SQL PROJECT

Coffee Sales

This project focuses on analyzing coffee sales data using SQL. The goal is to uncover insights into sales trends, customer preferences, and product performance. By writing and executing structured queries, I explored patterns such as top-selling products, peak sales periods, and regional demand. The analysis was performed using MySQL with an emphasis on data cleaning, aggregation, and visualization preparation.

Here are the Queries…..

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

```
select city_name,
(population * 0.25) as coffee_consumers,
city_rank
from city
order by 2 desc;
```

city_name	coffee_consumers	city_rank
Delhi	7750000.00	3
Mumbai	5100000.00	2
Kolkata	3725000.00	7
Bangalore	3075000.00	1
Chennai	2775000.00	6
Hyderabad	2500000.00	4
Ahmedabad	2075000.00	5
Pune	1875000.00	9
Surat	1800000.00	10
Jaipur	1000000.00	8
Lucknow	950000.00	11
Indore	825000.00	14
Kanpur	775000.00	12
Nagpur	725000.00	13

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

```
select ci.city_name,
sum(s.total) as total_revenue
from sales as s join customers as c
on s.customer_id=c.customer_id
join city as ci
on ci.city_id=c.city_id
where year(s.sale_date)=2023 and quarter(s.sale_date)=4
group by 1
order by 2 desc;
```

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

How many units of each coffee product have been sold?

```
select p.product_name,
count(s.sale_id) as sales_count
from sales as s join products as p
on s.product_id=p.product_id
group by p.product_name
order by 2 desc;
```

product_name	sales_count
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
Customizable Coffee Coaster Set	258
Specialty Coffee Subscription	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
Coffee-Themed T-Shirt	82
Reusable Coffee Cup (Eco-friendly)	78
Glass Coffee Jar (500ml)	77
Coffee-Themed Notebook	76
Stainless Steel Tumbler	75
Coffee Mug (Ceramic)	73

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

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

city_name	total_sales	cust_count	avg_sales_per_cust
Pune	1258290	52	24197.88
Chennai	944120	42	22479.05
Bangalore	860110	39	22054.10
Jaipur	803450	69	11644.20
Delhi	750420	68	11035.59
Mumbai	235000	27	8703.70
Kanpur	213550	35	6101.43
Surat	176540	27	6538.52
Kolkata	171460	28	6123.57
Nagpur	140050	24	5835.42
Indore	138590	21	6599.52
Ahmedabad	137690	23	5986.52
Hyderabad	131520	21	6262.86
Lucknow	109400	21	5209.52

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

```
with city_table as(
select city_name,
(population * 0.25) as coffee_consumers
from city) ,customers_table as
(select ci.city_name,
count(c.customer_id) as cnt
from city as ci join customers as c
on ci.city_id=c.city_id
group by ci.city_name)
select ct.city_name,
ct.coffee_consumers,
cust.cnt
from city_table as ct
join customers_table as cust
on cust.city_name=ct.city_name;
```

city_name	coffee_consumers	cnt
Bangalore	3075000.00	39
Chennai	2775000.00	42
Pune	1875000.00	52
Jaipur	1000000.00	69
Delhi	7750000.00	68
Mumbai	5100000.00	27
Hyderabad	2500000.00	21
Ahmedabad	2075000.00	23
Kolkata	3725000.00	28
Surat	1800000.00	27
Lucknow	950000.00	21
Kanpur	775000.00	35
Nagpur	725000.00	24
Indore	825000.00	21

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

```
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 ranking

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 ranking<=3;
```

city_name	product_name	count(s.sale_id)	ranking
Ahmedabad	Cold Brew Coffee Pack (6 Bottles)	40	1
Ahmedabad	Coffee Beans (500g)	35	2
Ahmedabad	Instant Coffee Powder (100g)	26	3
Bangalore	Cold Brew Coffee Pack (6 Bottles)	197	1
Bangalore	Ground Espresso Coffee (250g)	167	2
Bangalore	Instant Coffee Powder (100g)	150	3
Chennai	Cold Brew Coffee Pack (6 Bottles)	192	1
Chennai	Coffee Beans (500g)	181	2
Chennai	Instant Coffee Powder (100g)	172	3
Delhi	Ground Espresso Coffee (250g)	183	1
Delhi	Instant Coffee Powder (100g)	170	2
Delhi	Coffee Beans (500g)	161	3
Hyderabad	Instant Coffee Powder (100g)	36	1
Hyderabad	Cold Brew Coffee Pack (6 Bottles)	28	2
Hyderabad	Ground Espresso Coffee (250g)	27	3
Indore	Instant Coffee Powder (100g)	33	1
Indore	Ground Espresso Coffee (250g)	26	2
Indore	Cold Brew Coffee Pack (6 Bottles)	26	2
Indore	Coffee Beans (500g)	23	3
Jaipur	Cold Brew Coffee Pack (6 Bottles)	178	1
Jaipur	Coffee Beans (500g)	175	2
Jaipur	Instant Coffee Powder (100g)	170	3
Kanpur	Cold Brew Coffee Pack (6 Bottles)	57	1
Kanpur	Ground Espresso Coffee (250g)	55	2
Kanpur	Coffee Beans (500g)	50	3
Kolkata	Ground Espresso Coffee (250g)	45	1
Kolkata	Cold Brew Coffee Pack (6 Bottles)	44	2
Kolkata	Coffee Beans (500g)	38	3
Lucknow	Instant Coffee Powder (100g)	28	1
Lucknow	Coffee Beans (500g)	25	2
Lucknow	Cold Brew Coffee Pack (6 Bottles)	23	3
Lucknow	Ground Espresso Coffee (250g)	23	3
Mumbai	Ground Espresso Coffee (250g)	62	1
Mumbai	Instant Coffee Powder (100g)	60	2
Mumbai	Cold Brew Coffee Pack (6 Bottles)	53	3
Nagpur	Ground Espresso Coffee (250g)	39	1
Nagpur	Instant Coffee Powder (100g)	29	2
Nagpur	Cold Brew Coffee Pack (6 Bottles)	28	3
Nagpur	Coffee Beans (500g)	28	3
Pune	Cold Brew Coffee Pack (6 Bottles)	259	1
Pune	Ground Espresso Coffee (250g)	254	2
Pune	Instant Coffee Powder (100g)	245	3
Surat	Coffee Beans (500g)	48	1
Surat	Cold Brew Coffee Pack (6 Bottles)	45	2
Surat	Ground Espresso Coffee (250g)	41	3

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

```
select ci.city_name,count(distinct c.customer_id)
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	count(distinct c.customer_id)
Ahmedabad	23
Bangalore	39
Chennai	42
Delhi	68
Hyderabad	21
Indore	21
Jaipur	69
Kanpur	35
Kolkata	28
Lucknow	21
Mumbai	27
Nagpur	24
Pune	52
Surat	27

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

```
with city_table as
(select ci.city_name,sum(s.total) ,count(distinct c.customer_id) as cnt
,round((sum(s.total)/count(distinct c.customer_id)),2)as avg_sale
from city as ci join customers as c
on ci.city_id=c.city_id
join sales as s
on s.customer_id=c.customer_id
group by ci.city_name
order by 2 desc),
city_rent as(
```

```
select city_name,estimated_rent
from city )
select cr.city_name, cr.estimated_rent , ct.cnt , ct.avg_sale,
round((cr.estimated_rent/ct.cnt),2 )as avg_rent_per_cust
from city_rent as cr join city_table as ct
on cr.city_name=ct.city_name
order by 5 desc;
```

city_name	estimated_rent	cnt	avg_sale	avg_rent_per_cust
Mumbai	31500	27	8703.70	1166.67
Hyderabad	22500	21	6262.86	1071.43
Bangalore	29700	39	22054.10	761.54
Ahmedabad	14400	23	5986.52	626.09
Kolkata	16200	28	6123.57	578.57
Surat	13500	27	6538.52	500.00
Lucknow	9000	21	5209.52	428.57
Chennai	17100	42	22479.05	407.14
Delhi	22500	68	11035.59	330.88
Nagpur	7200	24	5835.42	300.00
Indore	6300	21	6599.52	300.00
Pune	15300	52	24197.88	294.23
Kanpur	8100	35	6101.43	231.43
Jaipur	10800	69	11644.20	156.52

Calculate the percentage growth (or decline) in sales over different time periods (monthly)?

(using lag for comparison)

```
with monthly_sales as(
select ci.city_name,month(s.sale_date) as mnth ,year(s.sale_date) as
yr,sum(s.total) as total_sale
from sales as s join customers as c
on s.customer_id=c.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 ,mnth,yr,total_sale as curr_month_sale,
lag(total_sale,1) over(partition by city_name order by yr,mnth) as last_month_sale
from monthly_sales)
select city_name,
mnth,
yr,
curr_month_sale,
last_month_sale,
round(((curr_month_sale-last_month_sale)/last_month_sale*100),2) as growth_ratio
from growth_ratio
where last_month_sale is not null;
```

city_name	mnth	yr	curr_month_sale	last_month_sale	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
Ahmedabad	2	2024	10900	12090	-9.84
Ahmedabad	3	2024	14000	10900	28.44
Ahmedabad	4	2024	3950	14000	-71.79
Ahmedabad	5	2024	5250	3950	32.91
Ahmedabad	6	2024	3300	5250	-37.14
Ahmedabad	7	2024	2700	3300	-18.18
Ahmedabad	8	2024	3550	2700	31.48

Ahmedabad	9	2024	2650	3550	-25.35
Bangalore	2	2023	24750	36890	-32.91
Bangalore	3	2023	26120	24750	5.54
Bangalore	4	2023	23520	26120	-9.95
Bangalore	5	2023	37790	23520	60.67
Bangalore	6	2023	37790	37790	0.00
Bangalore	7	2023	33120	37790	-12.36
Bangalore	8	2023	31050	33120	-6.25
Bangalore	9	2023	71700	31050	130.92
Bangalore	10	2023	102050	71700	42.33
Bangalore	11	2023	106100	102050	3.97
Bangalore	12	2023	62630	106100	-40.97
Bangalore	1	2024	48850	62630	-22.00
Bangalore	2	2024	60650	48850	24.16
Bangalore	3	2024	57500	60650	-5.19
Bangalore	4	2024	12900	57500	-77.57
Bangalore	5	2024	17850	12900	38.37
Bangalore	6	2024	16600	17850	-7.00

And so on……

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
c.customer_id) as cnt ,round((sum(s.total)/count(distinct c.customer_id)),2)as
avg_sale

from city as ci join customers as c

on ci.city_id=c.city_id

join sales as s

on s.customer_id=c.customer_id

group by ci.city_name

order by 2 desc),

city_rent as(

select city_name,estimated_rent,

population*0.25 as esti_coffee_consumer

from city )

select cr.city_name,
```

```
total_revenue,
 cr.estimated_rent as total_rent,
 esti_coffee_consumer,
 ct.cnt , ct.avg_sale,
round((cr.estimated_rent/ct.cnt),2 )as avg_rent_per_cust
from city_rent as cr join city_table as ct
on cr.city_name=ct.city_name
order by 2;
```

city_name	total_revenue	total_rent	esti_coffee_consumer	cnt	avg_sale	avg_rent_per_cust
Lucknow	109400	9000	950000.00	21	5209.52	428.57
Hyderabad	131520	22500	2500000.00	21	6262.86	1071.43
Ahmedabad	137690	14400	2075000.00	23	5986.52	626.09
Indore	138590	6300	825000.00	21	6599.52	300.00
Nagpur	140050	7200	725000.00	24	5835.42	300.00
Kolkata	171460	16200	3725000.00	28	6123.57	578.57
Surat	176540	13500	1800000.00	27	6538.52	500.00
Kanpur	213550	8100	775000.00	35	6101.43	231.43
Mumbai	235000	31500	5100000.00	27	8703.70	1166.67
Delhi	750420	22500	7750000.00	68	11035.59	330.88
Jaipur	803450	10800	1000000.00	69	11644.20	156.52
Bangalore	860110	29700	3075000.00	39	22054.10	761.54
Chennai	944120	17100	2775000.00	42	22479.05	407.14
Pune	1258290	15300	1875000.00	52	24197.88	294.23

1.Pune

less avg. rent , high total revenue ,high avg._sale

2.Delhi

high coffee cons. , high cnt , less avg. rent

3.Jaipur

high cnt , less avg. rent per cnt ,avg. sale per cnt