Supply Chain Management

(To Retrieve SQL Queries for sales and Revenue)

Recommended Queries :-

Sales & Revenue Analysis

1. Total Revenue, Total Orders, Total Quantity Sold
➤ Measure overall business scale.

2. Sales Trend by Product Type
➤ Identify peak Product and trends.

3. Which SKUs are top-selling based on quantity and revenue
➤ Pinpoint best-sellers.

4. What is the average price per product type
➤ Find which type of product drive most revenue.

5. Sales by Region
➤ Discover regional demand patterns.

Inventory & Supply Chain

6. Which products have the lowest stock levels and need replenishment

7. How do stock levels vary across product types or SKUs

8. What are the average lead times per supplier or product

9. Which suppliers provide the highest production volumes

10. What is the relationship between lead time and stock availability

Logistics & Shipping

11. Which transportation modes (Air, Road, Rail) are most used, and what are their costs

12. Which shipping carriers or routes incur the highest shipping costs

13. What is the average shipping time per transportation mode

14. Which locations (cities) are associated with the highest logistics costs

Manufacturing Analysis

15. What are the average manufacturing costs by product type

16. Which products or SKUs have the longest manufacturing lead times

17. Ranking SKUs by Manufacturing Cost

18. What are the inspection results (pass/fail/pending) by product type or SKU

Customer & Demand Insights

19. What is the distribution of customer demographics (Male, Female, Non-binary, Unknown)

20. Which cities have the highest number of customers, and what is their averag order revenue

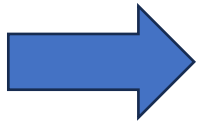
Data Cleaning :- Changed Column Names

Syntax:- alter table Table_name
change `old column` new_column data type;

Example:- alter table supply_chain_data
change `Product type` product_type text;

Before

Field	Type	Null	Key	Default	Extra
Product type	text	YES		NULL	
SKU	text	YES		NULL	
Price	double	YES		NULL	
Availability	int	YES		NULL	
Number of products sold	int	YES		NULL	
Revenue generated	double	YES		NULL	
Customer demographics	text	YES		NULL	
Stock levels	int	YES		NULL	
Lead times	int	YES		NULL	
Order quantities	int	YES		NULL	
Shipping times	int	YES		NULL	
Shipping carriers	text	YES		NULL	
Shipping costs	double	YES		NULL	
Supplier name	text	YES		NULL	
Location	text	YES		NULL	
Lead time	int	YES		NULL	
Production volumes	int	YES		NULL	
Manufacturing lead time	int	YES		NULL	
Manufacturing costs	double	YES		NULL	
Inspection results	text	YES		NULL	
Defect rates	double	YES		NULL	
Transportation modes	text	YES		NULL	
Routes	text	YES		NULL	
Costs	double	YES		NULL	



After

Field	Type	Null	Key	Default	Extra
product_type	text	YES		NULL	
sku_id	varchar(50)	YES		NULL	
Price	double	YES		NULL	
Availability	int	YES		NULL	
products_sold	int	YES		NULL	
revenue_generated	decimal(10,2)	YES		NULL	
customer_demographics	text	YES		NULL	
stock_levels	int	YES		NULL	
lead_times	int	YES		NULL	
order_quantities	int	YES		NULL	
Shipping_times	int	YES		NULL	
shipping_carriers	text	YES		NULL	
shipping_costs	double	YES		NULL	
supplier_name	text	YES		NULL	
Location	text	YES		NULL	
lead_time	int	YES		NULL	
production_volumes	int	YES		NULL	
manufacturing_lead_time	int	YES		NULL	
manufacturing_costs	double	YES		NULL	
Inspection_results	text	YES		NULL	
defect_rates	double	YES		NULL	
transportation_modes	text	YES		NULL	
Routes	text	YES		NULL	
Costs	double	YES		NULL	

1. Total Revenue, Total Orders, Total Quantity Sold

```
select round(sum(revenue_generated)) as total_revenue,
count(distinct order_quantities) as total_orders,
count(products_sold) as total_Qty_sold
from supply_chain_data;
```

Filter Rows: | Export: | Wrap Cell Content:

total_revenue	total_orders	total_Qty_sold
577605	61	100

2. Sales Trend by Product Type

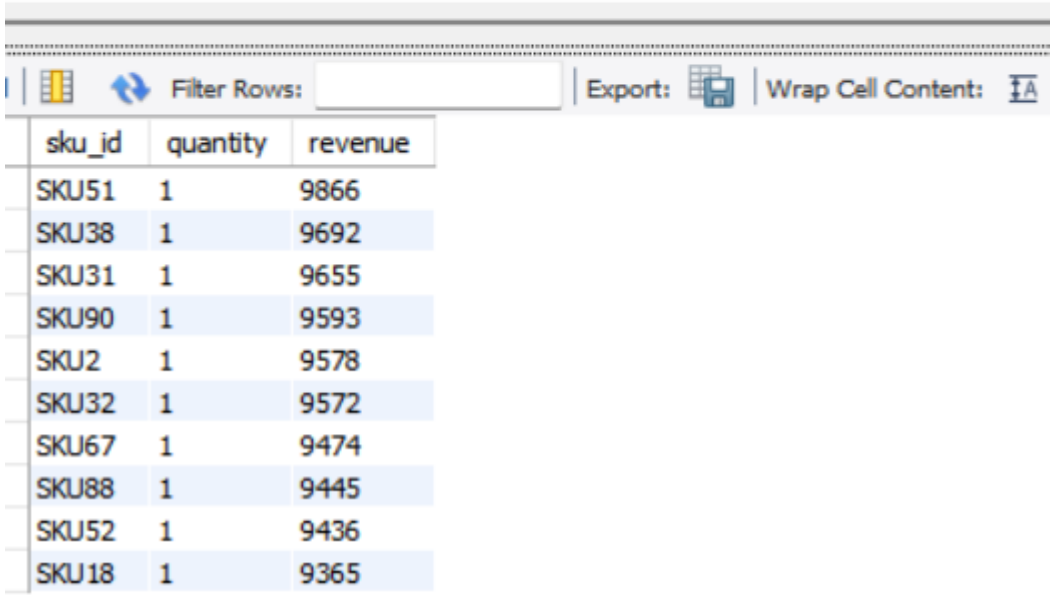
```
select product_type,
round(sum(revenue_generated)) as total_revenue,
count(products_sold) as total_units_sold
from supply_chain_data
group by product_type
order by total_revenue desc;
```

Filter Rows: | Export: | Wrap Cell Content:

product_type	total_revenue	total_units_sold
skincare	241628	40
haircare	174455	34
cosmetics	161521	26

3. Which SKUs are top-selling based on quantity and revenue

```
select sku_id,
count(order_quantities) as quantity,
round(sum(revenue_generated)) as revenue
from supply_chain_data
group by sku_id
order by revenue desc
limit 10;
```

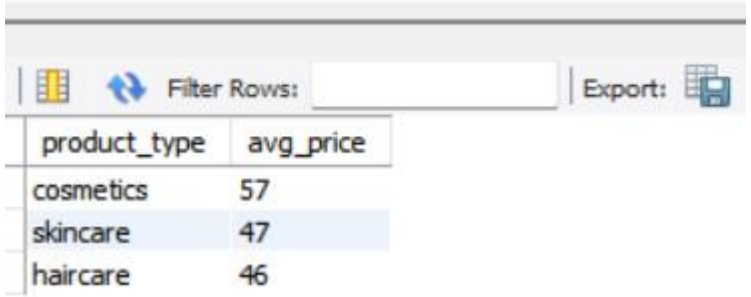


Filter Rows: | Export: | Wrap Cell Content:

sku_id	quantity	revenue
SKU51	1	9866
SKU38	1	9692
SKU31	1	9655
SKU90	1	9593
SKU2	1	9578
SKU32	1	9572
SKU67	1	9474
SKU88	1	9445
SKU52	1	9436
SKU18	1	9365

4. What is the average price per product type

```
select distinct product_type,
round(avg(price)) as avg_price
from supply_chain_data
group by product_type
order by avg_price desc;
```

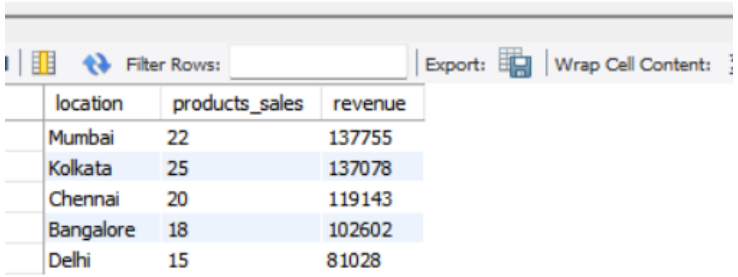


Filter Rows: | Export:

product_type	avg_price
cosmetics	57
skincare	47
haircare	46

5. Sales by Region

```
select distinct location,
count(products_sold) as products_sales,
round(sum(revenue_generated)) as revenue
from supply_chain_data
group by location
order by revenue desc;
```



Filter Rows: | Export: | Wrap Cell Content:

location	products_sales	revenue
Mumbai	22	137755
Kolkata	25	137078
Chennai	20	119143
Bangalore	18	102602
Delhi	15	81028

6. Which products have the lowest stock levels and need replenishment

```
select  sku_id,
product_type,
stock_levels
from supply_chain_data
order by stock_levels asc
limit 10;
```

Filter Rows: | Exp

sku_id	product_type	stock_levels
SKU68	haircare	0
SKU2	haircare	1
SKU34	skincare	1
SKU16	skincare	2
SKU24	haircare	4
SKU47	skincare	4
SKU33	cosmetics	4
SKU4	skincare	5
SKU87	haircare	5
SKU8	cosmetics	5

7.How do stock levels vary across product types or SKUs

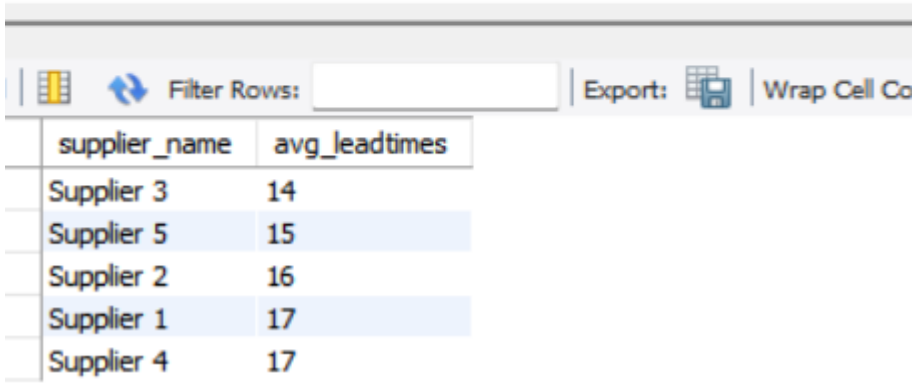
```
select product_type,
round(avg(stock_levels)) as avg_stock_levels,
min(stock_levels) as min_stock_levels,
max(stock_levels) as max_stock_levels,
sum(stock_levels) as total_stock_levels
from supply_chain_data
group by product_type
order by avg_stock_levels;
```

Filter Rows: | Export: | Wrap Cell Content:

product_type	avg_stock_levels	min_stock_levels	max_stock_levels	total_stock_levels
skincare	40	1	96	1608
haircare	48	0	100	1644
cosmetics	59	4	100	1525

8.What are the average lead times per supplier or product

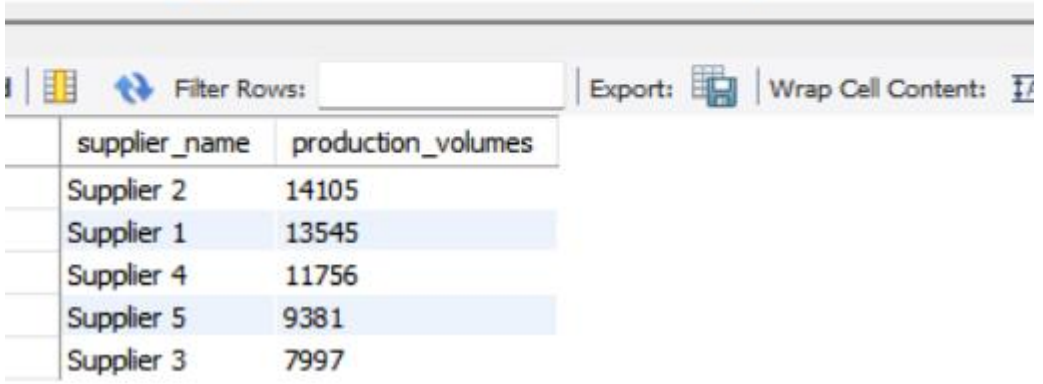
```
select
supplier_name,
round(avg(lead_times)) as avg_leadtimes
from supply_chain_data
group by supplier_name
order by avg_leadtimes;
```



supplier_name	avg_leadtimes
Supplier 3	14
Supplier 5	15
Supplier 2	16
Supplier 1	17
Supplier 4	17

9. Which suppliers provide the highest production volumes

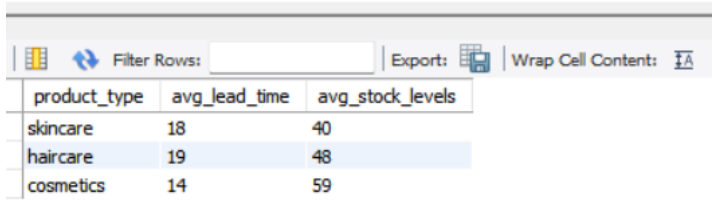
```
select distinct supplier_name,
sum(production_volumes) as production_volumes
from supply_chain_data
group by supplier_name
order by production_volumes desc;
```



supplier_name	production_volumes
Supplier 2	14105
Supplier 1	13545
Supplier 4	11756
Supplier 5	9381
Supplier 3	7997

10. What is the relationship between lead time and stock availability

```
select  product_type,
round(avg(lead_time)) as avg_lead_time,
round(avg(stock_levels)) as avg_stock_levels
from supply_chain_data
group by product_type
order by avg_stock_levels;
```



product_type	avg_lead_time	avg_stock_levels
skincare	18	40
haircare	19	48
cosmetics	14	59

11. Which transportation modes are most used, and what are their costs

```
select transportation_modes,
round(sum(Costs)) as cost
from supply_chain_data
group by transportation_modes
order by cost;
```

Filter Rows: Export:

transportation_modes	cost
Sea	7103
Air	14605
Rail	15169
Road	16048

12. Which shipping carriers or routes incur the highest shipping costs

```
select shipping_carriers,
round(sum(shipping_costs)) as shipping_cost
from  supply_chain_data
group by shipping_carriers
order by shipping_cost;
```

Filter Rows: Export: Wrap Cell Content:

shipping_carriers	shipping_cost
Carrier A	156
Carrier C	162
Carrier B	237

13. What is the average shipping time per transportation mode

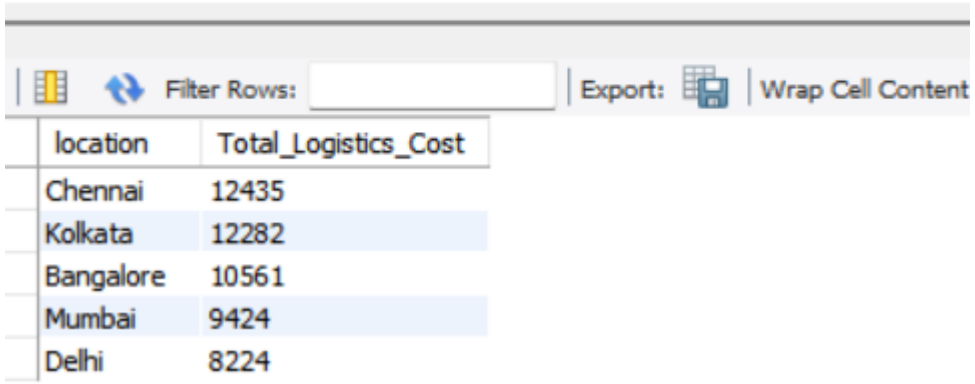
```
select transportation_modes,
concat(round(avg(shipping_times)),' days') as avg_shipping_time
from supply_chain_data
group by transportation_modes;
```

Filter Rows: Export: Wrap Cell Content:

transportation_modes	avg_shipping_time
Road	5 days
Air	5 days
Rail	7 days
Sea	7 days

14. Which locations are associated with the highest logistics costs

```
select location,
round(sum(costs)) as Total_Logistics_Cost
from supply_chain_data
group by location
order by Total_Logistics_Cost desc;
```

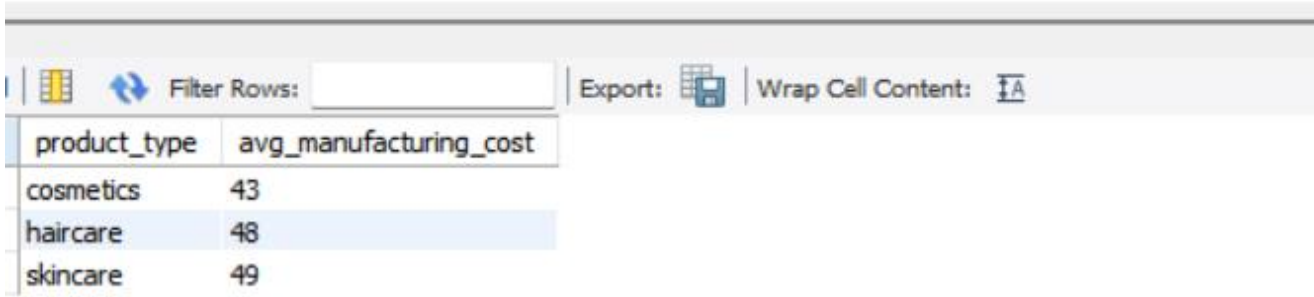


Filter Rows: | Export: | Wrap Cell Content

location	Total_Logistics_Cost
Chennai	12435
Kolkata	12282
Bangalore	10561
Mumbai	9424
Delhi	8224

15.What are the average manufacturing costs by product type

```
select product_type,
round(avg(manufacturing_costs)) as avg_manufacturing_cost
from supply_chain_data
group by product_type
order by avg_manufacturing_cost;
```

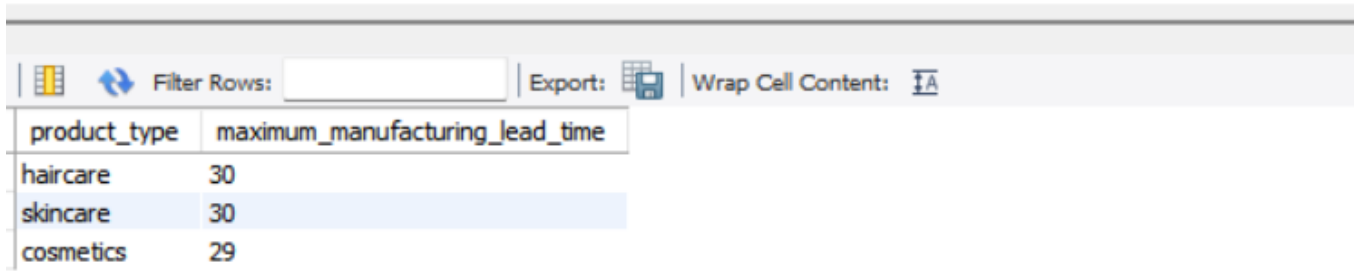


Filter Rows: | Export: | Wrap Cell Content:

product_type	avg_manufacturing_cost
cosmetics	43
haircare	48
skincare	49

16. Which products or SKUs have the longest manufacturing lead times

```
select product_type,
max(manufacturing_lead_time) as maximum_manufacturing_lead_time
from supply_chain_data
group by product_type;
```



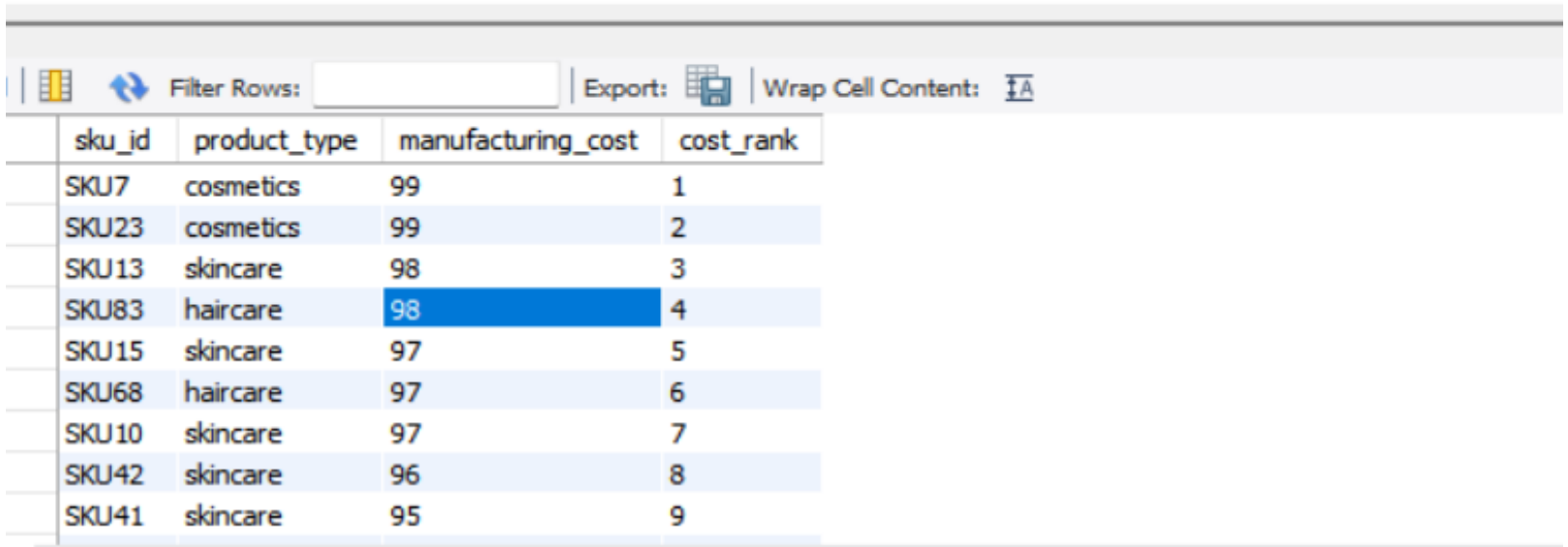
Filter Rows: | Export: | Wrap Cell Content:

product_type	maximum_manufacturing_lead_time
haircare	30
skincare	30
cosmetics	29

17. Ranking SKUs by Manufacturing Cost

18. What are the inspection results (pass/fail/pending) by product type or SKU

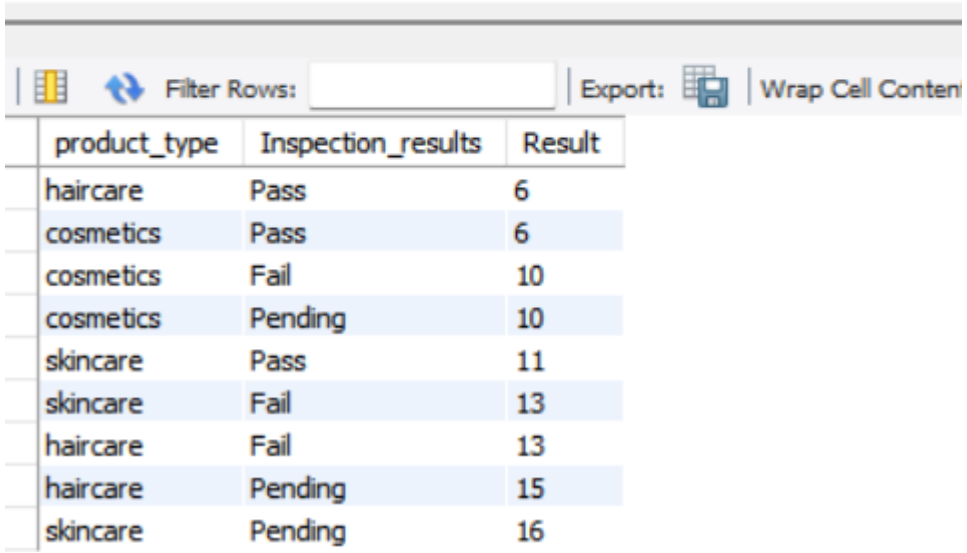
```
select sku_id,
product_type,
round(manufacturing_costs) as manufacturing_cost,
rank () over(order by manufacturing_costs desc, sku_id) as cost_rank
from supply_chain_data;
```



sku_id	product_type	manufacturing_cost	cost_rank
SKU7	cosmetics	99	1
SKU23	cosmetics	99	2
SKU13	skincare	98	3
SKU83	haircare	98	4
SKU15	skincare	97	5
SKU68	haircare	97	6
SKU10	skincare	97	7
SKU42	skincare	96	8
SKU41	skincare	95	9

18. What are the inspection results by product type or SKU

```
select product_type,
Inspection_results,
count(*) as Result
from supply_chain_data
group by product_type, Inspection_results
order by Result;
```

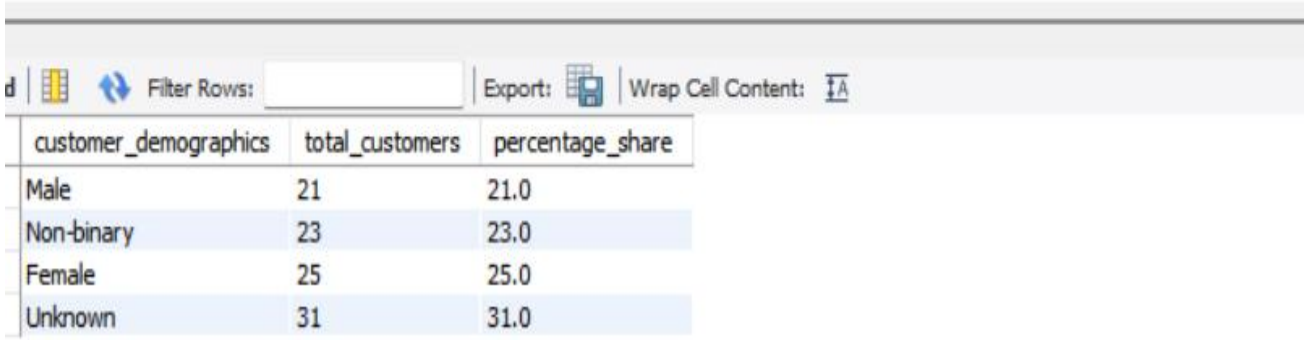


Filter Rows: Export: Wrap Cell Conten

product_type	Inspection_results	Result
haircare	Pass	6
cosmetics	Pass	6
cosmetics	Fail	10
cosmetics	Pending	10
skincare	Pass	11
skincare	Fail	13
haircare	Fail	13
haircare	Pending	15
skincare	Pending	16

19. What is the distribution of customer demographics

```
select customer_demographics,
count(*) as total_customers,
round(count(*) * 100.0 / sum(count(*)) over (), 1) as percentage_share
from  supply_chain_data
group by customer_demographics
order by percentage_share;
```

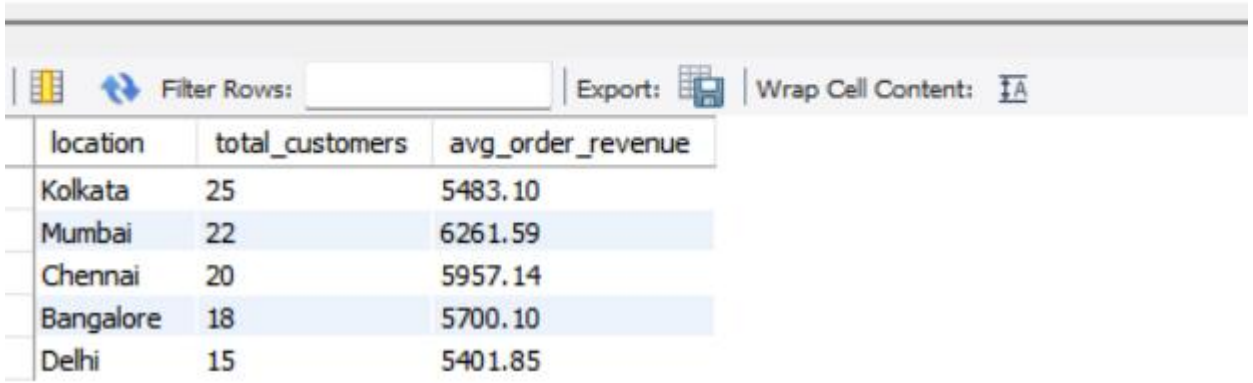


Filter Rows: Export: Wrap Cell Content:

customer_demographics	total_customers	percentage_share
Male	21	21.0
Non-binary	23	23.0
Female	25	25.0
Unknown	31	31.0

20.Which cities have the highest number of customers, and what is their average order revenue

```sql
select location,
count(*) AS total_customers,
round(avg(revenue_generated), 2) as avg_order_revenue
from supply_chain_data
group by location
order by total_customers desc;
```



location	total_customers	avg_order_revenue
Kolkata	25	5483.10
Mumbai	22	6261.59
Chennai	20	5957.14
Bangalore	18	5700.10
Delhi	15	5401.85