 10000  
    GROUP BY c.nom_commune,  
             pop_totale  
)  
SELECT nom_commune,  
       pop_totale,  
       ROUND((1000 * nb_ventes) / pop_totale, 2) AS taux  
FROM temp  
GROUP BY nom_commune,  
         pop_totale  
ORDER BY taux DESC  
LIMIT 20;
```

| | nom_commune | pop_totale | taux |
|---|-----------------------|------------|------|
| ► | PARIS 02 | 21735 | 5.89 |
| | PARIS 01 | 16055 | 4.98 |
| | PARIS 03 | 34306 | 4.66 |
| | ARCACHON | 11898 | 4.62 |
| | LA BAULE-ESCOUBLAC | 16797 | 4.52 |
| | ROQUEBRUNE CAP MARTIN | 13041 | 4.06 |
| | PARIS 04 | 29390 | 4.01 |
| | PARIS 08 | 36250 | 3.86 |
| | LA LONDE LES MAURES | 10776 | 3.53 |
| | SANARY SUR MER | 17160 | 3.50 |
| | PARIS 09 | 60563 | 3.43 |
| | PARIS 06 | 41171 | 3.40 |
| | CHANTILLY | 11178 | 3.13 |
| | PORNICHET | 11440 | 3.06 |
| | PARIS 10 | 86863 | 3.05 |
| | SAINT-MANDE | 22576 | 3.01 |
| | SAINT-CYR-SUR-MER | 11725 | 2.99 |
| | MENTON | 30981 | 2.94 |
| | SAINT-HILAIRE-DE-RIEZ | 11501 | 2.87 |
| | PARIS 17 | 167975 | 2.80 |

