

1. What is the average rental price of 1 room, 2 room, 3 room and 4 room apartments in some of the major cities in Poland? Arrange the result such that average rent for each type of room is shown in separate columns.

Solution:

```
SELECT
city,
ROUND(avg_rent_1R,2) AS avg_rent_1R,
ROUND (avg_rent_2R,2) AS avg_rent_2R,
ROUND (avg_rent_3R,2) AS avg_rent_3R,
ROUND (avg_rent_4R,2) a AS s avg_rent_4R
FROM (

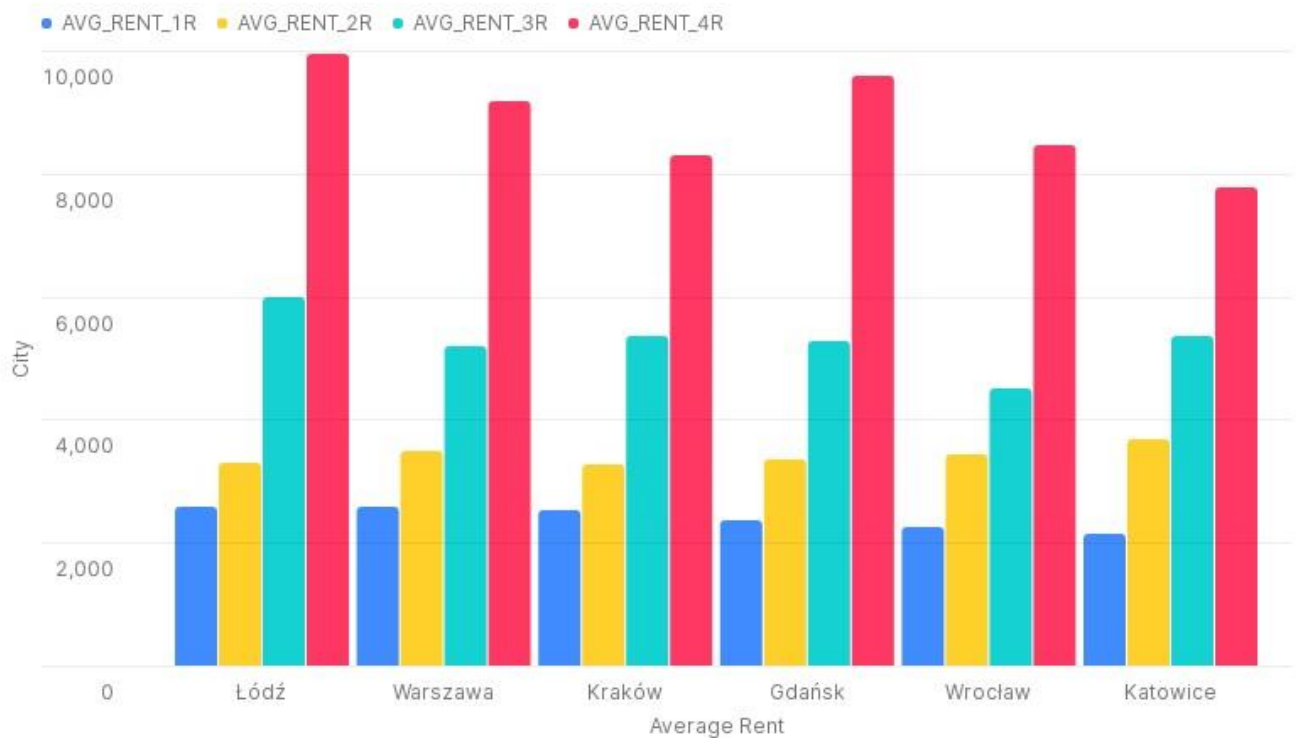
    SELECT city,no_of_rooms,price_new
    FROM otodom_data_transformed
    WHERE city IN ('Warszawa', 'Wrocław', 'Kraków', 'Gdańsk', 'Katowice', 'Łódź')
    AND apartment_flag = 'apartment'
    AND is_for_sale='false'
    AND no_of_rooms in (1,2,3,4)) x
PIVOT
( AVG(price_new)
  FOR no_of_rooms IN ('1','2','3','4')
)
AS RESULT (city,avg_rent_1R, avg_rent_2R, avg_rent_3R, avg_rent_4R)
ORDER BY avg_rent_4R DESC;
```

Results:

	CITY	AVG_RENT_1R	AVG_RENT_2R	AVG_RENT_3R	AVG_RENT_4R
1	Łódź	2,592.07	3,299.83	6,000.59	9,946.43
2	Gdańsk	2,361.58	3,357.88	5,285.94	9,577.59
3	Warszawa	2,575.42	3,476.59	5,187.08	9163.00
4	Wrocław	2,264.53	3,429.11	4,504.78	8,448.86
5	Kraków	2,534.35	3267.30	5,345.83	8,284.91
6	Katowice	2,142.38	3,671.02	5343.60	7,768.75

Dashboard:

House_Pricing_Analysis



2. A customer wants to buy an apartment which is around 90-100 m2 and within a range of 800,000 to 1M, display the suburbs in Warsaw where one can find such apartments?

Solution:

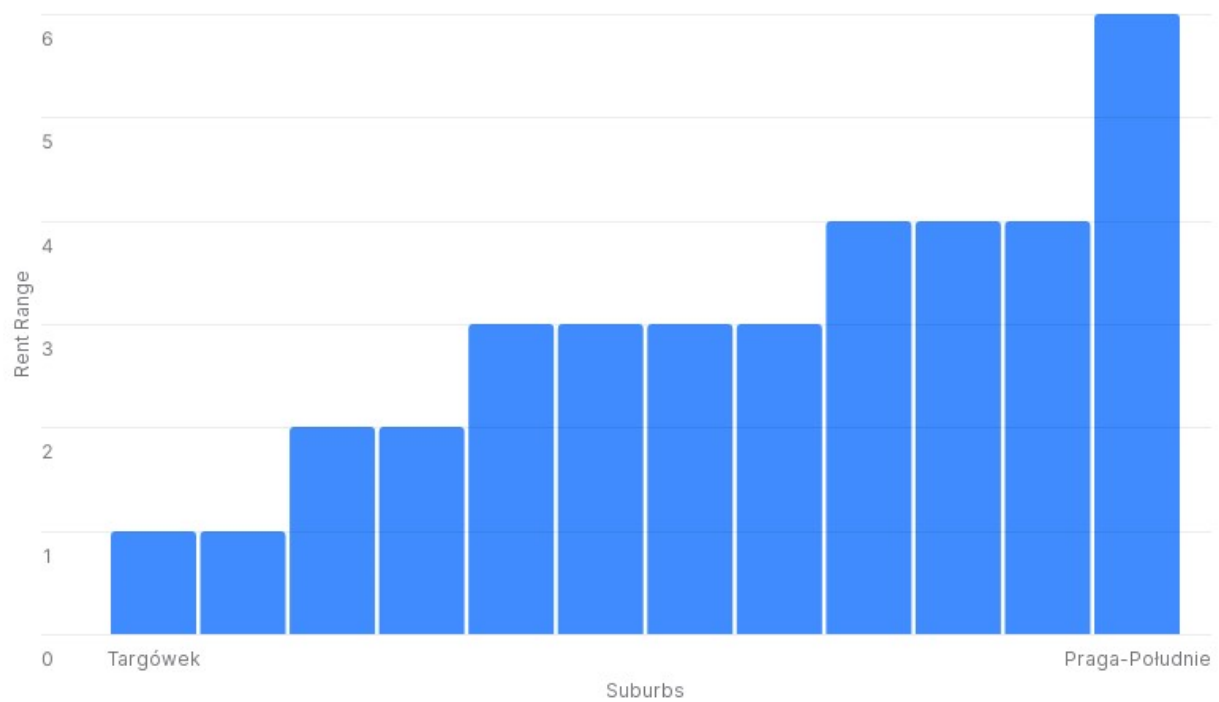
```
SELECT suburb, count(1), MAX(price_new) max_price, MIN(price_new) min_price
FROM otodom_data_transformed
WHERE city IN ('Warszawa')
AND suburb IS NOT NULL
AND apartment_flag = 'apartment'
AND is_for_sale = 'true'
AND surface_new BETWEEN 90 AND 100
AND price_new BETWEEN 800000 AND 1000000
GROUP BY suburb
ORDER BY COUNT(1) DESC;
```

Results:

	SUBURB	...	COUNT(1)	...	MAX_PRICE	MIN_PRICE
1	Praga-Południe		6		959000.00	820000.00
2	Mokotów		4		998000.00	838800.00
3	Ursus		4		979000.00	811878.00
4	Bielany		4		945000.00	835000.00
5	Wola		3		1000000.00	899000.00
6	Włochy		3		999000.00	864420.00
7	Bemowo		3		980000.00	909000.00
8	Białołęka		3		970000.00	868000.00
9	Wilanów		2		900000.00	890000.00
10	Ursynów		2		892000.00	864420.00
11	Targówek		1		915000.00	915000.00
12	Wawer		1		928000.00	928000.00

Dashboard:

House_Pricing_Analysis



3. What size of an apartment can one expect with a monthly rent of 3000 to 4000 PLN in different major cities of Poland?

Solution:

```
SELECT city, AVG(surface_new) AS avg_area
FROM otodom_data_transformed
WHERE city IN ('Warszawa', 'Wrocław', 'Kraków', 'Gdańsk', 'Katowice', 'Łódź')
AND apartment_flag = 'apartment'
AND is_for_sale = 'false'
AND price_new BETWEEN 3000 AND 4000
GROUP BY city
ORDER BY avg_area;
```

Results:

	CITY	... AVG_AREA
1	Kraków	52.479207921
2	Wrocław	52.6956
3	Gdańsk	53.187984496
4	Łódź	53.388732394
5	Warszawa	54.538539326
6	Katowice	55.434029851

Dashboard:

House_Pricing_Analysis



4. What are the most expensive apartments in major cities of Poland? Display the ad title in English along with city, suburb, cost, size.

Solution:

WITH cte AS

(SELECT city, MAX(price_new) max_price, MIN(price_new) min_price

FROM otodom_data_transformed

WHERE city IN ('Warszawa', 'Wrocław', 'Kraków', 'Gdańsk', 'Katowice', 'Łódź')

AND apartment_flag = 'apartment'

AND is_for_sale = 'true'

GROUP BY city)

SELECT x.ID, x.title_eng, x.city, x.suburb, x.price_new, x.surface_new, x.url

FROM otodom_data_transformed x

JOIN cte ON cte.city=x.city AND cte.max_price=x.price_new

WHERE apartment_flag = 'apartment'

AND is_for_sale = 'true'

ORDER BY x.city,x.price_new;

Results:

	ID	TITLE_ENG	CITY	SUBURB	PRICE_NEW	SURFACE_NEW	URL
1	17554	2-room apartment 43m2 + balcony without commission	Gdańsk	Ujeścisko - Łostowice	11000000.00	274	https://www.otodom.pl/pl/oferta/apartament-na-sprzedaz-park-lane-ID4fZLm
2	17151	2-room apartment 42m2 + loggia without commission	Katowice	Koszutka	17720000.00	226	https://www.otodom.pl/pl/oferta/apartament-fort-cze-z-tarasem-na-dachu-500m2-ID4jNhn
3	55968	Apartment in a representative tenement house!	Kraków	Grzegórzki	16000000.00	560	https://www.otodom.pl/pl/oferta/ultra-nowoczesny-dom-wykonczony-pod-klucz-ID4hXp1
4	55351	Delux apartment in the heart of Powiśle	Warszawa	Wesoła	20000000.00	577	https://www.otodom.pl/pl/oferta/topowa-lokalizacja-apartament-z-basenem-ID4iZEj
5	23766	2pok at PWRI! Double western balcony! 6 minutes	Wrocław	Szczepin	15000000.00	350	https://www.otodom.pl/pl/oferta/dom-350-m-warszawa-ID4eb1H
6	25793	3 rooms 2 20m2 balconies ideal for investments.	Łódź	Łódź-Polesie	7500000.00	570	https://www.otodom.pl/pl/oferta/ekskluzywna-willa-obok-lasku-wolskiego-ID4iLkz

Dashboard:

House_Pricing_Analysis



5. What is the percentage of private & business ads on Otodom?

Solution:

WITH all_ads AS

(SELECT COUNT(1) tot_ads FROM OTODOM_DATA_TRANSFORMED),

ads_type AS

(SELECT advertiser_type

, SUM(CASE WHEN advertiser_type='business' THEN 1 END) AS business_ads

, SUM(CASE WHEN advertiser_type='private' THEN 1 END) AS private_ads

FROM OTODOM_DATA_TRANSFORMED

GROUP BY advertiser_type)

SELECT CONCAT(ROUND((MAX(business_ads) * 100)/MAX(tot_ads),2),'%') AS
business_ads_perc

, CONCAT(ROUND((MAX(private_ads) * 100)/MAX(tot_ads),2),'%') AS private_ads_perc

FROM ads_type ty

CROSS JOIN all_ads al ;

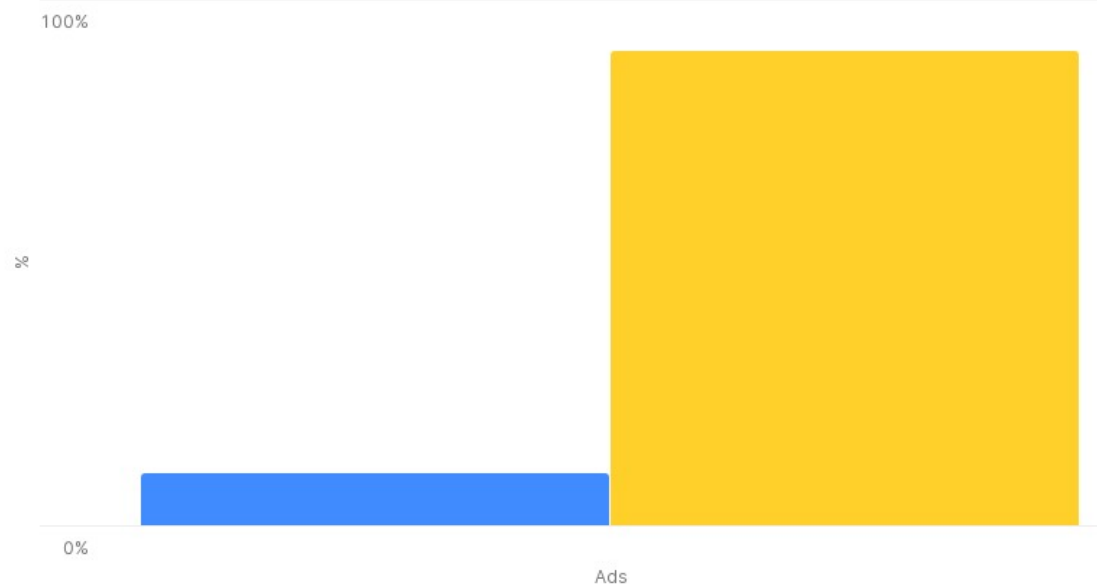
Results:

Results		
Chart		
	BUSINESS_ADS_PERC	PRIVATE_ADS_PERC
1	89.99%	10.01%

Dashboard:

House_Pricing_Analysis

■ PRIVATE_ADS_PERC ■ BUSINESS_ADS_PERC



6. What is the avg sale price for 3 room apartments within 50-70 m2 area in major cities of Poland?

Solution:

```
SELECT city, round(avg(price_new),2) as avg_sale_price
FROM OTODOM_DATA_TRANSFORMED
WHERE city in ('Warszawa', 'Wrocław', 'Kraków', 'Gdańsk', 'Katowice', 'Łódź')
AND apartment_flag = 'apartment'
AND is_for_sale = 'true'
AND no_of_rooms = 3
AND surface_new BETWEEN 50 AND 70
GROUP BY city
ORDER BY avg_sale_price DESC;
```

Results:

	CITY	AVG_SALE_PRICE
1	Gdańsk	661510.10
2	Katowice	659,529.92
3	Warszawa	652,082.99
4	Łódź	649,716.42
5	Wrocław	647,388.84
6	Kraków	631,736.97

Dashboard:

House_Pricing_Analysis



7. What is the average rental price for apartments in Warsaw in different suburbs?
Categorize the result based on surface area 0-50, 50-100 and over 100.

Solution:

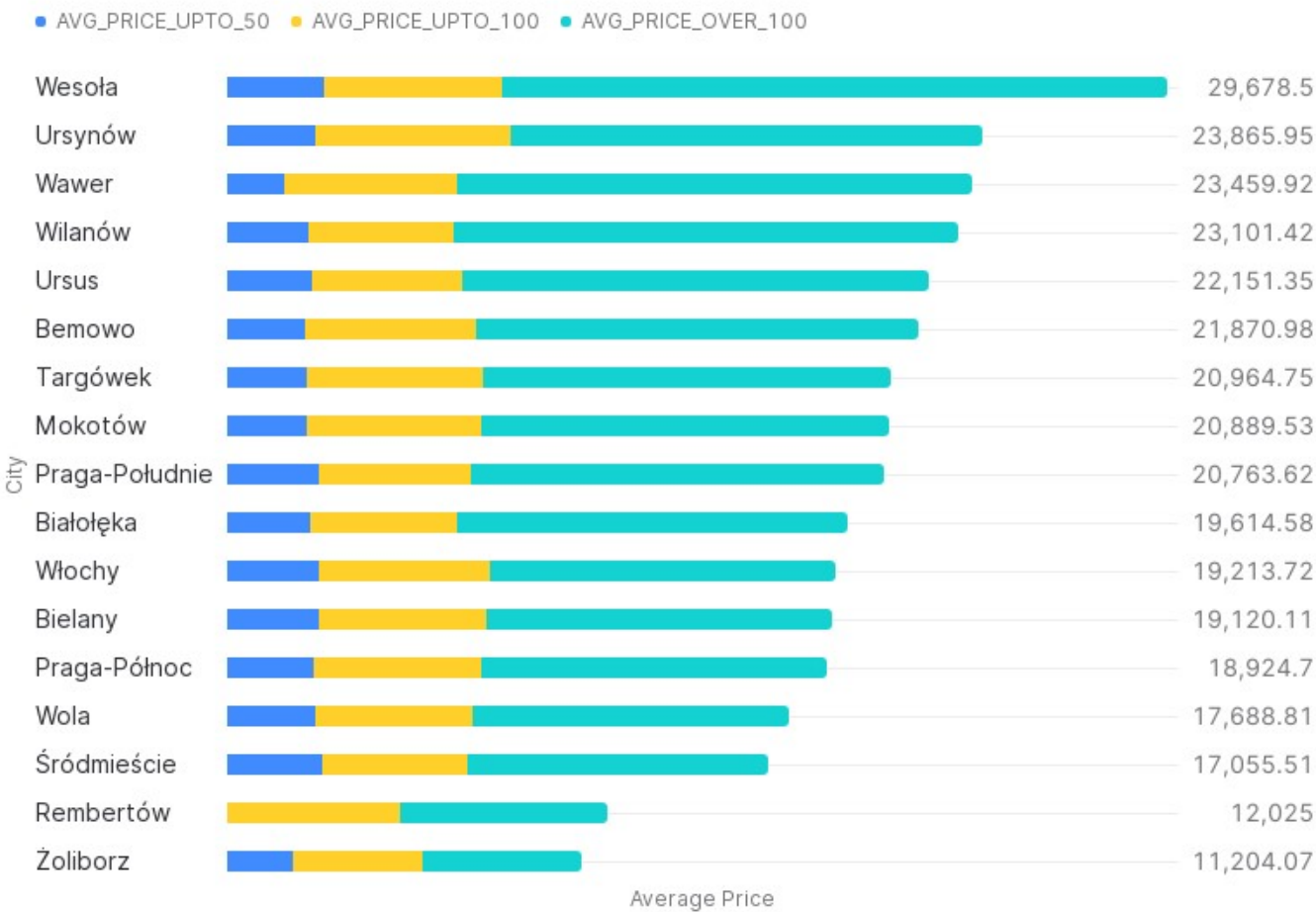
```
WITH cte1 AS
(SELECT a.*
, CASE WHEN surface_new BETWEEN 0 AND 50 THEN '0-50'
  WHEN surface_new BETWEEN 50 AND 100 THEN '50-100'
  WHEN surface_new > 100 THEN '>100'
END AS area_category
FROM OTODOM_DATA_TRANSFORMED a
WHERE city = 'Warszawa'
AND apartment_flag = 'apartment'
AND is_for_sale = 'false'
AND suburb IS NOT NULL ),
cte2 AS
(SELECT suburb
, CASE WHEN area_category = '0-50' THEN avg(price_new) END AS avg_price_upto50
, CASE WHEN area_category = '50-100' THEN avg(price_new) END AS avg_price_upto100
, CASE WHEN area_category = '>100' THEN avg(price_new) END AS avg_price_over100
FROM cte1
GROUP BY suburb,area_category)
SELECT suburb
, ROUND(MAX(avg_price_upto50),2) AS avg_price_upto_50
, ROUND(MAX(avg_price_upto100),2) AS avg_price_upto_100
, ROUND(MAX(avg_price_over100),2) AS avg_price_over_100
FROM cte2
GROUP BY suburb
order BY suburb;
```


Results:

	SUBURB	...	AVG_PRICE_UPTO_50	AVG_PRICE_UPTO_100	AVG_PRICE_OVER_100
1	Bemowo		2468.70	5425.40	13,976.88
2	Białołęka		2,644.91	4,616.93	12,352.74
3	Bielany		2,902.58	5,281.36	10,936.17
4	Mokotów		2507.40	5,493.52	12,888.61
5	Praga-Południe		2,909.24	4,817.33	13,037.05
6	Praga-Północ		2,739.15	5,298.33	10,887.22
7	Rembertów		null	5460.00	6565.00
8	Targówek		2,531.88	5,554.87	12878.00
9	Ursus		2,669.48	4,763.64	14,718.23
10	Ursynów		2,807.69	6,163.42	14,894.84
11	Wawer		1,777.78	5,452.14	16230.00
12	Wesoła		3050.00	5628.50	21000.00
13	Wilanów		2550.00	4,600.75	15,950.67
14	Wola		2,774.19	4,951.66	9,962.96
15	Włochy		2,874.34	5425.80	10,913.58
16	Śródmieście		2,973.91	4594.10	9487.50
17	Żoliborz		2087.40	4,116.67	5000.00

Dashboard:

House_Pricing_Analysis



8. Which are the top 3 most luxurious neighbourhoods in Warsaw? Luxurious neighbourhoods can be defined as suburbs which has the most no of apartments costing over 2M in cost.

Solution:

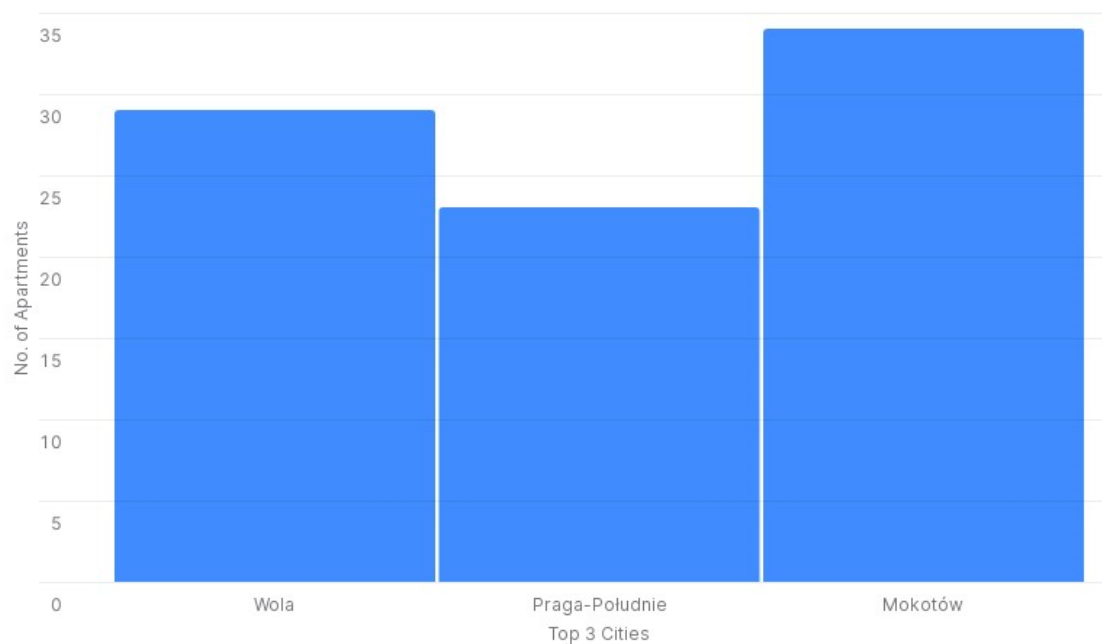
```
SELECT suburb, luxurious_apartments
FROM (SELECT suburb, COUNT(1) luxurious_apartments
, RANK() OVER(ORDER BY luxurious_apartments DESC ) AS ID
from OTODOM_DATA_TRANSFORMED
WHERE city = 'Warszawa'
AND apartment_flag = 'apartment'
AND is_for_sale = 'true'
AND price_new > 2000000
AND suburb IS NOT NULL
GROUP BY suburb) x
WHERE x.ID <= 3;
```

Results:

	SUBURB	LUXURIOUS_APARTMENTS
1	Mokotów	34
2	Wola	29
3	Praga-Południe	23

Dashboard:

House_Pricing_Analysis



9. Most small families would be looking for apartment with 40-60 m2 in size. Identify the top 5 most affordable neighbourhoods in Warsaw.

Solution:

```
SELECT suburb, avg_price, no_of_apartments
FROM (
SELECT suburb, ROUND(AVG(price_new),2) avg_price, COUNT(1) AS no_of_apartments
, RANK() OVER(ORDER BY avg_price ) AS ID
FROM otodom_data_transformed
WHERE city = 'Warszawa'
AND apartment_flag = 'apartment'
AND is_for_sale = 'false'
AND surface_new BETWEEN 40 AND 60
AND suburb IS NOT NULL
GROUP BY suburb) x
WHERE x.ID <= 5;
```

Results:

	SUBURB	AVG_PRICE	... NO_OF_APARTMENTS
1	Wawer	2824.00	10
2	Ursus	2,879.22	23
3	Praga-Północ	2,943.16	10
4	Bielany	3050.50	18
5	Śródmieście	3,059.25	28

Dashboard:

House_Pricing_Analysis



10. Which suburb in Warsaw has the most and least no of private ads?

Solution:

```
SELECT DISTINCT
first_value(suburb||' - '||COUNT(1)) OVER(ORDER BY COUNT(1)) AS leASt_private_ads
, lASt_value(suburb||' - '||COUNT(1)) OVER(ORDER BY COUNT(1)) AS most_private_ads
FROM otodom_data_transformed
WHERE city = 'Warszawa'
AND advertiser_type = 'private'
AND suburb IS NOT NULL
GROUP BY suburb;
```

Results:

	LEAST_PRIVATE_ADS	MOST_PRIVATE_ADS
1	Wesola - 1	Wola - 83

11. What is the average rental price and sale price in some of the major cities in Poland?

Solution:

```
WITH cte AS
(SELECT city
, (CASE WHEN is_for_sale='false' THEN ROUND(AVG(price_new),2) END) AS avg_rental
, (CASE WHEN is_for_sale='true' THEN ROUND(AVG(price_new),2) END) AS avg_sale
FROM otodom_data_transformed
WHERE city IN ('Warszawa', 'Wrocław', 'Kraków', 'Gdańsk', 'Katowice', 'Łódź')
AND apartment_flag = 'apartment'
GROUP BY city, is_for_sale)
SELECT city, MAX(avg_rental) AS avg_rental, MAX(avg_sale) AS avg_sale
FROM cte
GROUP BY city
ORDER BY avg_rental DESC ;
```

Results:

	CITY	AVG_RENTAL	AVG_SALE
1	Wrocław	5,892.84	875,812.79
2	Łódź	5,773.11	810,585.86
3	Kraków	5677.20	854,386.52
4	Warszawa	5,538.72	853,833.53
5	Gdańsk	5,379.07	848,549.77
6	Katowice	5,147.86	945264.00

Dashboard:

House_Pricing_Analysis

