



Start your week with a Sip!

Monday Coffee

SQL PROJECT EXPANSION ANALYSIS

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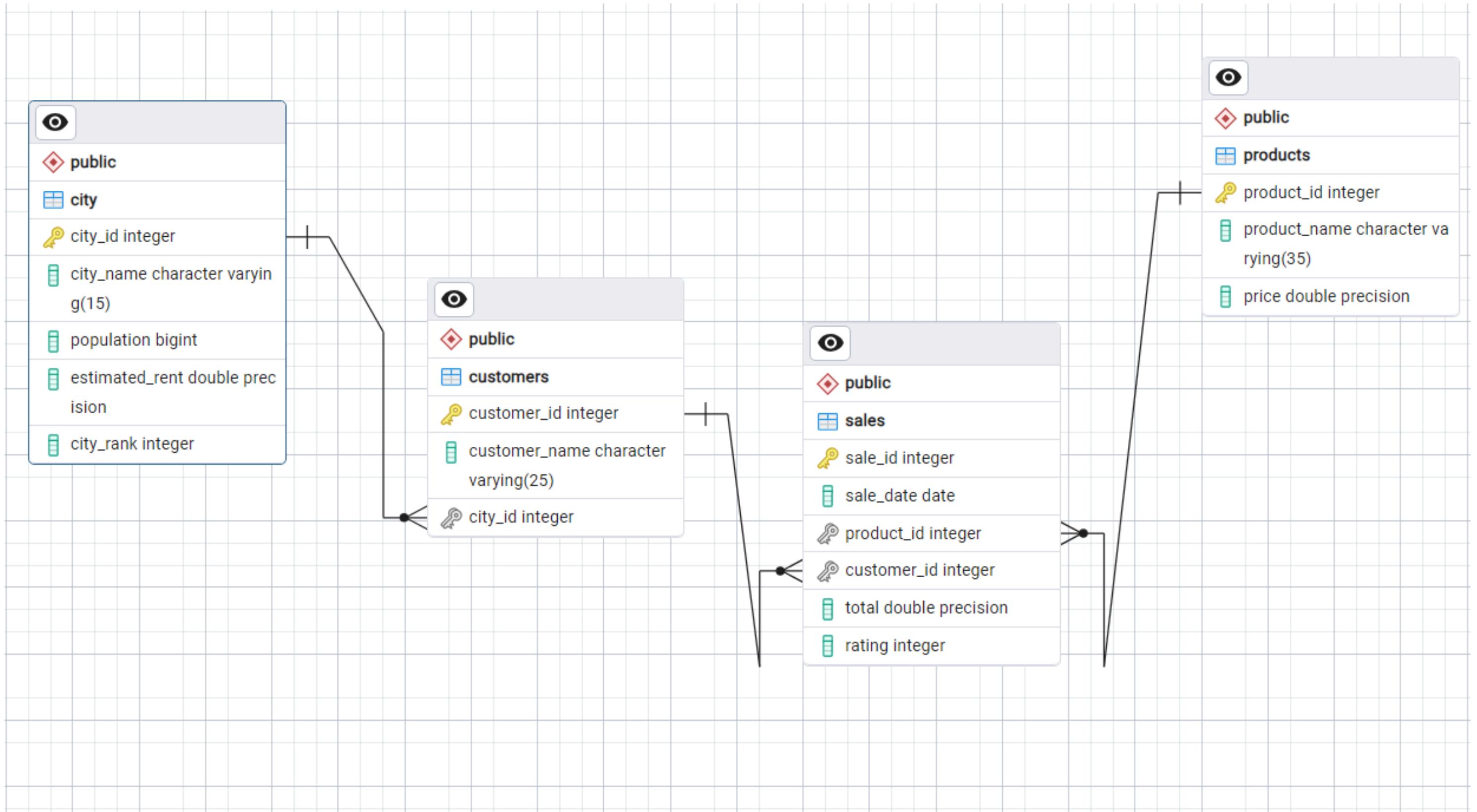
Objectives:

The business aims to expand by opening three coffee shops in India's top three major cities. Since its launch in January 2023, the company has successfully sold its products online and received an overwhelmingly positive response in several cities. As a data analyst, your task is to analyze the sales data and provide insights to recommend the top three cities for this expansion.





Database Schema:





Q.1 Coffee Consumers Count

How many people in each city are estimated to consume coffee, given that 25% of the population does?

```
SELECT city_name, round((population*.25)/1000000,2) AS coffee_consume  
FROM city  
ORDER BY coffee_consumers_in_millions desc
```

	city_name character varying (15)	coffee_consumers_in_millions numeric
1	Delhi	7.75
2	Mumbai	5.10
3	Kolkata	3.73
4	Bangalore	3.08
5	Chennai	2.78
6	Hyderabad	2.50
7	Ahmedabad	2.08
8	Pune	1.88
9	Surat	1.80
10	Jaipur	1.00
11	Lucknow	0.95
12	Indore	0.83
13	Kanpur	0.78
14	Nagpur	0.73





Q.2 Total Revenue from Coffee Sales

What is the total revenue generated from coffee sales across all cities in the last quarter of 2023?

	city_name character varying (15)	total_revenue double precision
1	Pune	434330
2	Chennai	302500
3	Bangalore	270780
4	Jaipur	248580
5	Delhi	238490
6	Kanpur	71890
7	Mumbai	71340
8	Surat	52560
9	Kolkata	51180
10	Nagpur	45810
11	Indore	45670
12	Hyderabad	45060
13	Ahmedabad	43560
14	Lucknow	41550

SELECT

```
    city_name,  
    SUM(total) as total_revenue  
FROM city AS ci  
LEFT JOIN customers AS cu  
ON ci.city_id = cu.city_id  
INNER JOIN sales as s  
ON cu.customer_id = s.customer_id  
WHERE EXTRACT(YEAR from sale_date) = 2023 and EXTRACT(QUARTER from sale_date) = 4  
GROUP BY 1  
ORDER BY 2 DESC
```





Q.3 Sales Count for Each Product

How many units of each coffee product have been sold?

SELECT

```
product_name,  
count(total)  
FROM products AS p  
LEFT JOIN sales AS s  
ON p.product_id = s.product_id  
GROUP BY product_name  
ORDER BY 2 DESC
```

	product_name character varying (35)	count bigint
1	Cold Brew Coffee Pack (6 Bottles)	1326
2	Ground Espresso Coffee (250g)	1271
3	Instant Coffee Powder (100g)	1226
4	Coffee Beans (500g)	1218
5	Tote Bag with Coffee Design	776
6	Vanilla Coffee Syrup (250ml)	762
7	Cold Brew Concentrate (500ml)	312
8	Organic Green Coffee Beans (500...)	307
9	Coffee Art Print	296
10	Flavored Coffee Pods (Pack of 10)	205





Q.4 Average Sales Amount per City

What is the average sales amount per customer in each city?

```

SELECT
    ci.city_name,
    SUM(s.total) AS total_revenue,
    count(distinct s.customer_id) AS total_customers,
    ROUND(SUM(s.total)::numeric/count(distinct s.customer_id)
,2) as avg_rev_per_customer

FROM city AS ci
LEFT JOIN customers AS cu
ON ci.city_id = cu.city_id
INNER JOIN sales as s
ON cu.customer_id = s.customer_id
GROUP BY 1
ORDER BY 4 DESC
  
```

	city_name character varying (15)	total_revenue double precision	total_customers bigint	avg_rev_per_customer numeric
1	Pune	1258290	52	24197.88
2	Chennai	944120	42	22479.05
3	Bangalore	860110	39	22054.10
4	Jaipur	803450	69	11644.20
5	Delhi	750420	68	11035.59
6	Mumbai	235000	27	8703.70
7	Indore	138590	21	6599.52
8	Surat	176540	27	6538.52
9	Hyderabad	131520	21	6262.86
10	Kolkata	171460	28	6123.57
11	Kanpur	213550	35	6101.43
12	Ahmedabad	137690	23	5986.52
13	Nagpur	140050	24	5835.42
14	Lucknow	109400	21	5209.52





Q.5 City Population and Coffee Consumers (25%)

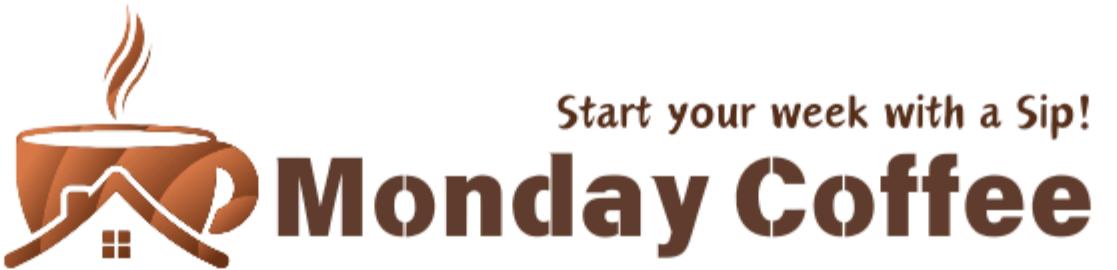
Provide a list of cities along with their populations and estimated coffee consumers.

return city_name, total current cx, estimated coffee consumers (25%)

```
SELECT
    city_name,
    round((population*.25)/1000000,2) as estimated_coffee_consumers,
    count(distinct s.customer_id) as total_current(cx
FROM city AS ci
LEFT JOIN customers AS cu
ON ci.city_id = cu.city_id
LEFT JOIN sales as s
ON cu.customer_id = s.customer_id
group By city_name, ci.population
```

	city_name character varying (15)	estimated_coffee_consumers numeric	total_current(cx bigint
1	Ahmedabad	2.08	23
2	Bangalore	3.08	39
3	Chennai	2.78	42
4	Delhi	7.75	68
5	Hyderabad	2.50	21
6	Indore	0.83	21
7	Jaipur	1.00	69
8	Kanpur	0.78	35
9	Kolkata	3.73	28
10	Lucknow	0.95	21
11	Mumbai	5.10	27
12	Nagpur	0.73	24
13	Pune	1.88	52
14	Surat	1.80	27





Q6 Top Selling Products by City

What are the top 3 selling products in each city based on sales volume?

```

SELECT *
FROM (
  SELECT
    ci.city_name,
    p.product_name,
    COUNT(s.sale_id),
    DENSE_RANK() OVER(PARTITION BY ci.city_name ORDER BY COUNT(s.sale_id) DESC) AS RANK
  FROM sales as s
  JOIN products as p
  ON s.product_id = p.product_id
  JOIN customers as c
  ON c.customer_id = s.customer_id
  JOIN city as ci
  ON ci.city_id = c.city_id
  GROUP BY 1,2
) AS t1
WHERE rank <=3
  
```

	city_name character varying (15)	product_name character varying (35)	count bigint	rank bigint
1	Ahmedabad	Cold Brew Coffee Pack (6 Bottles)	40	1
2	Ahmedabad	Coffee Beans (500g)	35	2
3	Ahmedabad	Instant Coffee Powder (100g)	26	3
4	Bangalore	Cold Brew Coffee Pack (6 Bottles)	197	1
5	Bangalore	Ground Espresso Coffee (250g)	167	2
6	Bangalore	Instant Coffee Powder (100g)	150	3
7	Chennai	Cold Brew Coffee Pack (6 Bottles)	192	1
8	Chennai	Coffee Beans (500g)	181	2
9	Chennai	Instant Coffee Powder (100g)	172	3





Q.7 Customer Segmentation by City

How many unique customers are there in each city who have purchased coffee products?

```
SELECT
    ci.city_name,
    COUNT(DISTINCT c.customer_id) as unique_cx
FROM city as ci
LEFT JOIN
customers as c
ON c.city_id = ci.city_id
JOIN sales as s
ON s.customer_id = c.customer_id
WHERE
    s.product_id BETWEEN 1 AND 14
GROUP BY 1
```

	city_name character varying (15)	unique_cx bigint
1	Ahmedabad	23
2	Bangalore	39
3	Chennai	42
4	Delhi	68
5	Hyderabad	21
6	Indore	21
7	Jaipur	69
8	Kanpur	35
9	Kolkata	28
10	Lucknow	21
11	Mumbai	27
12	Nagpur	24
13	Pune	52
14	Surat	27





Q.8 Average Sale vs Rent

Find each city and their average sale per customer and avg rent per customer?

```
SELECT
    ci.city_name,
    ci.estimated_rent,
    count(distinct s.customer_id) AS total_customers,
    ROUND(SUM(s.total)::numeric/count(distinct s.customer_id),2) as avg_rev_per_customer,
    ROUND(ci.estimated_rent::numeric/count(distinct s.customer_id),2) as avg_rent_per_customer
FROM city AS ci
JOIN customers AS cu
ON ci.city_id = cu.city_id
INNER JOIN sales as s
ON cu.customer_id = s.customer_id
GROUP BY 1,2
ORDER BY 4 DESC
```

	city_name character varying (15)	estimated_rent double precision	total_customers bigint	avg_rev_per_customer numeric	avg_rent_per_customer numeric
1	Pune	15300	52	24197.88	294.23
2	Chennai	17100	42	22479.05	407.14
3	Bangalore	29700	39	22054.10	761.54
4	Jaipur	10800	69	11644.20	156.52
5	Delhi	22500	68	11035.59	330.88
6	Mumbai	31500	27	8703.70	1166.67
7	Indore	6300	21	6599.52	300.00





Q.9 Monthly Sales Growth

Sales growth rate: Calculate the percentage growth (or decline) in sales over different time periods (monthly) by each city

```
WITH
monthly_sales
AS
(
    SELECT
        ci.city_name,
        EXTRACT(MONTH FROM sale_date) as month,
        EXTRACT(YEAR FROM sale_date) as YEAR,
        SUM(s.total) as total_sale
    FROM sales as s
    JOIN customers as c
    ON c.customer_id = s.customer_id
    JOIN city as ci
    ON ci.city_id = c.city_id
    GROUP BY 1, 2, 3
    ORDER BY 1, 3, 2
),
growth_ratio
AS
(
    SELECT
        city_name,
        month,
        year,
        total_sale as cr_month_sale,
        LAG(total_sale, 1) OVER(PARTITION BY city_name ORDER BY year, month) as last_month_sale
    FROM monthly_sales
)
```





SELECT

```
city_name,  
month,  
year,  
cr_month_sale,  
last_month_sale,  
ROUND(  
    (cr_month_sale-last_month_sale)::numeric/last_month_sale::numeric * 100  
, 2  
) as growth_ratio
```

FROM growth_ratio

WHERE

```
last_month_sale IS NOT NULL
```

	city_name character varying (15)	month numeric	year numeric	cr_month_sale double precision	last_month_sale double precision	growth_ratio numeric
1	Ahmedabad	2	2023	4100	3750	9.33
2	Ahmedabad	3	2023	3050	4100	-25.61
3	Ahmedabad	4	2023	4040	3050	32.46
4	Ahmedabad	5	2023	2550	4040	-36.88
5	Ahmedabad	6	2023	2900	2550	13.73
6	Ahmedabad	7	2023	2800	2900	-3.45
7	Ahmedabad	8	2023	4300	2800	53.57
8	Ahmedabad	9	2023	8250	4300	91.86





Q.10 Market Potential Analysis

Identify top 3 city based on highest sales, return city name, total sale, total rent, total customers, estimated coffee consumer

```
WITH
city_table
AS
(
  SELECT
    ci.city_name,
    SUM(s.total) AS total_revenue,
    COUNT(DISTINCT s.customer_id) AS total_customers,
    ROUND(
      SUM(s.total)::numeric/COUNT(DISTINCT s.customer_id)::numeric,2) AS avg_sale_pr_cx
  FROM sales AS s
  JOIN customers AS c
  ON c.customer_id = s.customer_id
  JOIN city AS ci
  ON ci.city_id = c.city_id
  GROUP BY 1
  ORDER BY 2
),
city_rent AS
(SELECT
  city_name,
  estimated_rent,
  ROUND(population * 0.25 /1000000,2) AS estimated_coffee_consumer_in_millions
FROM city
)
```





```
SELECT
    cr.city_name,
    total_revenue,
    cr.estimated_rent AS total_rent,
    ct.total_customers,
    estimated_coffee_consumer_in_millions,
    avg_sale_pr_cx,
    ROUND(estimated_rent :: numeric /  ct.total_customers :: numeric,2) AS avg_rent_per_cx
FROM city_rent as cr
JOIN city_table as ct
ON cr.city_name = ct.city_name
ORDER BY 2 DESC
```

	city_name character varying (15)	total_revenue double precision	total_rent double precision	total_customers bigint	estimated_coffee_consumer_in_millions numeric	avg_sale_pr_cx numeric	avg_rent_per_cx numeric
1	Pune	1258290	15300	52	1.88	24197.88	294.23
2	Chennai	944120	17100	42	2.78	22479.05	407.14
3	Bangalore	860110	29700	39	3.08	22054.10	761.54
4	Jaipur	803450	10800	69	1.00	11644.20	156.52
5	Delhi	750420	22500	68	7.75	11035.59	330.88
6	Mumbai	235000	31500	27	5.10	8703.70	1166.67
7	Kanpur	213550	8100	35	0.78	6101.43	231.43
8	Surat	176540	13500	27	1.80	6538.52	500.00
9	Kolkata	171460	16200	28	3.73	6123.57	578.57





Recommendation:

City 1: Pune

1. Average rent per customer is very low.
2. Highest total revenue.
3. Average sales per customer is also high.

City 2: Delhi

1. Highest estimated coffee consumers at 7.7 million.
2. Highest total number of customers, which is 68.
3. Average rent per customer is 330 (still under 500).

City 3: Jaipur

1. Highest number of customers, which is 69.
2. Average rent per customer is very low at 156.
3. Average sales per customer is better at 11.6k.





Thank You

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