

# Requête SQL utiles

## Correspondance entre code INSEE présent dans additional\_data et cor\_area\_synthese

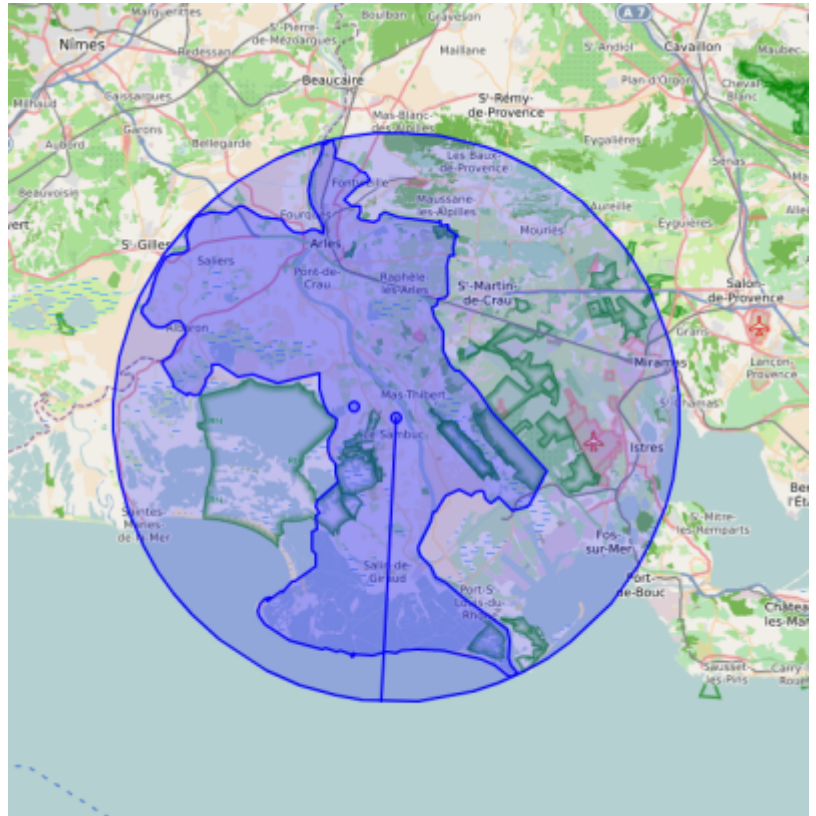
Trouver les codes INSEE fournis dans le champ additional\_data attribut communeInseeCode, existant dans la table ref\_geo.l\_areas mais qui ne correspondent pas à ceux présent dans la table gn\_synthese.cor\_area\_synthese :

```
WITH communes AS (  
    SELECT la.id_area, la.area_code AS insee_code, la.area_name  
    FROM ref_geo.l_areas AS la  
    WHERE la.id_type = ref_geo.get_id_area_type_by_code('COM')  
    AND la."enable" = TRUE  
)  
SELECT s.unique_id_sinp, s.the_geom_4326,  
s.additional_data::json->>'communeInseeCode' AS code_insee_json, c.area_name  
AS area_name_cas, c.insee_code AS code_insee_cas  
FROM gn_synthese.synthese AS s  
    LEFT JOIN gn_synthese.cor_area_synthese AS cas  
        ON (s.id_synthese = cas.id_synthese)  
    JOIN communes AS c  
        ON (cas.id_area = c.id_area)  
WHERE s."precision" IS NULL  
    AND s.additional_data::json->>'communeInseeCode' != c.insee_code ;
```

Trouver les codes INSEE fournis dans le champ additional\_data attribut communeInseeCode qui ne correspondent pas à ceux présent dans la table gn\_synthese.cor\_area\_synthese car ils n'existent pas dans la table ref\_geo.l\_areas :

```
WITH communes AS (  
    SELECT la.id_area, la.area_code AS insee_code, la.area_name  
    FROM ref_geo.l_areas AS la  
    WHERE la.id_type = ref_geo.get_id_area_type_by_code('COM')  
    AND la."enable" = TRUE  
)  
SELECT DISTINCT s.additional_data::json->>'communeInseeCode' AS  
code_insee_json  
FROM gn_synthese.synthese AS s  
    LEFT JOIN gn_synthese.cor_area_synthese AS cas  
        ON (s.id_synthese = cas.id_synthese)  
    JOIN communes AS c  
        ON (cas.id_area = c.id_area)  
WHERE s."precision" IS NULL  
    AND s.additional_data::json->>'communeInseeCode' != c.insee_code  
    AND s.additional_data::json->>'communeInseeCode' NOT IN (SELECT  
insee_code FROM communes);
```

## Calculer le rayon du cercle comprenant un polygone (communes)



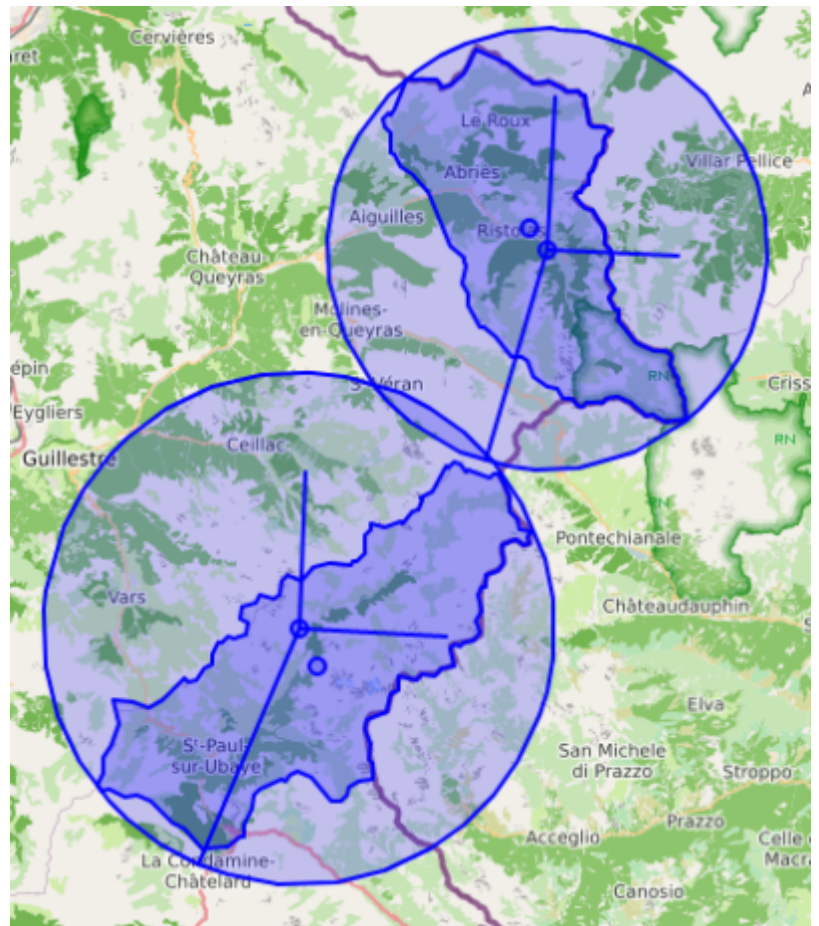
```

SELECT
  unique_id_sinp,
  round(radius(ST_MinimumBoundingRadius(la.geom))) AS "precision",
  center(ST_MinimumBoundingRadius(la.geom)) AS rayon,
  ST_MinimumBoundingCircle(la.geom) AS cercle,
  ST_LongestLine(center(ST_MinimumBoundingRadius(la.geom)),
ST_MinimumBoundingCircle(la.geom)) AS rayon,
  st_centroid(la.geom) AS centroid,
  la.geom,
  la.area_name
FROM gn_synthese.synthese AS s
  LEFT JOIN gn_synthese.cor_area_synthese AS cas
    ON (s.id_synthese = cas.id_synthese)
  JOIN ref_geo.l_areas AS la
    ON (cas.id_area = la.id_area)
WHERE s.id_source != gn_synthese.get_id_source_by_name('SI CBN')
  AND s."precision" IS NULL
  AND la.id_type = ref_geo.get_id_area_type_by_code('COM')
LIMIT 100;

```

## Différents calculs du rayon moyen d'un polygone

Il est possible d'utiliser :



1. la fonction `ST_MinimumBoundingRadius()` de Postgis (trait oblique):

```
round(radius(ST_MinimumBoundingRadius(geom)))
```

2. la distance moyenne du centroïde du polygone a chaque point constituant son périmètre (trait vertical) :

```
round(AVG(ST_Distance(st_centroid(la.geom), perimeters.geom)))
```

3. le calcul du rayon d'un cercle à partir de son aire (trait horizontal) :

```
round(|/(st_area(geom)/pi()))::INT
```

La première méthode retourne un rayon plus grand que la seconde méthode, en moyenne la plus petite valeur obtenue étant avec le calcul du rayon d'un cercle à partir de son aire... Nous avons retenu le calcul n°2.

```
SELECT
  la.area_name,
  la.area_code,
  round(AVG(ST_Distance(st_centroid(la.geom), perimeters.geom))) AS
"precision_avgdistance",
  round(|/(st_area(la.geom)/pi()))::INT AS "precision_calculaire",
  round(radius(ST_MinimumBoundingRadius(la.geom))) AS
"precision_minboundingradius",
  la.geom,
```

```

st_centroid(la.geom) AS centroid,
center(ST_MinimumBoundingRadius(la.geom)) AS centre,
ST_MinimumBoundingCircle(la.geom) AS cercle,
ST_LongestLine(center(ST_MinimumBoundingRadius(la.geom)),
ST_MinimumBoundingCircle(la.geom)) AS rayon_minboundingradius,
ST_MakeLine(
  center(ST_MinimumBoundingRadius(la.geom)),
  ST_SetSRID(
    ST_MakePoint(
      ST_X(center(ST_MinimumBoundingRadius(la.geom))) +
round(|/(st_area(la.geom)/pi()))::INT,
      ST_Y(center(ST_MinimumBoundingRadius(la.geom)))
    ),
    2154
  )
) AS rayon_calculaire,
ST_MakeLine(
  center(ST_MinimumBoundingRadius(la.geom)),
  ST_SetSRID(
    ST_MakePoint(
      ST_X(center(ST_MinimumBoundingRadius(la.geom))),
      ST_Y(center(ST_MinimumBoundingRadius(la.geom))) +
round(AVG(ST_Distance(st_centroid(la.geom), perimeters.geom)))
    ),
    2154
  )
) AS rayon_avgdistance
FROM ref_geo.l_areas AS la JOIN (
  SELECT id_area, (ST_DumpPoints(geom)).*
  FROM ref_geo.l_areas
  WHERE id_type = ref_geo.get_id_area_type('COM')
) AS perimeters
ON (la.id_area = perimeters.id_area)
WHERE la.id_type = ref_geo.get_id_area_type('COM')
GROUP BY la.id_area, la.geom, la.area_name, la.area_code
ORDER BY la.id_area
LIMIT 10 ;

```

## Déterminer s'il manque des index

Source: <https://salayhin.wordpress.com/2018/01/02/finding-missing-index-in-postgresql/>

```

SELECT
  schemaname,
  relname,
  seq_scan - idx_scan AS too_much_seq,
CASE
  WHEN seq_scan - COALESCE(idx_scan, 0) > 0 THEN 'Missing Index ?'
  ELSE 'OK'

```

```

    END,
    pg_relation_size(CONCAT(schename, '.', relname)::regclass) AS
rel_size,
    seq_scan, idx_scan
FROM pg_stat_all_tables
WHERE pg_relation_size(CONCAT(schename, '.', relname)::regclass) > 80000
ORDER BY too_much_seq DESC;

```

```

SELECT
  x1.table_in_trouble,
  pg_relation_size(x1.table_in_trouble) AS sz_n_byts,
  x1.seq_scan,
  x1.idx_scan,
  CASE
    WHEN pg_relation_size(x1.table_in_trouble) > 500000000
      THEN 'Exceeds 500 megs, too large to count in a view. For a count,
count individually'::text
    ELSE COUNT(x1.table_in_trouble)::text
  END AS tbl_rec_count,
  x1.priority
FROM
  (
    SELECT
      (schename::text || '.'::text) || relname::text AS table_in_trouble,
      seq_scan,
      idx_scan,
      CASE
        WHEN (seq_scan - idx_scan) < 500
          THEN 'Minor Problem'::text
        WHEN (seq_scan - idx_scan) >= 500 AND (seq_scan - idx_scan) < 2500
          THEN 'Major Problem'::text
        WHEN (seq_scan - idx_scan) >= 2500
          THEN 'Extreme Problem'::text
        ELSE NULL::text
      END AS priority
    FROM
      pg_stat_all_tables
    WHERE
      seq_scan > idx_scan
      AND schename != 'pg_catalog'::name
      AND seq_scan > 100) x1
GROUP BY
  x1.table_in_trouble,
  x1.seq_scan,
  x1.idx_scan,
  x1.priority
ORDER BY
  x1.priority DESC,
  x1.seq_scan;

```

## Déterminer les groupes d'identifiant contigu

Requête SQL permettant de déterminer les groupes de suites d'identifiants non contigu et le nombre d'id compris dedans :

```

SELECT
  grp,
  "min",
  "max",
  COUNT(id_data) AS downloaded,
  td.nbr AS to_download
FROM (
  SELECT
    grp,
    MIN(id) AS "min",
    MAX(id) AS "max"
  FROM (
    SELECT
      id,
      SUM(rst) OVER (ORDER BY id) AS grp
    FROM (
      SELECT
        id_synthese AS id,
        CASE WHEN COALESCE(LAG(id_synthese + 10000) OVER (ORDER
BY id_synthese), 0) < id_synthese THEN 1 END AS rst
      FROM gn2pg_flavia.id_synthese_pole_invertebres AS ispi
      LEFT JOIN gn2pg_flavia.data_json AS dj
        ON ispi.id_synthese = dj.id_data
      WHERE dj.id_data IS NULL
      ORDER BY ispi.id_synthese ASC
    ) t
  ) t
  GROUP BY grp
  ORDER BY 1
) AS d
LEFT JOIN gn2pg_flavia.data_json AS dj
  ON dj.id_data > d.min AND dj.id_data < d.max,
LATERAL (
  SELECT COUNT(id_synthese) AS nbr
  FROM gn2pg_flavia.id_synthese_pole_invertebres
  WHERE id_synthese > d.min AND id_synthese < d.max
) AS td
GROUP BY d.grp, d."min", d."max", td.nbr
ORDER BY d.grp;

```

Résultats :

grp	min	max	count	Done
1	3 215 985	3 339 850	0	X

2	5 839 897	6 467 981	0	
3	9 404 094	9 576 583	0	
4	15 444 377	15 455 826	2 454	
5	15 542 006	15 542 006	0	
6	15 609 091	15 609 795	703	
7	15 843 950	15 843 951	0	
8	16 335 991	16 336 391	1	
9	16 640 640	16 641 280	290	

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