```
-------Sales & Performance:
--1. What are the total sales over time?
SELECT
    EXTRACT(YEAR FROM Order_Date) AS year,
    SUM(sales) AS total_sales
FROM orders
GROUP BY year
ORDER BY year;
```

Query Result

#	year	total_sales
1	2015	479856.208100001
2	2016	459436.0054000001
3	2017	600192.550000001
4	2018	722052.0192000001

```
--2. Which regions generate the most revenue?
SELECT Region, SUM(sales) AS total_sales
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
GROUP BY Region
ORDER BY total_sales DESC;
```

Query Result

#	region	total_sales
1	West	744293.5516999995
2	East	606351.137500001
3	Central	514251.4722000008
4	South	396640.62130000023

```sql
--3. Which product categories and subcategories are the best sellers?
SELECT   p.Category,p.Sub_Category, SUM(o.sales) AS total_sales
FROM orders o
JOIN Products p ON o.Product_ID = p.Product_ID
GROUP BY p.Category, p.Sub_Category
ORDER BY total_sales DESC
limit 5;
```

Query Result

#	category	sub_category	total_sales
1	Technology	Phones	327782.44800000027
2	Furniture	Chairs	322822.7310000008
3	Office Supplies	Storage	219142.66000000012
4	Furniture	Tables	200132.35100000014
5	Office Supplies	Binders	199761.56699999998

```sql
--4. How do sales trends vary monthly or yearly?
SELECT
    EXTRACT(YEAR FROM Order_Date) AS year,
    TO_CHAR(Order_Date, 'Month') AS month_name,
    SUM(sales) AS total_sales
FROM orders
GROUP BY year, month_name
ORDER BY year, MIN(Order_Date);
```

Query Result

#	year	month_name	total_sales
1	2015	January	14205.706999999997
2	2015	February	4619.892
3	2015	March	55205.79700000003
4	2015	April	27906.854999999992
5	2015	May	23644.303
6	2015	June	34322.93560000002
7	2015	July	33781.543
8	2015	August	27117.536499999995
9	2015	September	81623.52679999998
10	2015	October	31453.39299999999
11	2015	November	77907.66070000001
12	2015	December	68167.0585
13	2016	January	18066.957599999994
14	2016	February	11951.411
15	2016	March	32339.31839999999
16	2016	April	34154.468499999995
17	2016	May	29959.530499999997
18	2016	June	23599.374
19	2016	July	28608.25899999999
20	2016	August	36818.34219999999
21	2016	September	63133.606000000036
22	2016	October	31011.737500000014
23	2016	November	75249.39950000004
24	2016	December	74543.60120000008
25	2017	January	18542.490999999996
26	2017	February	22978.815000000002
27	2017	March	51165.05900000002
28	2017	April	38679.76699999998
29	2017	May	56656.90799999999
30	2017	June	39724.48599999998
31	2017	July	38320.78299999997
32	2017	August	30542.2003

33	2017	September	69193.39089999997
34	2017	October	59583.03300000001
35	2017	November	79066.4958
36	2017	December	95739.12100000001
37	2018	January	43476.47399999999
38	2018	February	19920.997399999997
39	2018	March	58863.412799999984
40	2018	April	35541.91010000001
41	2018	May	43825.98219999999
42	2018	June	48190.7277
43	2018	July	44825.10400000001
44	2018	August	62837.84799999998
45	2018	September	86152.88800000004
46	2018	October	77448.13119999997
47	2018	November	117938.15500000001
48	2018	December	83030.3888

```sql
--5. What are the top-selling products?
SELECT p.Product_ID, p.Product_Name, SUM(o.sales) AS total_sales
FROM orders o
JOIN Products p ON o.Product_ID = p.Product_ID
GROUP BY p.Product_ID, p.Product_Name
ORDER BY total_sales DESC
LIMIT 10;
```

Query Result

#	product_id	product_name	total_sales
1	TEC-CO-10004722	Canon imageCLASS 2200 Advanced Copier	61599.824
2	OFF-BI-10003527	Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind	27453.384
3	TEC-MA-10002412	Cisco TelePresence System EX90 Videoconferencing Unit	22638.48
4	FUR-CH-10002024	HON 5400 Series Task Chairs for Big and Tall	21870.576
5	OFF-BI-10001359	GBC DocuBind TL300 Electric Binding System	19823.479000000003
6	OFF-BI-10000545	GBC Ibimaster 500 Manual ProClick Binding System	19024.5
7	TEC-CO-10001449	Hewlett Packard LaserJet 3310 Copier	18839.686
8	TEC-MA-10001127	HP Designjet T520 Inkjet Large Format Printer - 24. Color	18374.895
9	OFF-BI-10004995	GBC DocuBind P400 Electric Binding System	17965.068
10	OFF-SU-10000151	High Speed Automatic Electric Letter Opener	17030.311999999998

```sql
----Customer & Market Insights:
---1. Who are the top customers based on sales?
SELECT o.Customer_ID, c.Customer_Name, SUM(o.sales) AS total_sales
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
GROUP BY o.Customer_ID, c.Customer_Name
ORDER BY total_sales DESC
LIMIT 10;
```

Query Result

#	customer_id	customer_name	total_sales
1	SM-20320	Sean Miller	25043.05
2	TC-20980	Tamara Chand	19052.217999999997
3	RB-19360	Raymond Buch	15117.339
4	TA-21385	Tom Ashbrook	14595.62
5	AB-10105	Adrian Barton	14473.570999999998
6	KL-16645	Ken Lonsdale	14175.229
7	SC-20095	Sanjit Chand	14142.333999999999
8	HL-15040	Hunter Lopez	12873.297999999999
9	SE-20110	Sanjit Engle	12209.438000000002
10	CC-12370	Christopher Conant	12129.072

```sql
---2. How are sales distributed among customer segments?
SELECT c.Segment, SUM(o.sales) AS total_sales
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
GROUP BY c.Segment
ORDER BY total_sales DESC;
```

Query Result

#	segment	total_sales
1	Consumer	1148060.5309999897
2	Corporate	688494.0748000002
3	Home Office	424982.1769000005

```sql
---3. Which states/cities have the highest sales?
SELECT c.State, c.City, SUM(o.sales) AS total_sales
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
GROUP BY c.State, c.City
ORDER BY total_sales DESC
LIMIT 5;
```

Query Result

#	state	city	total_sales
1	New York	New York City	209428.66610000017
2	California	Los Angeles	139025.1149999999
3	Pennsylvania	Philadelphia	129953.16500000003
4	California	San Francisco	104842.29150000005
5	Washington	Seattle	104647.1798

```sql
---4. How do different customer segments impact sales trends?
SELECT c.Segment, c.Region, SUM(o.sales) AS total_sales
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
GROUP BY c.Segment, c.Region
ORDER BY total_sales DESC;
```

Query Result

#	segment	region	total_sales
1	Consumer	West	438747.96800000063
2	Consumer	East	268016.28770000034
3	Consumer	Central	258031.61130000075
4	Corporate	East	216597.7064000001
5	Corporate	West	188659.49190000017
6	Consumer	South	183264.66399999984
7	Corporate	Central	163684.47419999982
8	Home Office	East	121737.14340000002
9	Corporate	South	119552.4023
10	Home Office	West	116886.09179999994
11	Home Office	South	93823.55500000008
12	Home Office	Central	92536.38669999996

```
--Operations & Shipping:

--1. What is the most used shipping mode?

SELECT Ship_Mode, COUNT(*) AS total_shipments
FROM orders
GROUP BY Ship_Mode
ORDER BY total_shipments DESC;
```

Query Result

#	ship_mode	total_shipments
1	Standard Class	5859
2	Second Class	1902
3	First Class	1501
4	Same Day	538

```sql
--2. How long does shipping take on average?
SELECT round(AVG(Ship_Date - Order_Date)):: INTEGER AS
avg_shipping_days
FROM orders;
```

Query Result

#	avg_shipping_days
1	4

```sql
--3. What percentage of deliveries are delayed?

SELECT
    COUNT(*) FILTER (WHERE Ship_Date > Order_Date + INTERVAL '5
days') * 100.0 / COUNT(*) AS delayed_percentage
FROM orders;
```

Query Answer

#	delayed_percentage
1	18.2142857142857143

```sql
--4. How do shipping delays vary by region?

WITH Shipping_Thresholds AS (
    SELECT Ship_Mode,
           CASE
               WHEN Ship_Mode = 'Same Day' THEN 1
               WHEN Ship_Mode = 'First Class' THEN 2
               WHEN Ship_Mode = 'Second Class' THEN 3
               WHEN Ship_Mode = 'Standard Class' THEN 5
               ELSE 4
           END AS max_shipping_days
    FROM orders
)
SELECT c.Region,
       COUNT(o.Order_ID) AS delayed_shipments,
       ROUND(100.0 * COUNT(o.Order_ID) / SUM(COUNT(o.Order_ID))
OVER(), 2) AS delay_percentage
FROM orders o
JOIN customers c ON o.Customer_ID = c.Customer_ID
JOIN Shipping_Thresholds s ON o.Ship_Mode = s.Ship_Mode
WHERE (o.Ship_Date - o.Order_Date) > s.max_shipping_days
GROUP BY c.Region
ORDER BY delayed_shipments DESC;
```

Query Result

#	region	delayed_shipments	delay_percentage
1	West	4389141	34.10
2	East	3266971	25.37
3	Central	3099952	24.08
4	South	2117339	16.45

```sql
--5. How does sales performance differ across shipping modes?

SELECT o.Ship_Mode,
       SUM(o.Sales) AS total_sales,
       COUNT(o.Order_ID) AS total_orders,
       ROUND(AVG(o.Sales), 2) AS avg_order_value,
       ROUND(AVG(o.Ship_Date - o.Order_Date), 2) AS avg_shipping_days
FROM orders o
GROUP BY o.Ship_Mode
ORDER BY total_sales DESC;
```

Query Answer

#	ship_mode	total_sales	total_orders	avg_order_value	avg_shipping_days
1	Standard Class	1340831.3069999823	5859	229	5
2	Second Class	449914.17939999996	1902	237	3
3	First Class	345672.25730000035	1501	230	2
4	Same Day	125219.039	538	233	0