Monday Coffee Data Analysis

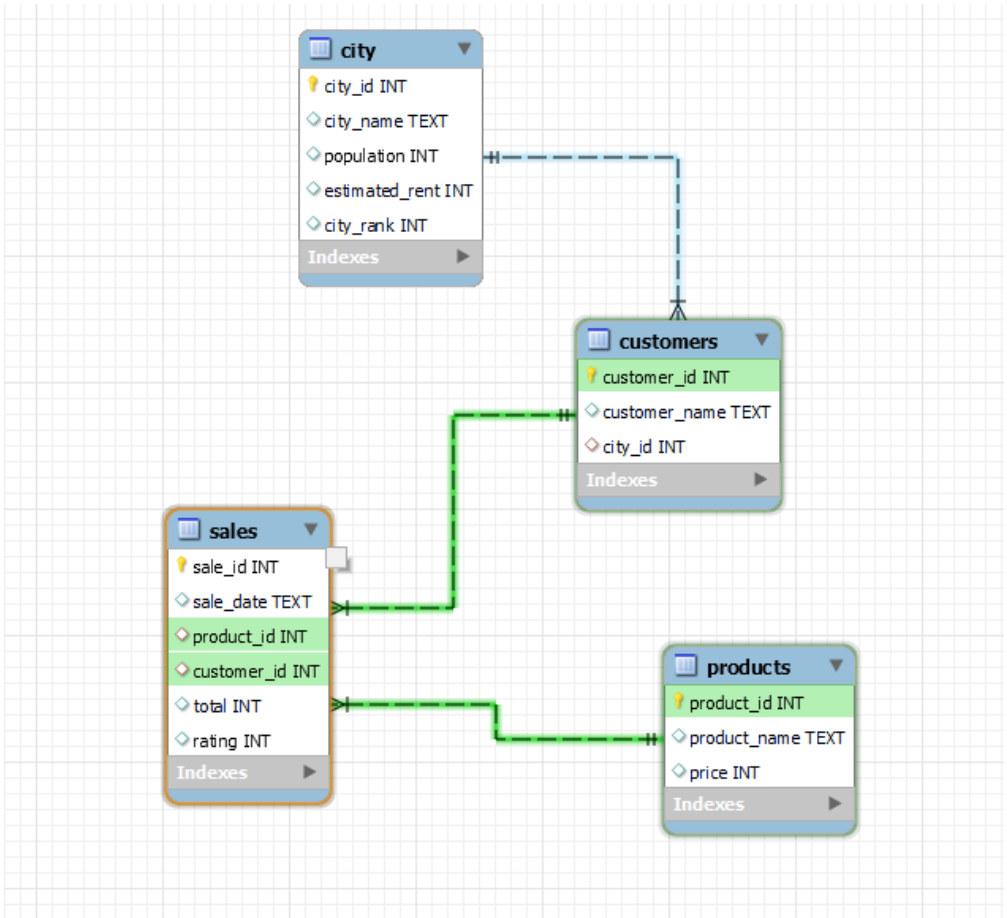
Objective:

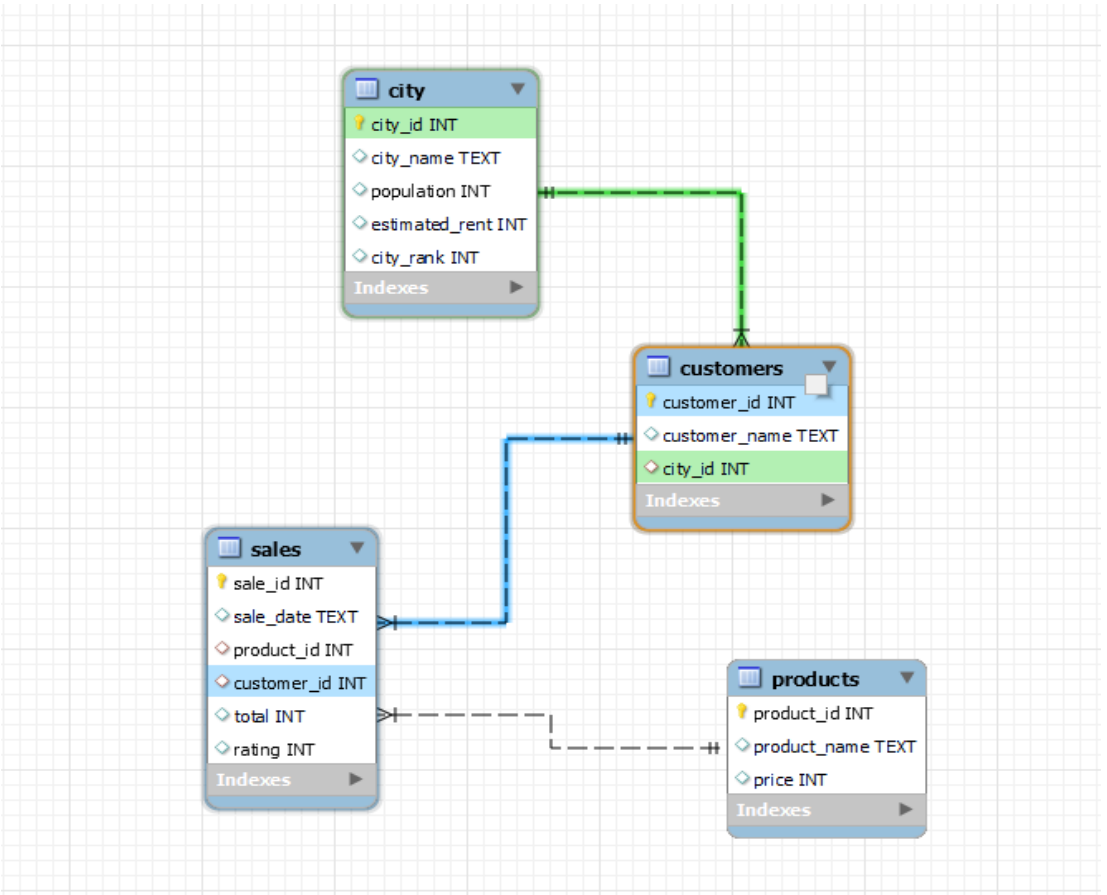
Analyze customer and sales data to understand coffee consumption trends, revenue distribution, and market potential across cities.

Dataset Overview:

- Tables Used : City, Customer, Sales, products.
- Mention key columns in each table

ER Diagram:


city
city_id INT
city_name TEXT
population INT
estimated_rent INT
city_rank INT
Indexes
customers
customer_id INT
customer_name TEXT
city_id INT
Indexes
sales
sale_id INT
sale_date TEXT
product_id INT
customer_id INT
total INT
rating INT
Indexes
products
product_id INT
product_name TEXT
price INT
Indexes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Reports & Data Analysis:

1)Coffee Consumers Count:

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

Code:

```
Select city_name, round((population*0.25/1000000),2) as
coffee_comsume_peoples_in_millions from city order by 2 desc;
```

Output:

city_name	coffee_comsume_peoples_in_millions
Delhi	7.75
Mumbai	5.10
Kolkata	3.73
Bangalore	3.08
Chennai	2.78
Hyderabad	2.50
Ahmedabad	2.08
Pune	1.88
Surat	1.80
Jaipur	1.00
Lucknow	0.95
Indore	0.83
Kanpur	0.78
Nagpur	0.73

2) Total Revenue from Coffee Sales:

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

Code:

```
select city_name, sum(total) as total_revenue  from sales s join customers c
using(customer_id) join city ci using(city_id) where month(sale_date) in (10,11,12) and
year(sale_date)=2023 group by 1order by 2 desc;
```

Output:

city_name	total_revenue
Pune	434330
Chennai	302500
Bangalore	270780
Jaipur	248580
Delhi	238490
Kanpur	71890
Mumbai	71340
Surat	52560
Kolkata	51180
Nagpur	45810
Indore	45670
Hyderabad	45060
Ahmedabad	43560
Lucknow	41550

3) **Sales Count for each Product**

How many units of each coffee product have been sold?

select product_name, count(sale_id) as total_ordersfrom products p left join sales s using(product_id) group by 1 order by 2 desc;

Output:

product_name	total_orders
Cold Brew Coffee Pack (6 Bottles)	1326
Ground Espresso Coffee (250g)	1271
Instant Coffee Powder (100g)	1226
Coffee Beans (500g)	1218
Tote Bag with Coffee Design	776
Vanilla Coffee Syrup (250ml)	762
Cold Brew Concentrate (500ml)	312
Organic Green Coffee Beans (500g)	307
Coffee Art Print	296
Flavored Coffee Pods (Pack of 10)	295
Coffee Drip Bags (10 Bags)	289
Insulated Travel Mug	273
Coffee Gift Hamper	270
Specialty Coffee Subscription	258
Customizable Coffee Coaster Set	258
French Press Coffee Set	257
Caramel Syrup (250ml)	96
Coffee Plant Kit (DIY)	91
Coffee Bean Storage Canister	89
Coffee Recipe Book	88
Mocha Flavored Coffee Mix (200g)	86
Personalized Coffee Spoon	83

4) Average Sales Amount per City:

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

Code:

```
select city_name, round(sum(total)/count(distinct s.customer_id),2) as avg_sales_per_cust
from customers c join city ci using(city_id) join sales s using(customer_id) group by 1  order
by 2 desc;
```

Output:

city_name	avg_sales_per_cust
Pune	24197.88
Chennai	22479.05
Bangalore	22054.10
Jaipur	11644.20
Delhi	11035.59
Mumbai	8703.70
Indore	6599.52
Surat	6538.52
Hyderabad	6262.86
Kolkata	6123.57
Kanpur	6101.43
Ahmedabad	5986.52
Nagpur	5835.42
Lucknow	5209.52

5) City Population and Coffee Consumers

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

Code:

```
with city_tab as(select city_name, round((population*0.25/1000000),2) as
coffee_consumers_in_millionsfrom city),customer_tab as (select       city_name,
count(distinct customer_id) as unique_custfrom sales s join customers c
using(customer_id) join city ct using (city_id) group by 1)select  ct.city_name,
ct.coffee_consumers_in_millions,      cu.unique_cust from city_tab ct join customer_tab
cuon ct.city_name=cu.city_name order by coffee_consumers_in_millions  desc;
```

Output:

city_name	coffee_consumers_in_millions	unique_cust
Delhi	7.75	68
Mumbai	5.10	27
Kolkata	3.73	28
Bangalore	3.08	39
Chennai	2.78	42
Hyderabad	2.50	21
Ahmedabad	2.08	23
Pune	1.88	52
Surat	1.80	27
Jaipur	1.00	69
Lucknow	0.95	21
Indore	0.83	21
Kanpur	0.78	35
Nagpur	0.73	24

6) Top Selling product By City:

What is the top 3 selling product in each city based on sales volumne?

Code:

```
select * from (select p.product_name, ct.city_name, count(s.sale_id) as sales_volumn,
dense_rank() over(partition by ct.city_name order by count(s.sale_id) desc) as rnk from
city ct join customers cu using(city_id) join sales s using(customer_id)  join products p
using(product_id)  group by 1,2)temp1 where rnk<=3 ;
```

Output:

product_name	city_name	sales_volumn	rnk
Cold Brew Coffee Pack (6 Bottles)	Ahmedabad	40	1
Coffee Beans (500g)	Ahmedabad	35	2
Instant Coffee Powder (100g)	Ahmedabad	26	3
Cold Brew Coffee Pack (6 Bottles)	Bangalore	197	1
Ground Espresso Coffee (250g)	Bangalore	167	2
Instant Coffee Powder (100g)	Bangalore	150	3
Cold Brew Coffee Pack (6 Bottles)	Chennai	192	1
Coffee Beans (500g)	Chennai	181	2
Instant Coffee Powder (100g)	Chennai	172	3
Ground Espresso Coffee (250g)	Delhi	183	1
Instant Coffee Powder (100g)	Delhi	170	2
Coffee Beans (500g)	Delhi	161	3

7) Customer Segmentation by City :

How many unique customers are there in each city who have purchase coffee products.

Code:

```
select city_name, count(distinct customer_id) as unique_customer_count   from customers cu  join city ct using (city_id)  join sales s using (customer_id)  join products p using(product_id)  where p.product_id <=14  group by city_name  order by 2 desc;
```

Output:

	city_name	unique_customer_count
▶	Jaipur	69
	Delhi	68
	Pune	52
	Chennai	42
	Bangalore	39
	Kanpur	35
	Kolkata	28
	Mumbai	27
	Surat	27
	Nagpur	24
	Ahmedabad	23
	Hyderabad	21
	Indore	21
	Lucknow	21

8) Averege Sales Vs Rent:

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

Code:

```
with city_tab as(select ci.city_name, sum(s.total) as total_revenue, count(distinct
s.customer_id) as total_cust,      round(sum(s.total)/count(distinct s.customer_id),2) as
avg_sale_per_custfrom sales s join customers c using(customer_id)join city ci
using(city_id)group by 1 order by 2 desc ),city_rent as(select      city_name,
estimated_rent from city)select      cr.city_name,      cr.estimated_rent,      ct.total_cust,
ct.avg_sale_per_cust,      round(cr.estimated_rent/ct.total_cust,2) as
avg_rent_per_custfrom city_rent as cr join city_tab cton cr.city_name=ct.city_nameorder
by 4 desc;
```

Output:

city_name	estimated_rent	total_cust	avg_sale_per_cust	avg_rent_per_cust
Bangalore	29700	39	22054.10	761.54
Jaipur	10800	69	11644.20	156.52
Delhi	22500	68	11035.59	330.88
Mumbai	31500	27	8703.70	1166.67
Indore	6300	21	6599.52	300.00
Surat	13500	27	6538.52	500.00
Hyderabad	22500	21	6262.86	1071.43
Kolkata	16200	28	6123.57	578.57
Kanpur	8100	35	6101.43	231.43
Ahmedabad	14400	23	5986.52	626.09
Nagpur	7200	24	5835.42	300.00
Lucknow	9000	21	5209.52	428.57

9) Monthly Sales Growth:

Sales growth rate: Calculate the percentage growth(or decline) in sales over different time periods(months)

Code:

```
with monthly_sales as(select ci.city_name, month(s.sale_date) as month, year(sale_date) as year
sum(s.total) as total_salefrom sales s join customers c using(customer_id) join city ci using(city_id) group
by ci.city_name,month,year order by 1,3,2),growth_ratio as(select city_name, month, year, total_sale as
current_month_sale, lag(total_sale,1) over(partition by city_name order by year,month) as
last_month_sales from monthly_sales) select  city_name, month, year, current_month_sale,
last_month_sales,round(((current_month_salelast_month_sales)/last_month_sales)*100,2) as
growth_ratiofrom  growth_ratiowhere last_month_sales is not null;
```

Output:

city_name	month	year	current_month_sale	last_month_sales	growth_ratio
Ahmedabad	2	2023	4100	3750	9.33
Ahmedabad	3	2023	3050	4100	-25.61
Ahmedabad	4	2023	4040	3050	32.46
Ahmedabad	5	2023	2550	4040	-36.88
Ahmedabad	6	2023	2900	2550	13.73
Ahmedabad	7	2023	2800	2900	-3.45
Ahmedabad	8	2023	4300	2800	53.57
Ahmedabad	9	2023	8250	4300	91.86
Ahmedabad	10	2023	10950	8250	32.73
Ahmedabad	11	2023	21250	10950	94.06
Ahmedabad	12	2023	11360	21250	-46.54
Ahmedabad	1	2024	12090	11360	6.43

10) Market Potential Analysis:

Idendify top 3 city based on highest sales,return city name,total sales,totel rent,total customers,estimated coffee consumers.

Code:

```
with city_tab as(select ci.city_name, sum(s.total) as total_revenue, count(distinct s.customer_id) as total_cust, round(sum(s.total)/count(distinct s.customer_id),2) as avg_sale_per_custfrom sales s join products p using(product_id)join customers c using(customer_id)join city ci using(city_id)group by 1order by 2 desc ),city_rent as(select city_name, estimated_rent, round((population*0.25)/1000000,2) as estimated_coffee_comsumer_in_million from city)select cr.city_name,  total_revenue, cr.estimated_rent as total_rent, ct.total_cust,  estimated_coffee_comsumer_in_million, ct.avg_sale_per_cust, round(cr.estimated_rent/ct.total_cust,2) as avg_rent_per_custfrom city_rent as cr join city_tab cton cr.city_name=ct.city_nameorder by 2 desc;
```

Output:

city_name	total_revenue	total_rent	total_cust	estimated_coffee_comsumer_in_million	avg_sale_per_cust	avg_rent_per_cust
Pune	1258290	15300	52	1.88	24197.88	294.23
Chennai	944120	17100	42	2.78	22479.05	407.14
Bangalore	860110	29700	39	3.08	22054.10	761.54
Jaipur	803450	10800	69	1.00	11644.20	156.52
Delhi	750420	22500	68	7.75	11035.59	330.88
Mumbai	235000	31500	27	5.10	8703.70	1166.67
Kanpur	213550	8100	35	0.78	6101.43	231.43
Surat	176540	13500	27	1.80	6538.52	500.00
Kolkata	171460	16200	28	3.73	6123.57	578.57
Nagpur	140050	7200	24	0.73	5835.42	300.00
Indore	138590	6300	21	0.83	6599.52	300.00
Ahmedabad	137690	14400	23	2.08	5986.52	626.09

Recommendations:

City 1 --- Pune

i) Avg rent per customer is very less
ii) Highest total revenue
iii) Avg_sales per customer is also high

City 2:--- Delhi

i) Highest estimated coffee consumer which is 7.7M
ii) Highest total customer which is 68
iii) Avg_rent per customer 330 under(500)

City 3:--- Jaipur

i) Highest customer number which is 69
ii) Avg_rent per customer is very less 156
iii) Avg sales per customer is better which is 11.6k

Conclusion:

We identified cities with strong coffee markets, analyzed customer behavior, and recommended cities for expansion or focus.”