

CUSTOMER RELATIONSHIP MANAGEMENT SALES DATA ANALYSIS

A CAPSTONE PROJECT USING SQL AND EXCEL

ABSTRACT

Analysis of a company's CRM sales dataset to identify areas of improvement, opportunities for growth, and effective sales strategies.

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Project Overview:

This Project shows analysis of a company's customer relationship management (CRM) dataset that includes information about accounts, products, sales pipelines, and sales teams.

The company seeks to optimize its sales strategies and drive growth by gaining a deeper understanding of its accounts, products, sales pipeline, and sales team.

The objectives are:

- Identify areas of improvement, opportunities for growth, and effective sales strategies through data analysis.

To achieve this, exploratory data analysis was performed using SQL to answer the following questions about the dataset then the findings were visualized using Excel to build a dashboard.

Step 1: Ask questions.

To achieve the set objectives of the analysis, find answers to the following questions.

1. Sales Pipeline Analysis:

- What is the total number of deals?
- What is the status of deals in the sales pipeline?
- What is the total number of deals over time?
- What is the status of each deal stage over time?
- What is the status of closed deals over time?
- What is the average deal length from initial contact to deal closure?

2. Sales Team Performance:

- What is total number of staffs at each regional office?
- Who are the top-performing sales agents?
- Who are the most effective managers?
- What is the performance of each regional office?
- Which sales agent is most effective at selling a specific product?

3. Product Performance

- What is the total number of Products sold?
- What is the total number of products lost?
- What is the estimated revenue generated from sales?
- What is the trend for revenue and product quantity over time?
- What is the revenue and profit generated by each product?
- What are the number of won and lost deals by each product?

- What is the monthly sales trend for each product?
 - Is the company gaining or losing?
4. Account Analysis
- What is the total number of accounts in the sales pipeline?
 - Which sector have the most accounts?
 - Which country are most accounts situated?
 - What is the revenue and profit generated from each account?
 - What is the revenue and profit generated from each sector?
 - What is the revenue and profit generated from each office location?
 - Which accounts have the highest average revenue per order?

Step 2: Data Import and Database Setup

Data Overview:

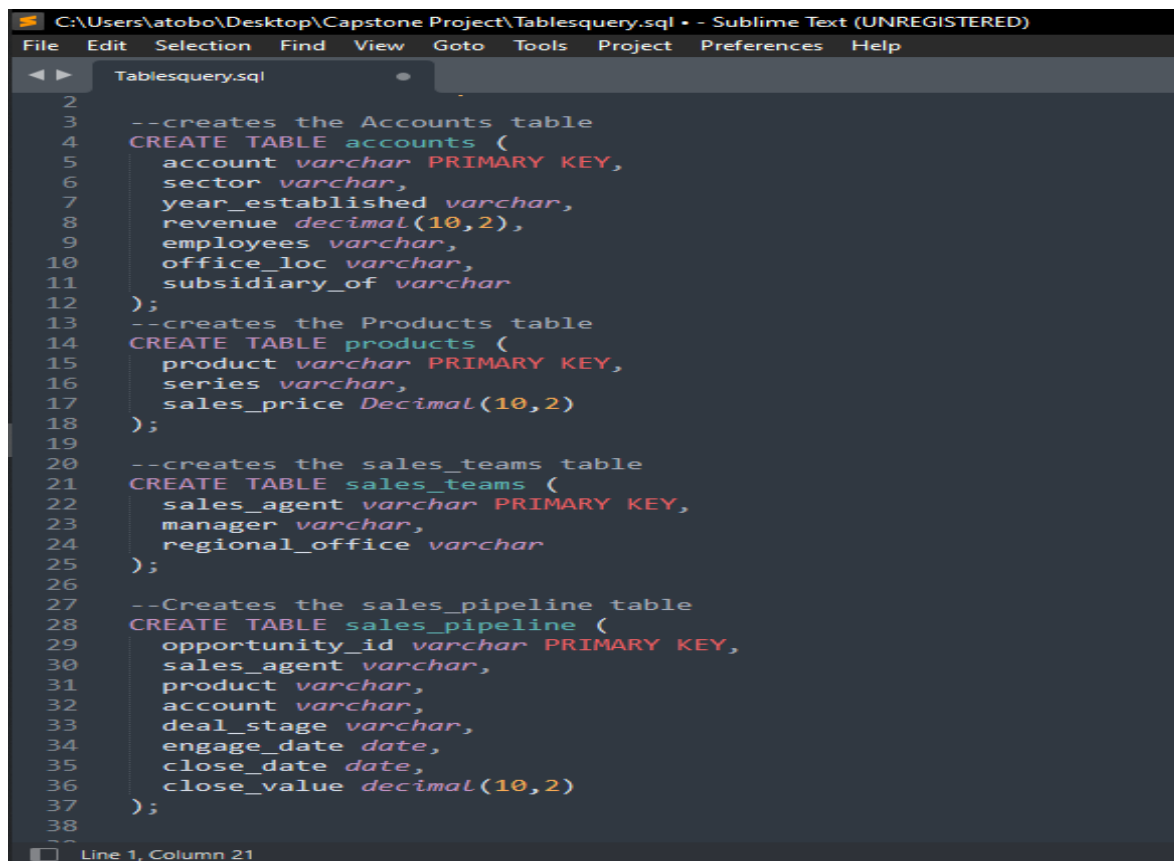
1. The accounts table contains information about the company. Consists of 7 columns (account, sector, year_established, revenue, employees, office_loc, subsidiary_of).
2. The Products table contains information about the product. It consists of 3 columns (product, series, sales_price).
3. The Sales Pipeline contains information about the sales transactions. It contains 8 columns (opportunity_id, sales_agent, product, product, account, deal_stage, engage_date, close_date, and close_value)
4. The Sales team table contains information about the Sales agents, Managers, and their regional_office.

To begin, I will set up the necessary database tables and relationships to store the CRM dataset in the relational database management system (RDBMS)

PostgreSQL was used as the relational database management system throughout the analysis process.

A database was created in the RDMS for the project then created the following tables using PostgreSQL's data definition commands.

- Accounts
- Products
- Sales Pipeline
- Sales Teams



```
C:\Users\atobo\Desktop\Capstone Project\Tablesquery.sql - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

Tablesquery.sql
2
3  --creates the Accounts table
4  CREATE TABLE accounts (
5      account varchar PRIMARY KEY,
6      sector varchar,
7      year_established varchar,
8      revenue decimal(10,2),
9      employees varchar,
10     office_loc varchar,
11     subsidiary_of varchar
12 );
13 --creates the Products table
14 CREATE TABLE products (
15     product varchar PRIMARY KEY,
16     series varchar,
17     sales_price Decimal(10,2)
18 );
19
20 --creates the sales_teams table
21 CREATE TABLE sales_teams (
22     sales_agent varchar PRIMARY KEY,
23     manager varchar,
24     regional_office varchar
25 );
26
27 --Creates the sales_pipeline table
28 CREATE TABLE sales_pipeline (
29     opportunity_id varchar PRIMARY KEY,
30     sales_agent varchar,
31     product varchar,
32     account varchar,
33     deal_stage varchar,
34     engage_date date,
35     close_date date,
36     close_value decimal(10,2)
37 );
38
39
Line 1, Column 21
```

Figure 1: Creating tables for the CRM database.

After creating the tables, they were populated with data by importing the files directly into each table and an initial data exploration was performed to clean the tables to ensure quality and accuracy of data before the relationship between their attributes are established.

This included probing the data for total number of rows, spelling errors, duplicate values, and null values.

Observations:

The screenshot shows a PostgreSQL query editor window titled "CRM database/postgres@PostgreSQL 16* X". The query is as follows:

```
1  --count the total rows for each table
2  SELECT 'account' AS table_name, COUNT(*) AS total_rows
3  FROM accounts
4  UNION
5  SELECT 'products', COUNT(*)
6  FROM products
7  UNION
8  SELECT 'sales_pipeline', COUNT(*)
9  FROM sales_pipeline
10 UNION
11 SELECT 'sales_teams', COUNT(*)
12 FROM sales_teams;
```

The "Data Output" tab shows the results of the query:

	table_name	total_rows
1	account	85
2	sales_teams	35
3	sales_pipeline	8800
4	products	7

Total rows: 4 of 4 Query complete 00:00:00.118 Ln 9, Col 21

Figure 2: Queries depicting count of rows for each table created.

The screenshot shows a PostgreSQL query editor window titled "CRM database/postgres@PostgreSQL 16* X". The query is as follows:

```
13
14 --checking for spelling errors in
15 SELECT DISTINCT product
16 FROM sales_pipeline
17
18
19 UPDATE sales_pipeline
20 SET product = 'GTX Pro'
21 WHERE product = 'GTXPro'
```

The "Data Output" tab shows the results of the query:

	product
1	MG Advanced
2	GTXPro
3	GTX Plus Pro
4	GTK 500
5	MG Special
6	GTX Basic
7	GTX Plus Basic

Total rows: 7 of 7 Query complete 00:00:00.236 Ln 16, Col 20

Figure 3: Data cleaning processes.

Duplicate Data:

- There were no duplicate data in the tables (using the pivot columns as Primary keys in each table ensured each of them had a unique value)

Null Values:

- There were blank records in the account column of the sales_pipeline table, but no action was taken.

ER Diagram:

I will design an ER diagram to declare the entities and attributes then establish the relationships between them.

The ER diagram will help us understand how the database is structured, the relationships established between tables and enforce data validation, and data quality constraints.

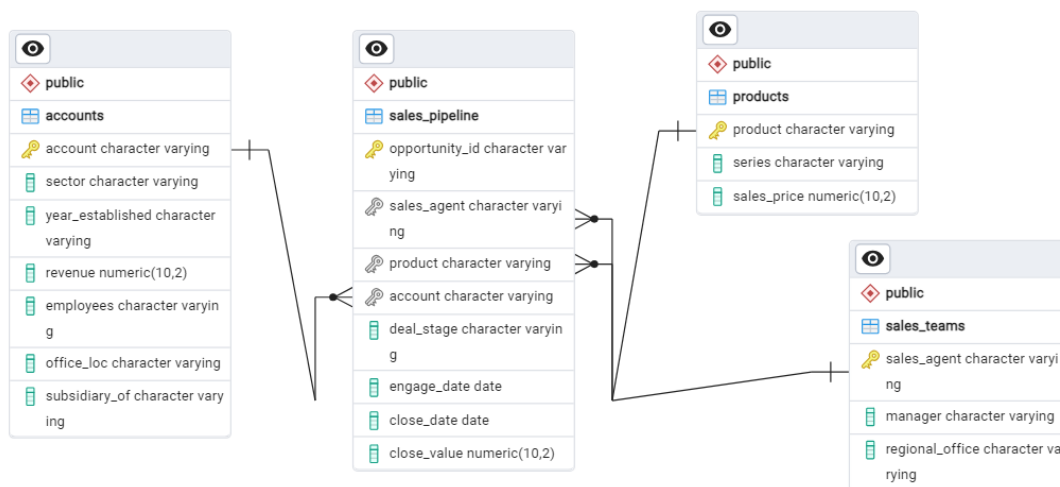


Figure 4: Entity Relationship Diagram (ERD) depicting the relationship between tables in the Database

Cardinality:

- An account can initiate many deals, but a deal can be initiated by only one account (one-to-many)
- A product can be bought in many deals, but a deal can be associated with only one product (one-to-many)
- A sales agent can take on multiple deals, but a deal can only be associated with one sales agent (one-to-many)

Relationships

- Sales Pipeline table connects to the accounts table using account column as foreign key.
- Sales Pipeline table connects to the products table using the product column as foreign key.
- Sales Pipeline table connects to the sales team through the sales_agent column as foreign key.

```
66
67
68
69
70
71
72 --Establish relationship between Entities and attributes
73 ALTER TABLE sales_pipeline ADD FOREIGN KEY (account) REFERENCES accounts (account);
74
75 ALTER TABLE sales_pipeline ADD FOREIGN KEY (sales_agent) REFERENCES sales_teams (sales_agent);
76
77 ALTER TABLE sales_pipeline ADD FOREIGN KEY (product) REFERENCES products (product);
78
79
80
81
82
83
```

Step 3: Data Analysis Process

For the analysis part, we will find answers to the questions grouped under;

- Sales pipeline analysis
- Sales team performance analysis
- Product performance analysis
- Account analysis.

using SQL queries. At the end of the analysis, we will design a dashboard to reflect answers to the components that will solve the business problem posed upon us.

- **Sales pipeline analysis**

Here, we will analyze the sales pipeline to understand the distribution of deals and sales through the various stages.

This section can help the company set achievable sales goals based on historical performance and pipeline analysis.

1. What is the total number of deals?

The total number of deals can be achieved by counting the number of deals in the entire sales pipeline.

The screenshot shows a PostgreSQL query editor with the following SQL query:

```

19
20
21 -- What is the total deals?
22 SELECT
23     COUNT(*) total_deal
24 FROM sales_pipeline
25
26
27

```

The query results are displayed in a table with the following data:

total_deal	bigint
1	8800

Figure 5: Query and result for the total number of deals in the sales pipeline.

From the query, the total number of deals is 8,800.

This would help us get a clear understanding of the overall sales pipeline health and be able to estimate the total potential revenue opportunity presented to the company.

2. What is the status of deals in the sales pipeline?

The number of Deals were grouped into the various deal stages, so we can understand the status of each deal in the pipeline.

The screenshot shows a PostgreSQL query editor with the following SQL query:

```

27
28
29 -- What is the status of deals in the sales pipeline?
30 SELECT
31     deal_stage,
32     COUNT(*) deals_count,
33     ROUND(COUNT(*)*100.0 / (SELECT COUNT(*) FROM sales_pipeline),2) AS percentage
34 FROM sales_pipeline
35 GROUP BY deal_stage
36 ORDER BY percentage;

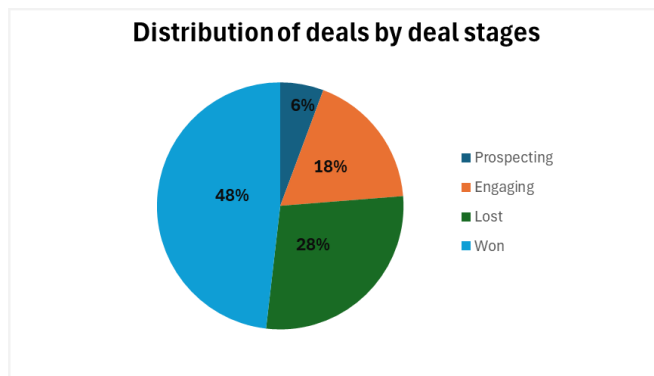
```

The query results are displayed in a table with the following data:

deal_stage	character varying	deals_count	bigint	percentage	numeric
1	Prospecting	500		5.68	
2	Engaging	1589		18.06	
3	Lost	2473		28.10	
4	Won	4238		48.16	

Total rows: 4 of 4 Query complete 00:00:00.330 Ln 29,

Figure 6: Query and result for the number of deals in each deal stage.



The data above shows almost half (48.1%) of the deals have been won, the company continues to engage with about 18.06% of the deals, lost about 28.10% of the deals

and about 5.6% of the deals are at the prospecting stage.

This analysis would help the company refine sales strategies, tactics, and techniques to convert the remaining deals into won deals.

3. What are the deals by month trend?

```

33
34 -- What is the total deals over time?
35 SELECT
36     COALESCE(TO_CHAR(engage_date, 'Month'), 'No date') months,
37     COUNT(*) lead_count
38 FROM sales_pipeline
39 GROUP BY 1
40 ORDER BY MAX(engage_date);
41
42

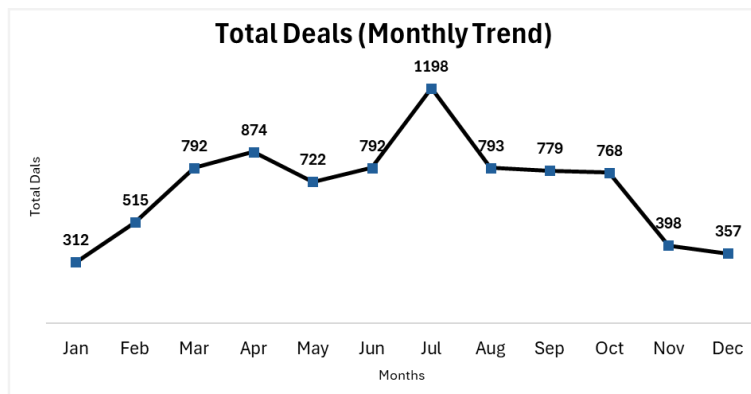
```

Figure 7 :SQL query- Deals by Month trend

Data Output		
	months	lead_count
	text	bigint
1	January	312
2	February	515
3	March	792
4	April	874
5	May	722
6	June	792
7	July	1198
8	August	793
9	September	779
10	October	768
11	November	398
12	December	357
13	No date	500

Total rows: 13 of 13 Query complete 00:00:00.591

Figure 8:Results for Deals by Month trend.



The result presents the distribution of deals across different months. It shows the total number of deals that emerged in each month in the dataset.

It can be observed that, the number of deals gradually

increased from January to October with some fluctuations.

- The highest number of deals occurred in July, indicating peak deal activity in that period. Deal activities extremely drops around November and December which could be due to year-end wrap-up as most companies may focus on wrapping up projects, conducting performance reviews and planning for the next year.
- January recorded the least deals confirming the assertion that, the first month of the year can be a natural slowdown period as companies regain momentum.
- Dates for 500 of the deals were not recorded in the pipeline, this observation can be a deliberate action or an error with the dataset and therefore would be investigated to establish the connection between them.

4. What is the status of each deal stage over time?

This metric is crucial because it helps us track the movement of deals through the sales pipeline. It shows the number of deals that get created in over time and how many of each is converted to the next stage.

```

42
43 -- What is the status of each deal stage over time?
44 SELECT
45     COALESCE(TO_CHAR(engage_date, 'Month'), 'No month') months,
46     COUNT(*) total_deals,
47     SUM(CASE WHEN deal_stage = 'Prospecting' THEN 1 ELSE 0 END) AS prospecting_deals,
48     SUM(CASE WHEN deal_stage = 'Engaging' THEN 1 ELSE 0 END) AS engaging_deals,
49     SUM(CASE WHEN deal_stage = 'Lost' THEN 1 ELSE 0 END) AS lost_deals,
50     SUM(CASE WHEN deal_stage = 'Won' THEN 1 ELSE 0 END) AS won_deals
51 FROM sales_pipeline
52 GROUP BY 1
53 ORDER BY MAX(engage_date);
54

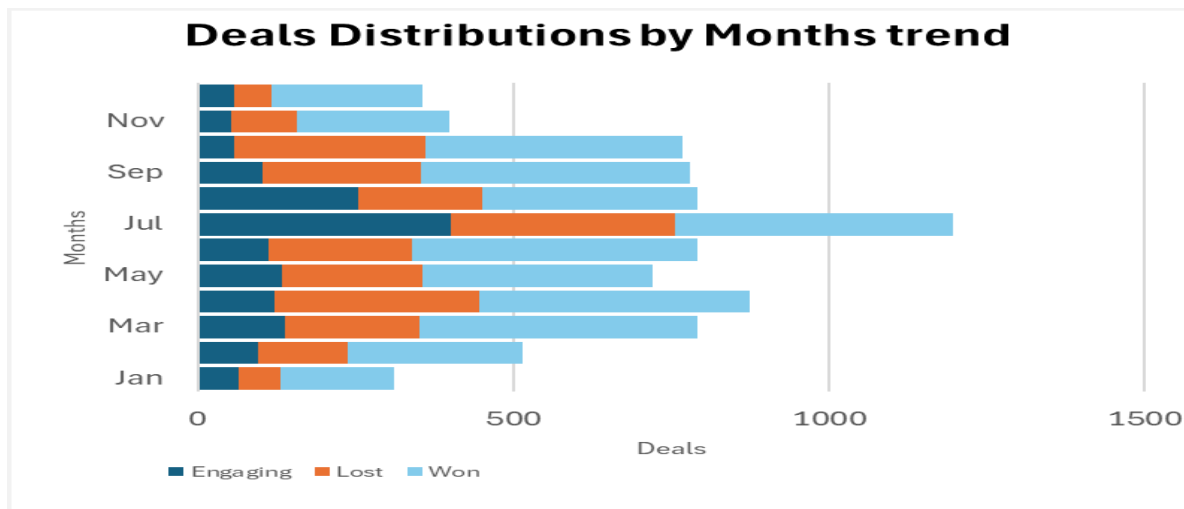
```

Figure 9: Sql query- Status of deals over time.

CRM_db/postgres@PostgreSQL 16						
No limit						
Data Output Messages Notifications						
	months text	total_deals bigint	prospecting_deals bigint	engaging_deals bigint	lost_deals bigint	won_deals bigint
1	January	312	0	65	66	181
2	February	515	0	95	143	277
3	March	792	0	137	215	440
4	April	874	0	121	326	427
5	May	722	0	134	222	366
6	June	792	0	111	228	453
7	July	1198	0	402	355	441
8	August	793	0	254	198	341
9	September	779	0	102	252	425
10	October	768	0	58	303	407
11	November	398	0	52	106	240
12	December	357	0	58	59	240
13	No month	500	500	0	0	0

Total rows: 13 of 13 Query complete 00:00:00.299 Ln 53, Col 27

Figure 10: Results for status of deals over time.



The company loses a higher number of deals that come in July despite July recording the highest number of deals created. However, the dataset cannot fully help us understand the reasons for lost deals to address potential issues in the sales process.

We suggest that the company enhance their sales techniques, develop targeted engagement strategies to move deals forward and learn from successes and setbacks to help them reduce lost deals and effectively manage deals in the engaging stage to drive revenue growth.

June has the highest number of deals that was converted to the won stage.

The deals that had no dates recorded, are all in the prospecting stage and can explain why they do not have any dates recorded because prospecting deals are often in the initial outreach phase, where dates are not set yet.

5. What is the status of closed deals over time?

This metric is used to analyze sales performance by examining the number of deals that have been closed (won or lost) and when they were closed over time (time when deals get closed)

```

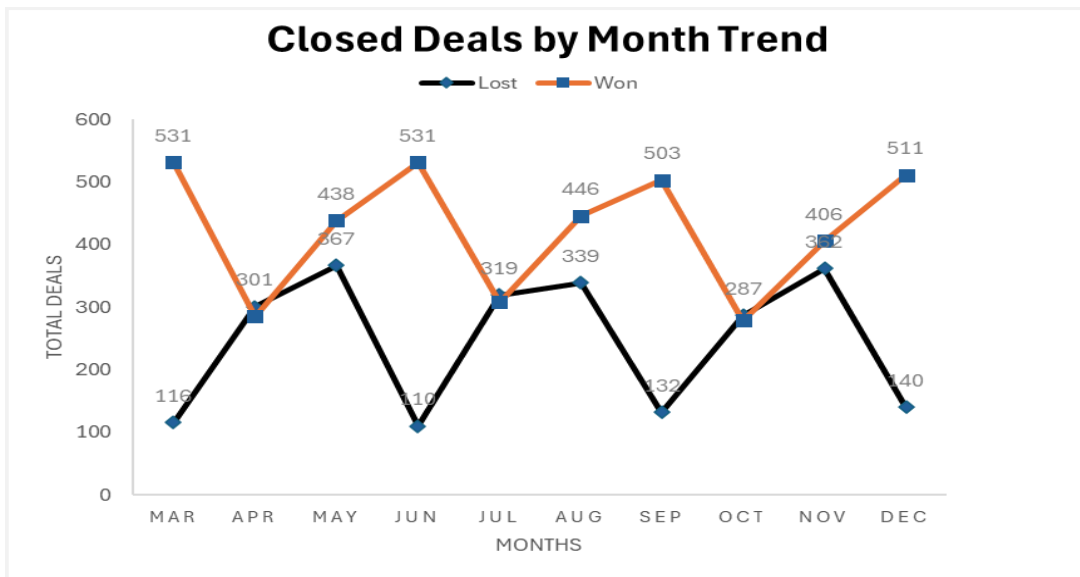
54
55 -- what is the status of closed deals over time?
56 SELECT
57     TO_CHAR(close_date, 'Month') months,
58     SUM(CASE WHEN deal_stage = 'Lost' THEN 1 ELSE 0 END) AS close_lost,
59     SUM(CASE WHEN deal_stage = 'Won' THEN 1 ELSE 0 END) AS close_won
60 FROM sales_pipeline
61 WHERE close_date IS NOT NULL
62 GROUP BY 1
63 ORDER BY min(close_date);
64
65
66
67

```

Figure 11:Sql query- status of closed deals over time.

CRM_db/postgres@PostgreSQL 16			
Data Output Messages Graph Visualiser Notifications			
	months text	close_lost bigint	close_won bigint
1	March	116	531
2	April	301	285
3	May	367	438
4	June	110	531
5	July	319	308
6	August	339	446
7	September	132	503
8	October	287	279
9	November	362	406
10	December	140	511

Figure 12:Results for status of closed deals over time.



Highest Number of won deals occurred in March and June, followed closely by December and September.

The number of lost deals of these months were relatively small compared to the rest of the months.

The highest number of lost deals occurred in May, followed closely by November.

Generally, the data points formed a zigzag pattern with alternating periods of growth and decline for both won and lost deals over the period.

6. What is the average deal length from initial contact to deal closure?

This metric measures the amount of time from initial contact with a client to closing a deal.

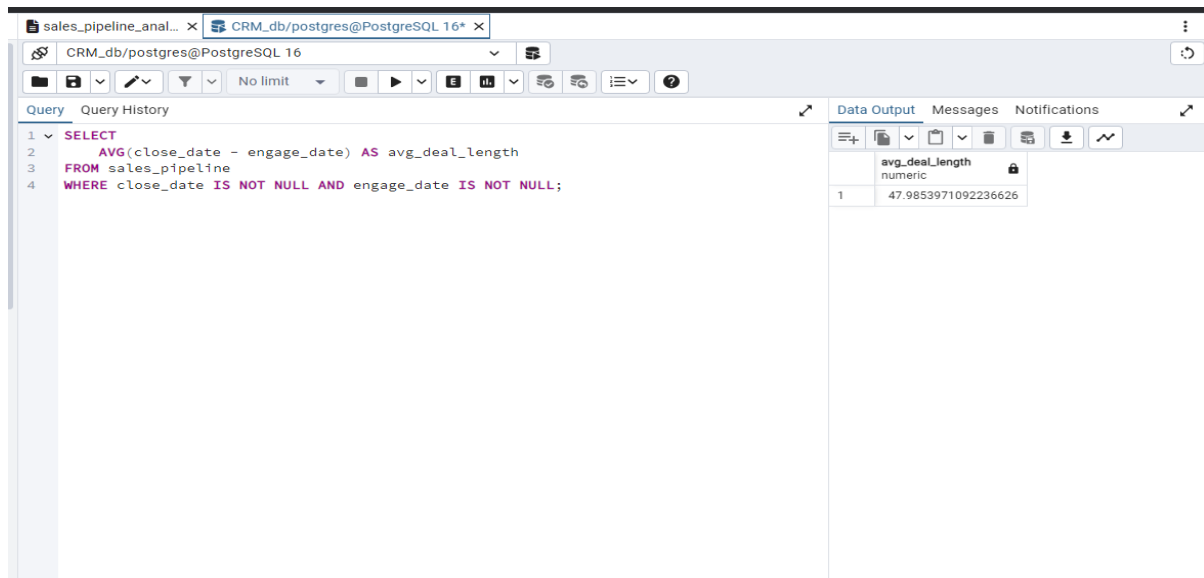
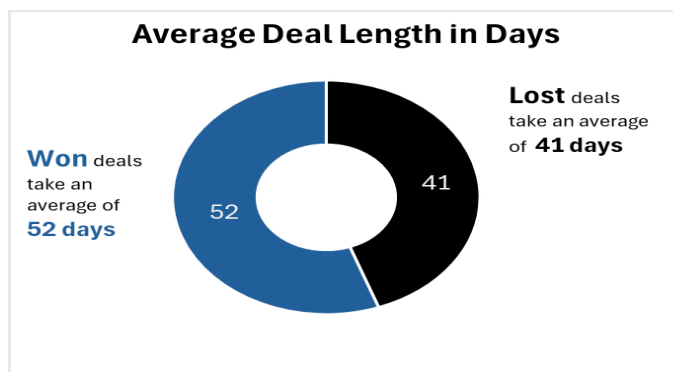


Figure 13:Sql query and Result for Average deal cycle length.



The results suggest that deals that are closed faster (41 days) are more likely to result in lost opportunities. On the other hand, the longer average deal length for won deals (52 days) indicates that taking more time to nurture and close deals may lead to higher success rates.

It may be beneficial for the company to analyze the reasons behind the lost deals with shorter durations and consider adjustments to improve the chances of winning such deal in the future.

- **Sales Team Performance:**

By measuring sales team performance, the company can identify areas of strength and areas that need improvement within the sales team.

1. What is total number of staffs at each regional office?

This would group the number of sales agents and managers into each of their respective regional offices of operation.

CRM database/postgres@PostgreSQL 16*

CRM database/postgres@PostgreSQL 16

Query Query History

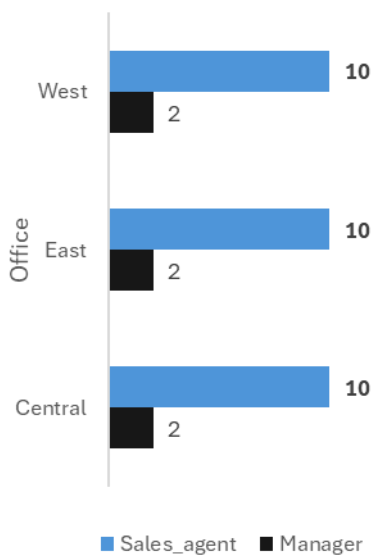
```

1 SELECT st.regional_office,
2       COUNT(DISTINCT sp.sales_agent) agents,
3       COUNT(DISTINCT st.manager) manager
4 from sales_pipeline sp
5 LEFT JOIN sales_teams st
6 ON sp.sales_agent = st.sales_agent
7 GROUP BY 1
8
9

```

Data Output Messages Notifications

	regional_office character varying	agents bigint	manager bigint
1	Central	10	2
2	East	10	2
3	West	10	2



A balanced structure with similar number of sales agents and managers in each office has been established. This setup could potentially lead to consistent support for the sales teams in each office, helping to maintain operational efficiency and provide adequate guidance for sales activities.

2. Who are the top-performing sales agents?

Sales agents' performance is measured by the number and value of deals they close. To identify the top-performing sales agents, we will look at agents and their total number of deals within the sales pipeline then examine the value of their won deals.

CRM database/postgres@PostgreSQL 16

CRM database/postgres@PostgreSQL 16

Query Query History

```

8 -- Who are the top-performing sales agents?
9 SELECT
10   sales_agent,
11   COUNT(*) total_deals_count,
12   SUM(CASE WHEN deal_stage = 'Prospecting' THEN 1 ELSE 0 END) AS prospecting_deals,
13   SUM(CASE WHEN deal_stage = 'Engaging' THEN 1 ELSE 0 END) AS engaging_deals,
14   SUM(CASE WHEN deal_stage = 'Lost' THEN 1 ELSE 0 END) AS lost_deals,
15   SUM(CASE WHEN deal_stage = 'Won' THEN 1 ELSE 0 END) AS won_deals
16 FROM sales_pipeline
17 GROUP BY 1
18 ORDER BY 2 DESC
19 LIMIT 5;
20

```

Data Output Messages Notifications

	sales_agent character varying	total_deals_count bigint	prospecting_deals bigint	engaging_deals bigint	lost_deals bigint	won_deals bigint
1	Darcel Schlecht	747	111	83	204	349
2	Vicki Laflamme	451	0	104	126	221
3	Anna Snelling	448	55	57	128	208
4	Kary Hendrixson	438	0	103	126	209
5	Kami Bicknell	362	0	90	98	174

Total rows: 5 of 5 Query complete 00:00:00.292 Ln 17, Col 11

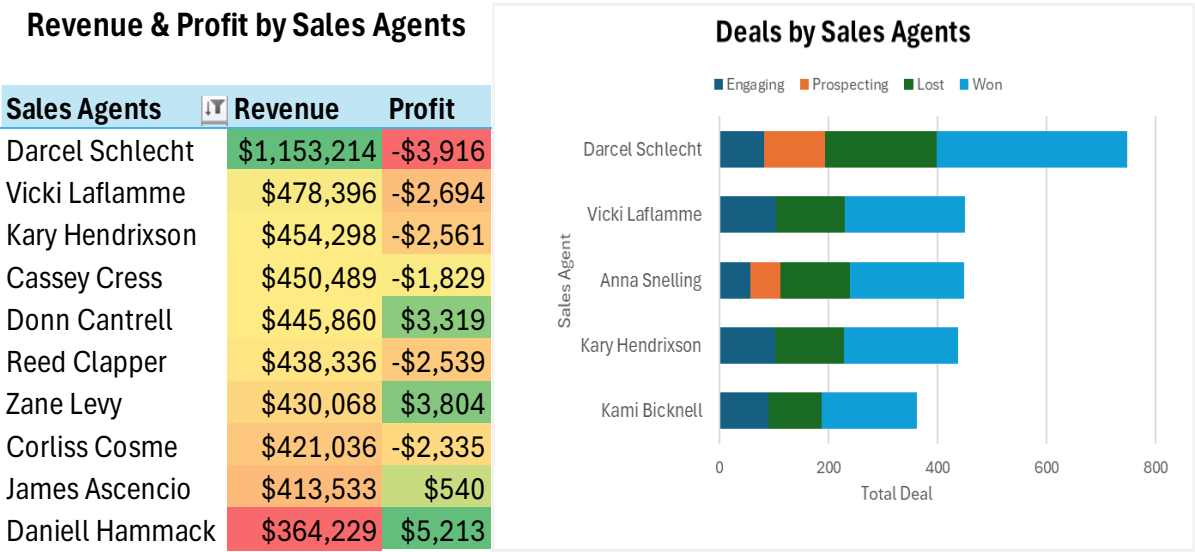
From the results, we can deduce that agent ‘Darcel Schlecht’ has been more actively engaging with a larger number of deals and has a higher overall deal count compared to ‘Vicki Laflamme’ who ranked second which suggests a more robust and dynamic approach to managing deals.

Now, we’d look at sales agents’ performance with respect to their revenue and profit generated to observe if their deal performance reflects with the revenue they generate.

```
CRM_db/postgres@PostgreSQL 16
--Sales agents performance by revenue and profit
WITH t1 AS (
    SELECT
        sales_agent,product,
        COUNT(*) quantity, SUM(close_value) total_revenue
    FROM sales_pipeline
    WHERE deal_stage = 'Won'
    GROUP BY 1, 2),
t2 AS (
    SELECT DISTINCT
        sp.sales_agent,
        sp.product,
        p.sales_price
    FROM sales_pipeline sp
    JOIN products p ON sp.product = p.product)
SELECT
    t1.sales_agent, SUM(t1.quantity * t2.sales_price) AS total_cost,
    SUM(t1.total_revenue) total_revenue,
    SUM(t1.total_revenue - (t1.quantity * t2.sales_price)) AS total_profit
FROM t1
JOIN t2 ON t1.sales_agent = t2.sales_agent AND t1.product = t2.product
GROUP BY 1
ORDER BY total_revenue DESC;
```

Figure 14:Sales agent performance by revenue and profit query.

	sales_agent	total_revenue	total_profit
	character varying	numeric	numeric
1	Darcel Schlecht	1153214.00	-3916.00
2	Vicki Laflamme	478396.00	-2694.00
3	Kary Hendrixson	454298.00	-2561.00
4	Cassey Cress	450489.00	-1829.00
5	Donn Cantrell	445860.00	3319.00



Based on this result, agent ‘Darchel Schlecht’ who ranked first, has a higher total revenue compared to ‘Vicki Laflamme’ who ranked second. However, both agents have negative profits.

3. Who are the most effective managers?

We assess sales managers' performance for reasons such as:

- Accountability: hold them responsible for their team's sales performance and goals achievement.
- Development: identify areas for improvement and provide targeted training and coaching.
- Compensation: tie performance to incentives, bonuses or promotions.

CRM_db/postgres@PostgreSQL 16

Query

```
-- Who are the most effective managers?
SELECT
  st.manager,
  COUNT(sp.*) number_of_deals,
  SUM(CASE WHEN sp.deal_stage = 'Prospecting' THEN 1 ELSE 0 END) AS prospecting_deals,
  SUM(CASE WHEN sp.deal_stage = 'Engaging' THEN 1 ELSE 0 END) AS engaging_deals,
  SUM(CASE WHEN sp.deal_stage = 'Lost' THEN 1 ELSE 0 END) AS lost_deals,
  SUM(CASE WHEN sp.deal_stage = 'Won' THEN 1 ELSE 0 END) AS won_deals
FROM sales_teams st
JOIN sales_pipeline sp
ON st.sales_agent = sp.sales_agent
GROUP BY 1
ORDER BY number_of_deals DESC;
```

Data Output

	manager character varying	number_of_deals bigint	prospecting_deals bigint	engaging_deals bigint	lost_deals bigint	won_deals bigint
1	Melvin Marxen	1929	296	215	536	882
2	Summer Sewald	1701	0	414	459	828
3	Dustin Brinkmann	1583	204	193	439	747
4	Rocco Neubert	1327	0	214	422	691
5	Celia Rouche	1296	0	334	352	610
6	Cara Losch	964	0	219	265	480

Total rows: 6 of 6 Query complete 00:00:00.256 Ln 67, Col 31

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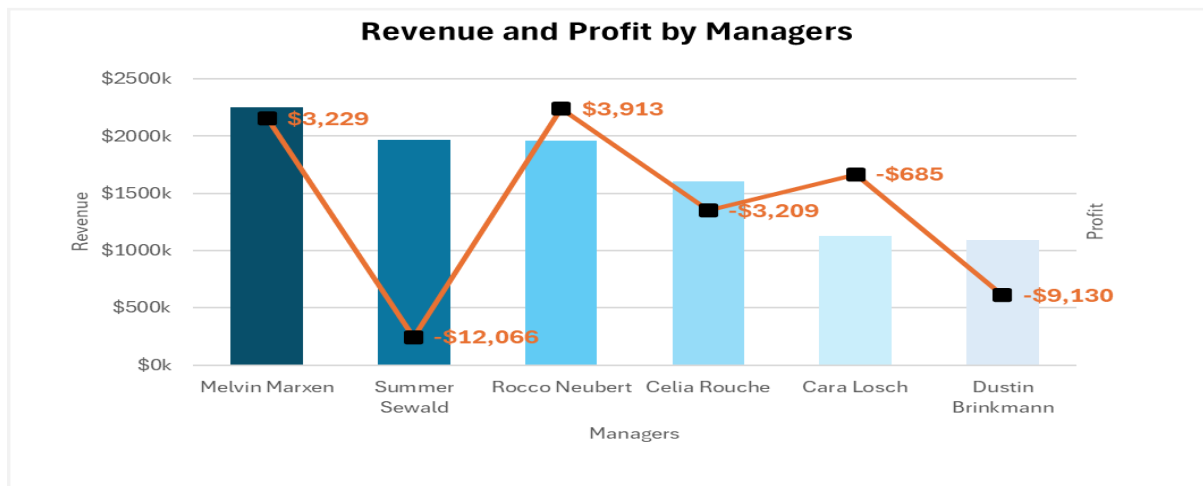
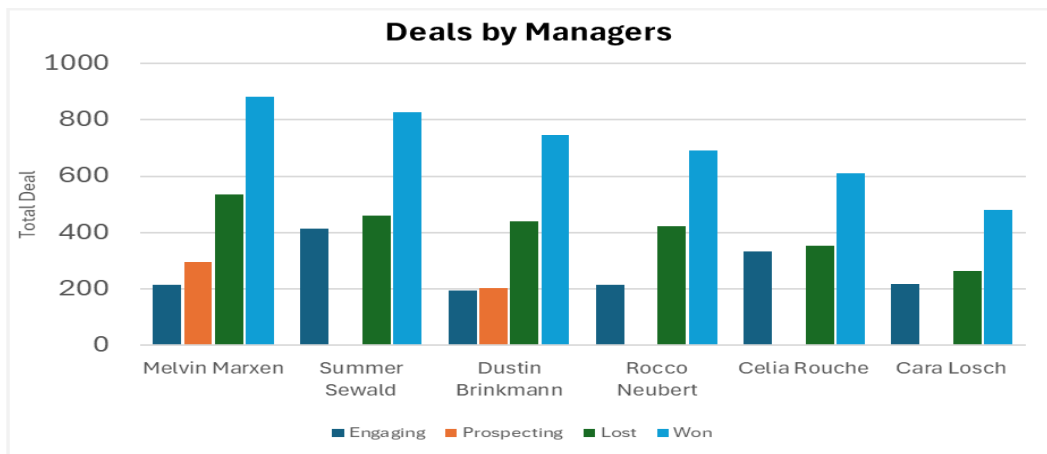
CRM_db/postgres@PostgreSQL 16

Query

```
-- Sales managers' performance according to revenue and profit
WITH t1 AS (
  SELECT
    st.manager,
    sp.product,
    COUNT(*) quantity,
    SUM(close_value) total_revenue
  FROM sales_teams st
  JOIN sales_pipeline sp ON sp.sales_agent = st.sales_agent
  WHERE deal_stage = 'Won'
  GROUP BY 1, 2),
t2 AS (
  SELECT DISTINCT
    st.manager,
    sp.product,
    p.sales_price
  FROM sales_teams st
  JOIN sales_pipeline sp ON st.sales_agent = sp.sales_agent
  JOIN products p ON p.product = sp.product)
SELECT
  t1.manager, SUM(t1.total_revenue) total_revenue,
  SUM(t1.total_revenue - (t1.quantity * t2.sales_price)) AS total_profit
FROM t1
JOIN t2 ON t1.manager = t2.manager AND t1.product = t2.product
GROUP BY 1
ORDER BY total_revenue DESC;
```

Data Output

	manager character varying	total_revenue numeric	total_profit numeric
1	Melvin Marxen	2251930.00	3229.00
2	Summer Sewald	1964750.00	-12066.00
3	Rocco Neubert	1960545.00	3913.00
4	Celia Rouche	1603897.00	-3209.00
5	Cara Losch	1130049.00	-685.00
6	Dustin Brinkmann	1094363.00	-9130.00



- The above tables offers a way to measure performance of sales managers in two different lights thus, based on the total deals managed in each deal stage alongside their revenue generated for the company.
- On the bases of total deals and total revenue generated, 'Melvin Marxen' came first with the larger number of deals, the highest number of lost deals, has deal in the various deal stages, has the highest total revenue and also among the only two (2) managers generating profit for the company. This suggests how actively he has been managing deals to improve profitability. On the other hand, 'Rocco Neubert' has a lower revenue compared to 'Melvin Marxen' but generates the highest profit among his peers.

7. What is the performance of each regional office?

CRM_db/postgres@PostgreSQL 16

```

99 -- What is the performance of each regional office?
100 -- regional office performance by deal stages
101 SELECT
102     st.regional_office,
103     COUNT(sp.*) number_of_deals,
104     SUM(CASE WHEN sp.deal_stage = 'Prospecting' THEN 1 ELSE 0 END) AS prospecting_deals,
105     SUM(CASE WHEN sp.deal_stage = 'Engaging' THEN 1 ELSE 0 END) AS engaging_deals,
106     SUM(CASE WHEN sp.deal_stage = 'Lost' THEN 1 ELSE 0 END) AS lost_deals,
107     SUM(CASE WHEN sp.deal_stage = 'Won' THEN 1 ELSE 0 END) AS won_deals
108 FROM sales_teams st
109 JOIN sales_pipeline sp
110 ON st.sales_agent = sp.sales_agent
111 GROUP BY 1
112 ORDER BY number_of_deals DESC;
113

```

	regional_office	number_of_deals	prospecting_deals	engaging_deals	lost_deals	won_deals
1	Central	3512	500	408	975	1629
2	West	2997	0	748	811	1438
3	East	2291	0	433	687	1171

Total rows: 3 of 3 Query complete 00:00:00.477 Ln 99, Col 52

CRM_db/postgres@PostgreSQL 16

Query

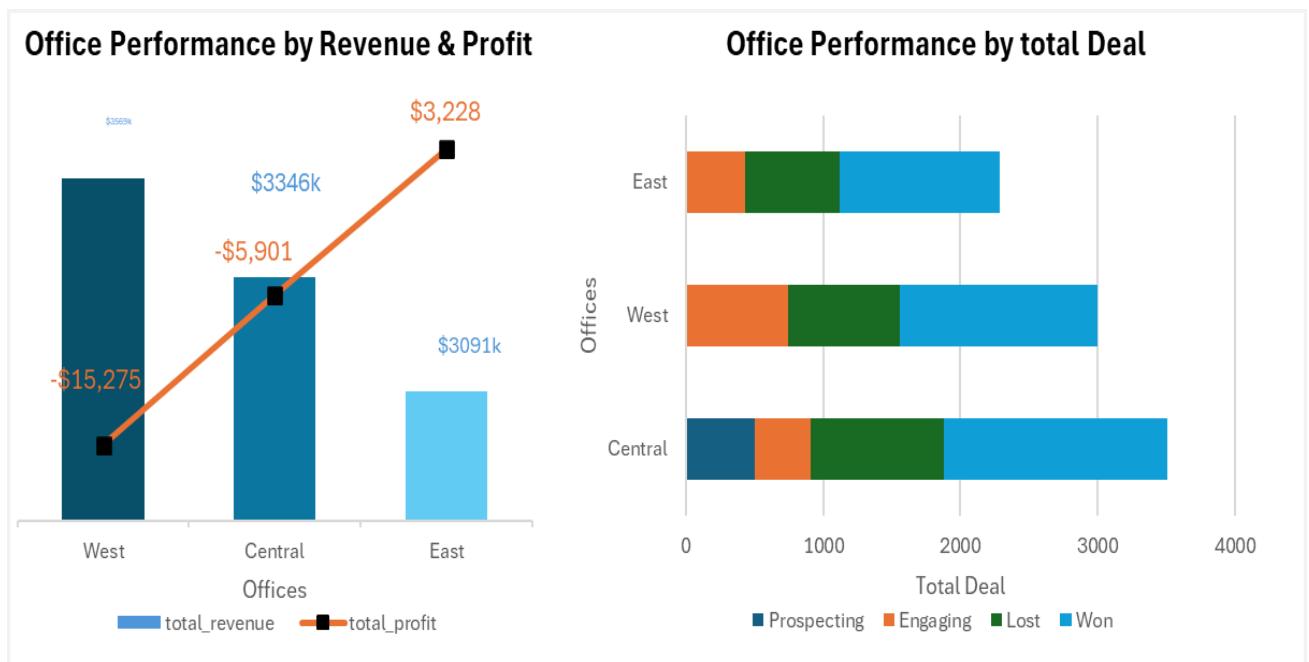
```

113 --Regional office performance according to revenue and profit
114 WITH t1 AS (
115     SELECT
116         st.regional_office,
117         sp.product,
118         COUNT(*) quantity,
119         SUM(close_value) total_revenue
120     FROM sales_teams st
121     JOIN sales_pipeline sp ON sp.sales_agent = st.sales_agent
122     WHERE deal_stage = 'Won'
123     GROUP BY 1, 2),
124 t2 AS (
125     SELECT DISTINCT
126         st.regional_office,
127         sp.product,
128         p.sales_price
129     FROM sales_teams st
130     JOIN sales_pipeline sp ON st.sales_agent = sp.sales_agent
131     JOIN products p ON p.product = sp.product)
132 SELECT
133     t1.regional_office, SUM(t1.total_revenue) total_revenue,
134     SUM(t1.total_revenue - (t1.quantity * t2.sales_price)) AS total_profit
135 FROM t1
136 JOIN t2 ON t1.regional_office = t2.regional_office AND t1.product = t2.prod
137 GROUP BY 1
138 ORDER BY total_revenue DESC;
139
140

```

Data Output

	regional_office	total_revenue	total_profit
1	West	3568647.00	-15275.00
2	Central	3346293.00	-5901.00
3	East	3090594.00	3228.00



Despite having the lowest number of deals and revenue, the East Office generates the highest profit compared to the remaining offices.

The regions that have higher deals, and higher revenue (West, and Central) rather incurred loss on the company.

8. Which sales agent is most effective at selling a specific product?

CRM_db/postgres@PostgreSQL 16

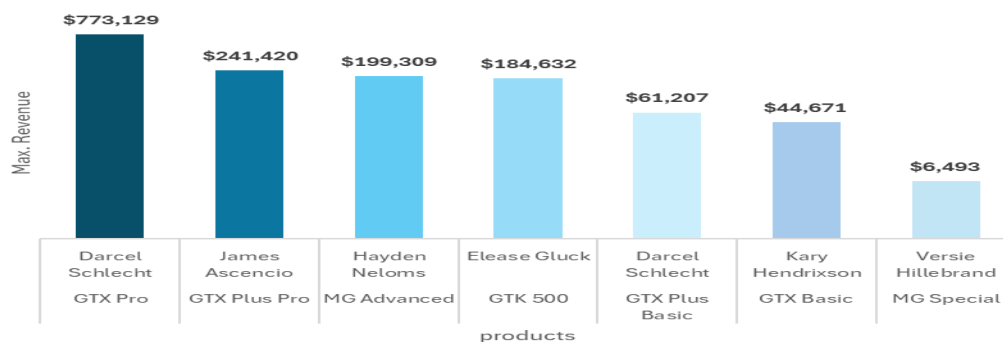
```

140
141 -- Which sales agent is most effective at selling a specific product
142 WITH sub1 AS (
143     SELECT
144         sales_agent,
145         product,
146         COUNT(*) quantity,
147         SUM(close_value) revenue
148     FROM sales_pipeline
149     WHERE deal_stage = 'Won'
150     GROUP BY 1,2
151 ),
152 sub2 AS (
153     SELECT
154         product, Max(revenue) max_revenue
155     FROM sub1
156     GROUP BY product
157 )
158
159 SELECT sub1.sales_agent, sub1.product,
160        sub1.quantity, sub2.max_revenue
161 FROM sub1
162 JOIN sub2
163 ON sub1.product = sub2.product
164 AND sub1.revenue = sub2.max_revenue;
165
166
167

```

sales_agent	product	quantity	max_revenue
Versie Hillebrand	MG Special	117	6493.00
Darcel Schlecht	GTX Plus Basic	56	61207.00
Elease Gluck	GTK 500	7	184632.00
James Ascencio	GTX Plus Pro	44	241420.00
Kary Hendrixson	GTX Basic	82	44671.00
Hayden Neloms	MG Advanced	59	199309.00
Darcel Schlecht	GTX Pro	160	773129.00

Best Sales Agent of each Product



This table provides a list of sales agents that made the maximum sales from a specific product in the deal. By identifying the sales agents most effective, the company can maximize sales by leveraging the strengths of the top-performing agents.

This can also help the company tailor targeted training to other agents, helping them learn from the best practices.

- **Product Performance**

1. What is the total number of Products sold?

CRM_db/postgres@PostgreSQL 16

```

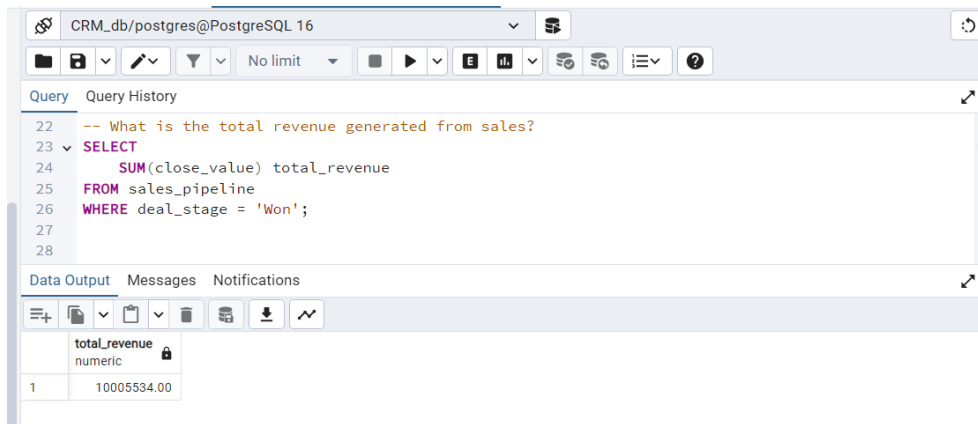
15
16 -- What is the total number of Products sold?
17 SELECT
18     COUNT(product) total_product_sold
19 FROM sales_pipeline
20 WHERE deal_stage = 'Won';
21

```

total_product_sold
4238

Total number of products sold: 4,238.

2. What is the total revenue generated from sales?



The screenshot shows a PostgreSQL query editor interface. The query is as follows:

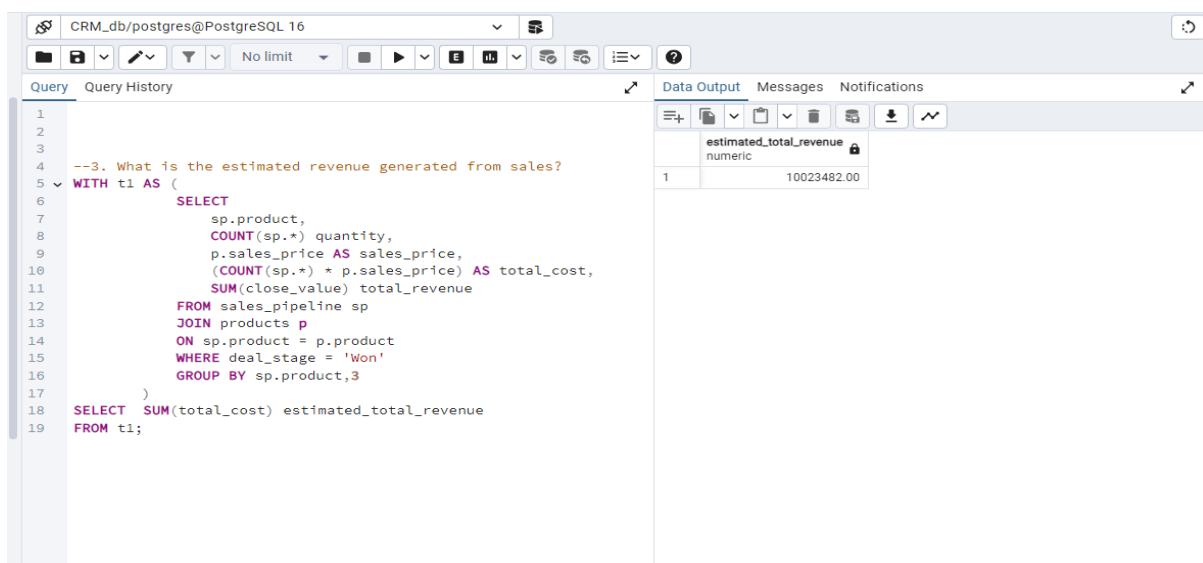
```
-- What is the total revenue generated from sales?
SELECT
    SUM(close_value) total_revenue
FROM sales_pipeline
WHERE deal_stage = 'Won';
```

The Data Output tab shows the result:

total_revenue
10005534.00

Total Revenue generated from sales : \$10,005,534.00

3. What is the estimated revenue generated from sales?



The screenshot shows a PostgreSQL query editor interface. The query is as follows:

```
--3. What is the estimated revenue generated from sales?
WITH t1 AS (
    SELECT
        sp.product,
        COUNT(sp.*) quantity,
        p.sales_price AS sales_price,
        (COUNT(sp.*) * p.sales_price) AS total_cost,
        SUM(close_value) total_revenue
    FROM sales_pipeline sp
    JOIN products p
    ON sp.product = p.product
    WHERE deal_stage = 'Won'
    GROUP BY sp.product, 3
)
SELECT SUM(total_cost) estimated_total_revenue
FROM t1;
```

The Data Output tab shows the result:

estimated_total_revenue
10023482.00

Estimated Revenue from sales : \$10,005,534.00

4. What is the trend for revenue and product quantity over time?

Measuring trend for revenue and product quantity over time helps to; recognize seasonal fluctuations, growth trends, or declines.

CRM_db/postgres@PostgreSQL 16

Query Query History

```

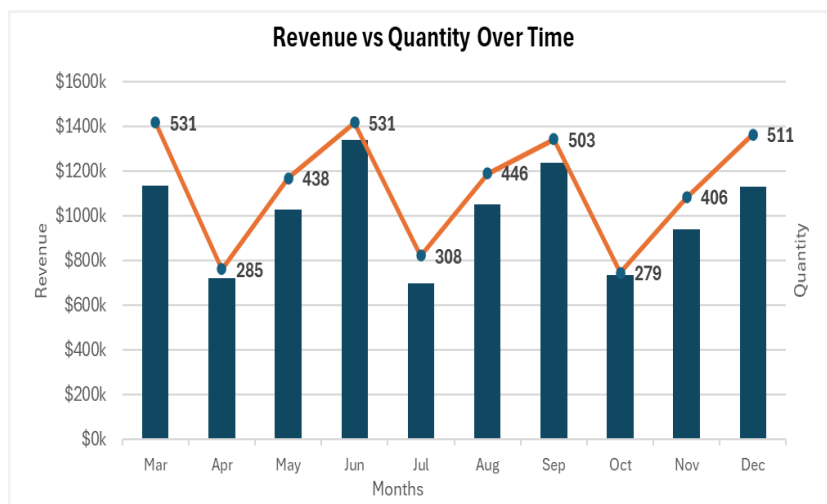
49 -- Find the revenue and product quantity over time?
50 SELECT
51     TO_CHAR(close_date, 'Month') AS month,
52     COUNT(product) quantity_sold,
53     SUM(close_value) revenue
54 FROM sales_pipeline
55 WHERE deal_stage = 'Won'
56 GROUP BY 1
57 ORDER BY MIN(close_date);
58

```

Data Output Messages Notifications

	month text	quantity_sold bigint	revenue numeric
1	March	531	1134672.00
2	April	285	721932.00
3	May	438	1025713.00
4	June	531	1338466.00
5	July	308	696932.00
6	August	446	1050059.00
7	September	503	1235264.00
8	October	279	731980.00
9	November	406	938943.00
10	December	511	1131573.00

Total rows: 10 of 10 Query complete 00:00:00.209 Ln 58, Col 1



The table offers a contrast between revenue from sales together with the quantity of products sold monthly.

The highest quantity of products was sold around June, March, December, and September.

The quantity of products sold in June and March

were the same but the revenue of the former was higher than the revenue of the latter.

The quantity of products sold in October was relatively lower than the quantity sold in April and July yet generated higher revenue than those months.

It's also important to note that, no sales were recorded for January and February.

5. What are the number of won and lost deals by product?

Query Query History

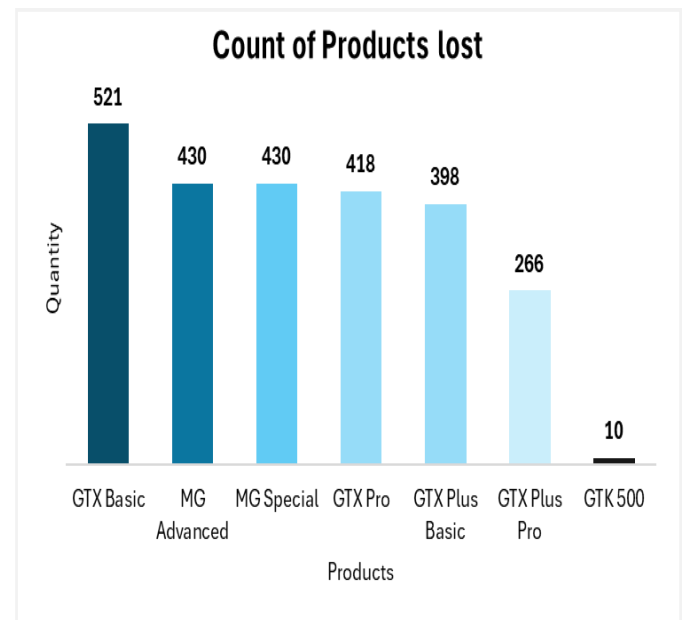
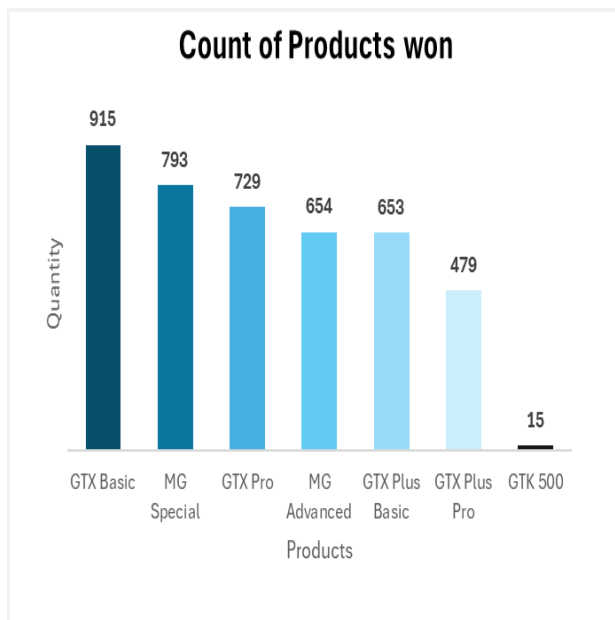
```

66 -- What are the number of won and lost deals by product?
67 SELECT
68     t1.product,
69     t1.total_won_deals,
70     t2.total_lost_deals
71 FROM (
72     SELECT
73         product,
74         COUNT(*) total_won_deals
75     FROM sales_pipeline
76     WHERE deal_stage = 'won'
77     GROUP BY product) AS t1
78 JOIN
79     (SELECT
80         product,
81         COUNT(*) total_lost_deals
82     FROM sales_pipeline
83     WHERE deal_stage = 'Lost'
84     GROUP BY product) AS t2
85 ON t1.product = t2.product
86 ORDER BY 2 DESC;
87
88

```

Data Output Messages Graph Visualiser Notification

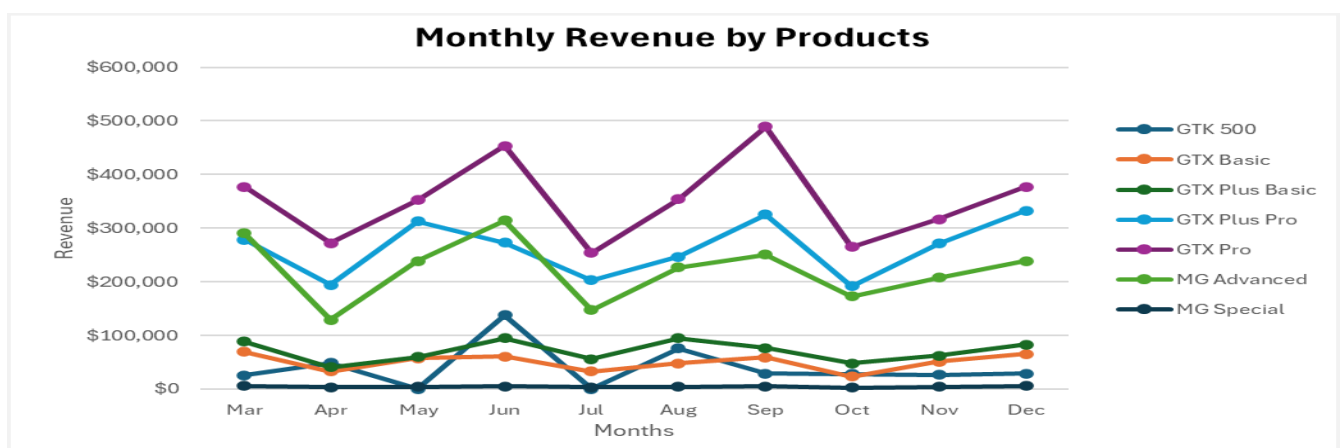
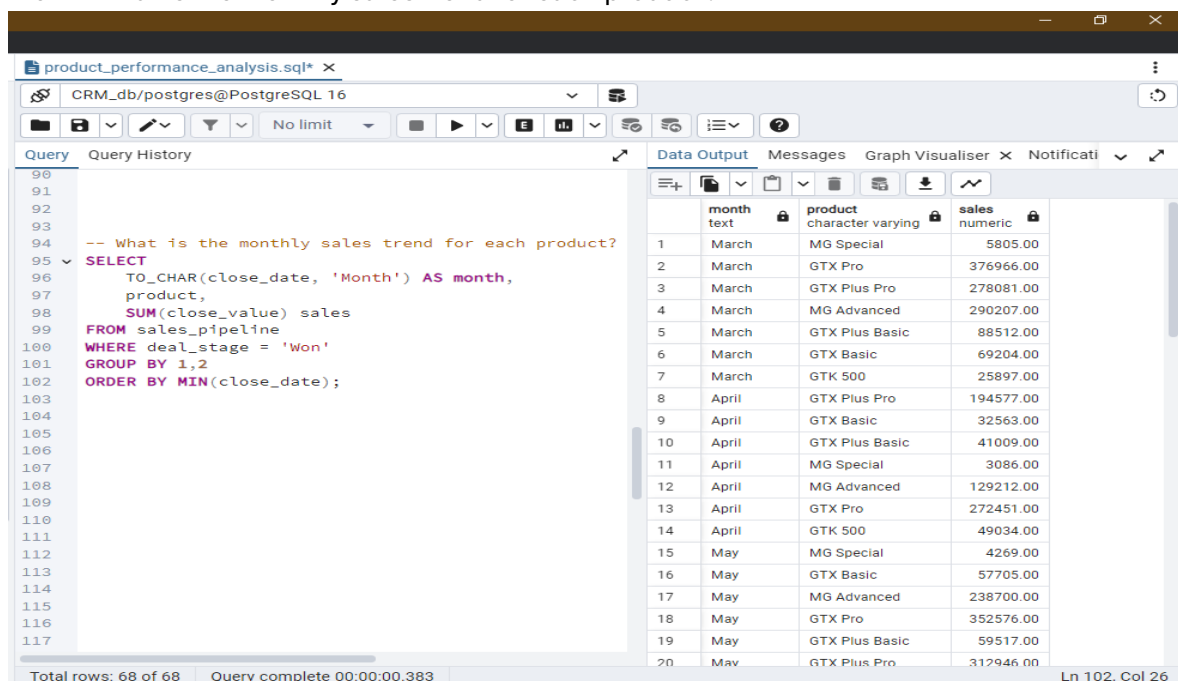
	product character varying	total_won_deals bigint	total_lost_deals bigint
1	GTX Basic	915	521
2	MG Special	793	430
3	GTX Pro	729	418
4	MG Advanced	654	430
5	GTX Plus Basic	653	398
6	GTX Plus Pro	479	266
7	GTK 500	15	10



The table shows that, the GTX Basic had the highest number of won deals and lost deals compared to the remaining products.

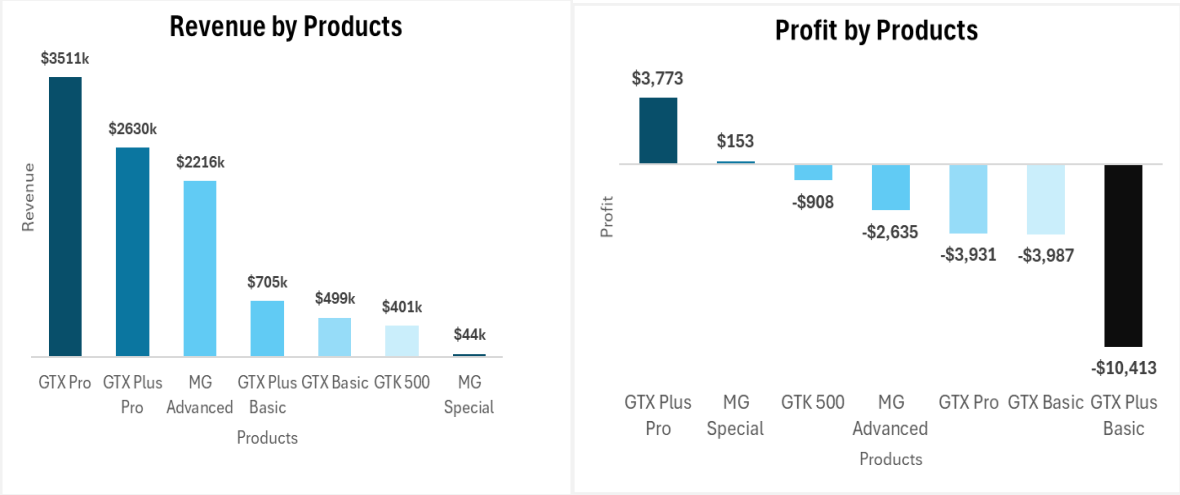
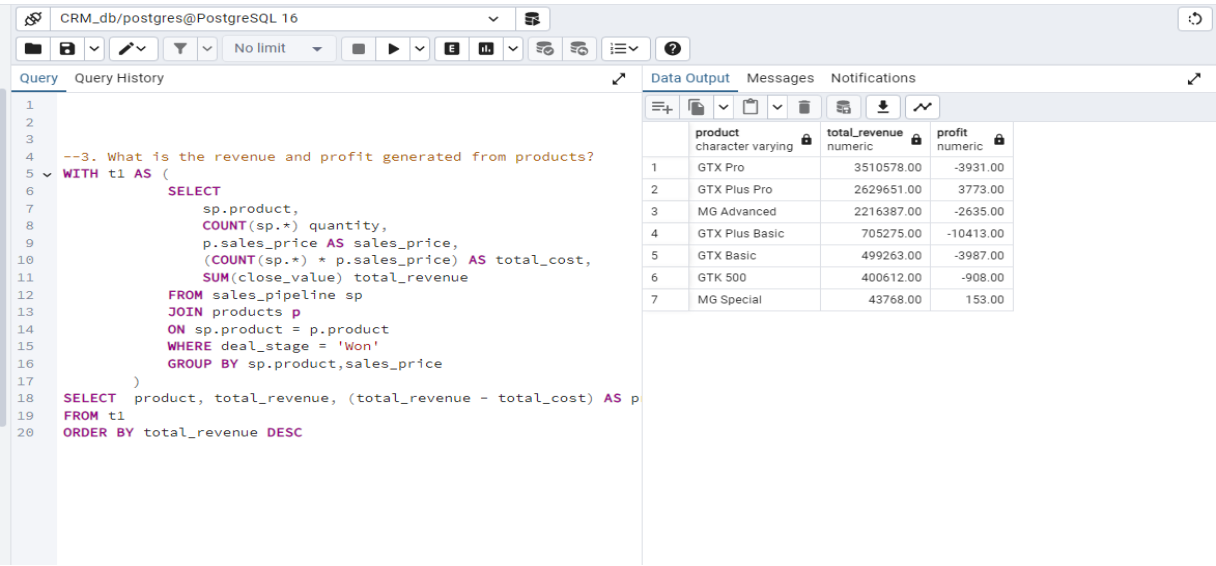
GTX Basic has the most significant sales activity in terms of both successful and unsuccessful deals.

6. What is the monthly sales trend for each product?



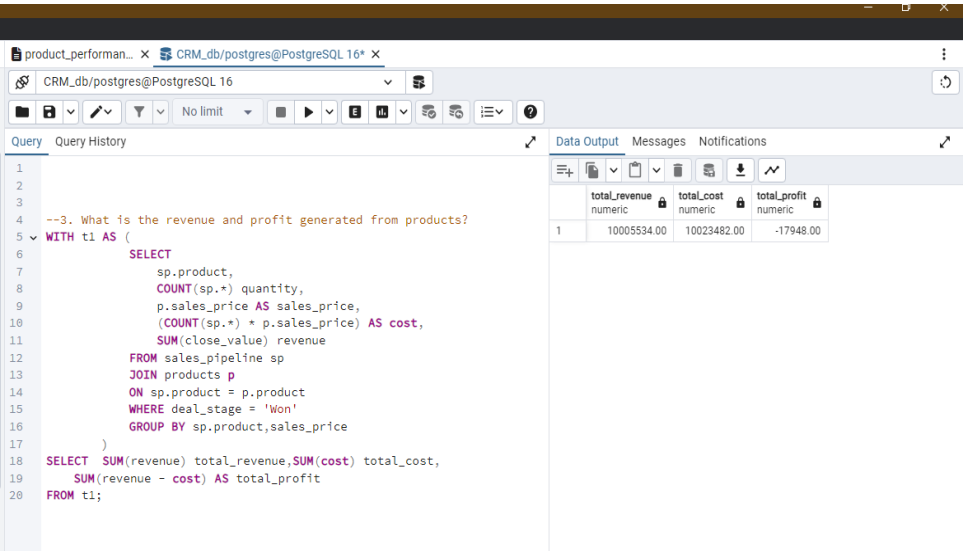
Products like MG Special, GTX Basic, GTX Plus Basic recorded the lowest points in revenue across the months. GTX Pro brought in the highest revenue across the months with few fluctuations.

7. What is the revenue and profit generated by each product?



Despite having a lower revenue compared with GTX Pro, GTX Plus Pro becomes the most profitable product followed by MG Special which generates the least revenue.

8. Is the company gaining or losing?

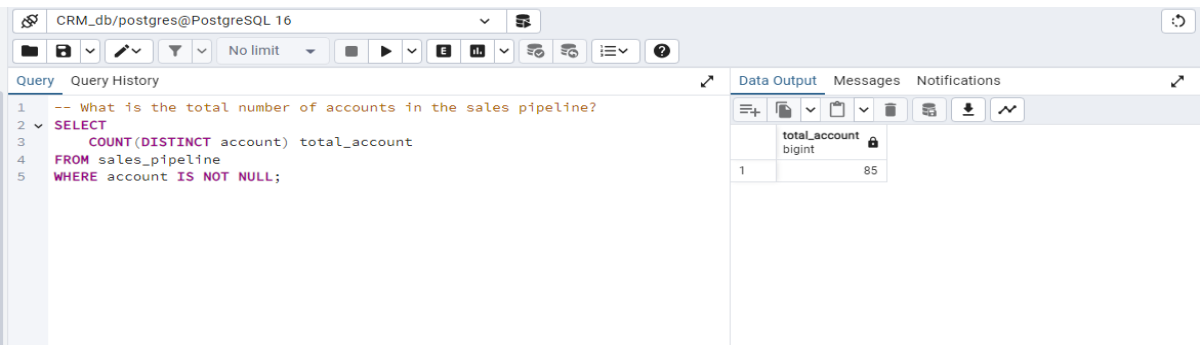


The company is currently losing money. Despite having a revenue of \$10,005,534, the negative profit indicates that the company's expenses are exceeding its revenue. It would be crucial for

the company to assess its cost structure and revenue streams to work towards achieving profitability.

- **Account Analysis**

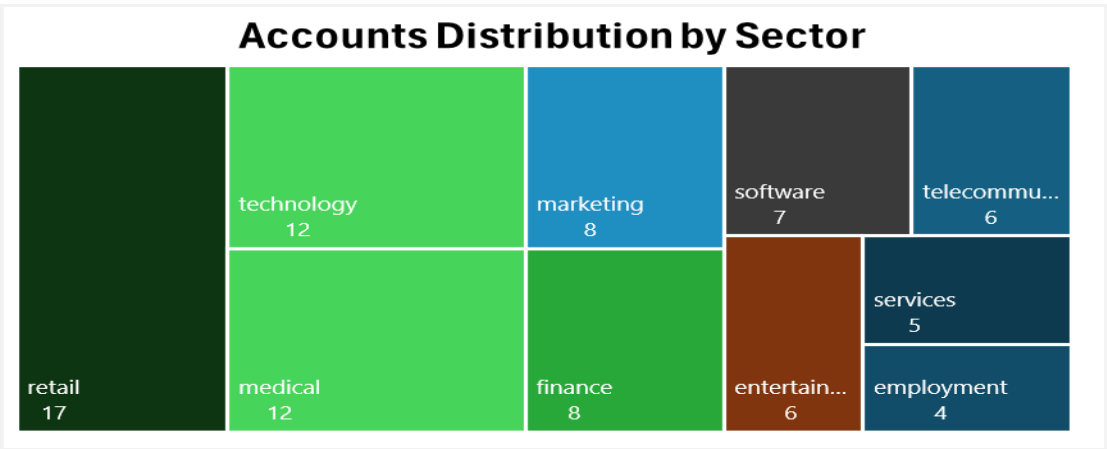
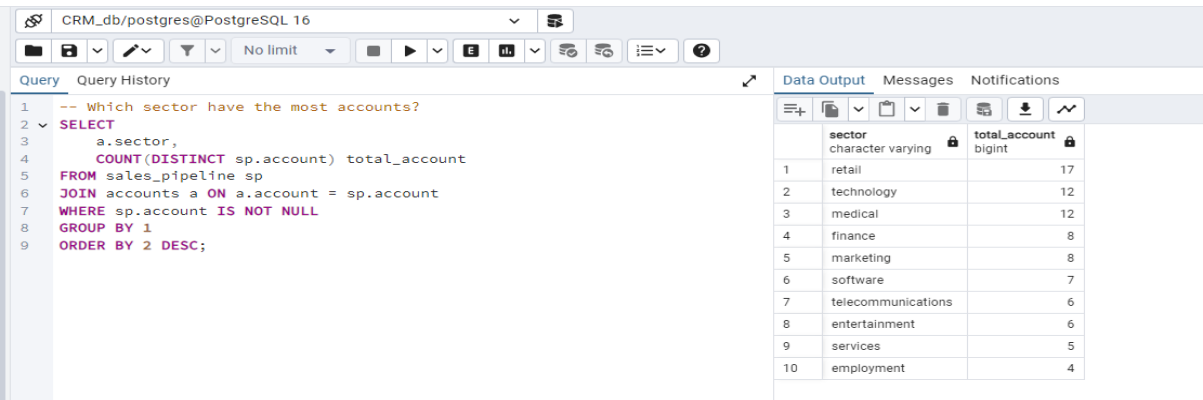
1. What is the total number of accounts in the sales pipeline?



The total number of accounts managed by the company over the period is : 85

2. Which sector have the most accounts?

Segmenting clients into sector allows the business to tailor services, develop targeted marketing strategies, and identifying new business opportunities.

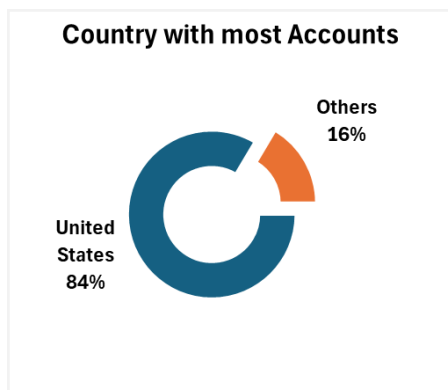


The highest number of the clients come from the retail sector, followed by technology and medical, ranking the same. This distribution of clients across different sectors provides insight into the company’s client base diversification.

3. Which region are most accounts situated?

Segmenting clients by region of operation is important because it helps understand local market dynamics, optimize resource allocation, and develop strategic marketing strategies.

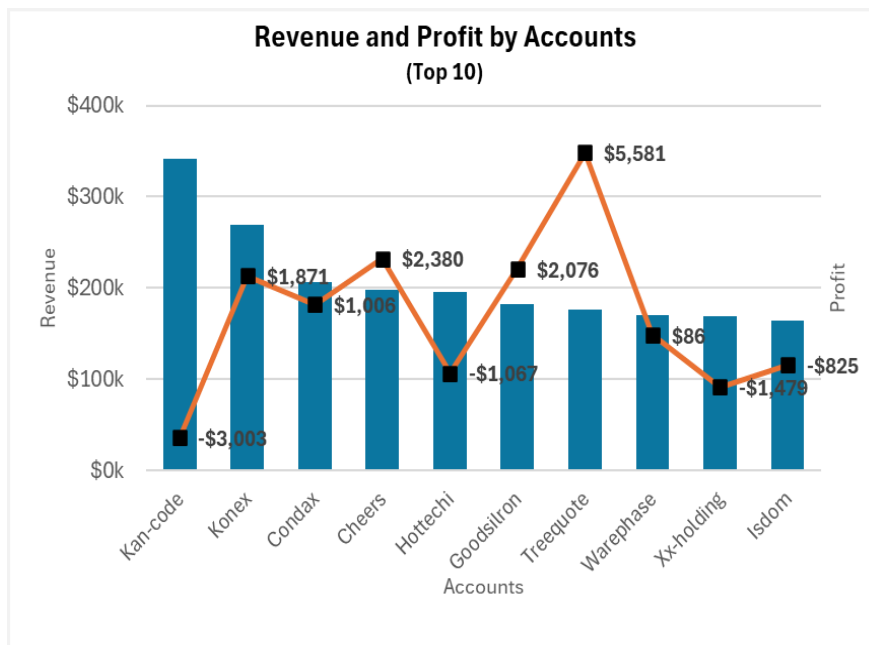
CRM_db/postgres@PostgreSQL 16



The United States represents the highest number of our clients. The remaining clients are shared on a ratio of 1:1 among the rest of the countries (14).

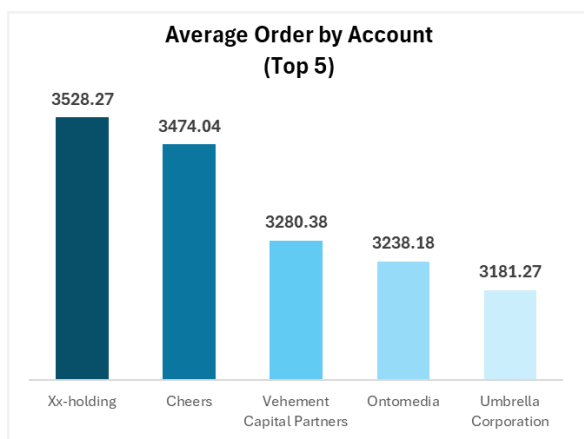
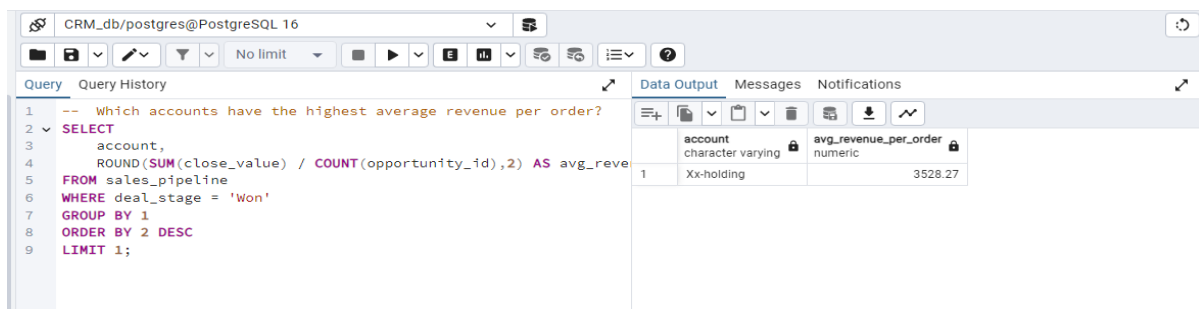
4. What is the revenue and profit generated from each account?

<



Highest amount of the revenue is generated from dealings with 'Kan-code' but the company experience loss after closing deals with them.

5. Which accounts have the highest average revenue per order?



The average per sale of \$3528.27 from 'Xx-holding' implies that, on average, each sale placed by the account amounts to \$3528.27. This information can be valuable for understanding the accounts purchasing pattern.

6. What is the revenue and profit generated from each sector?

This metric would guide us into determining which sectors have high revenue and profit growth potential.

CRM_db/postgres@PostgreSQL 16* × accounts_performa... ×

CRM_db/postgres@PostgreSQL 16

Query Query History

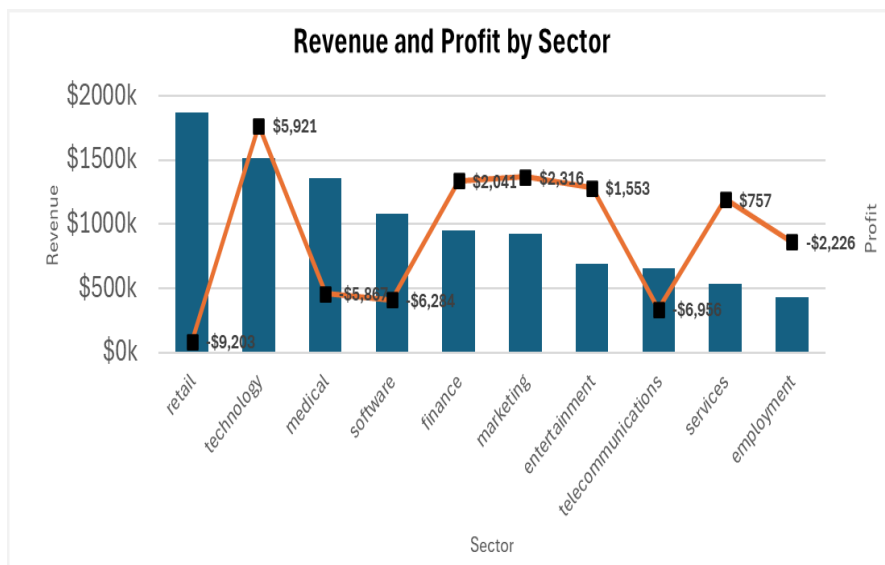
```

1
2
3
4 -- What is the revenue and profit generated from each sector?
5 WITH t1 AS (
6     SELECT
7         a.sector,
8         sp.product,
9         COUNT(sp.*) quantity,
10        p.sales_price AS sales_price,
11        (COUNT(sp.*) * p.sales_price) AS cost,
12        SUM(close_value) revenue
13    FROM sales_pipeline sp
14    JOIN products p
15    ON sp.product = p.product
16    JOIN accounts a
17    ON a.account = sp.account
18    WHERE deal_stage = 'Won'
19    GROUP BY a.sector, sp.product, sales_price
20 )
21 SELECT sector, SUM(revenue) total_revenue,
22        SUM(revenue - cost) AS total_profit
23 FROM t1
24 GROUP BY 1
25 ORDER BY total_revenue DESC

```

Data Output Messages Notifications

	sector	character varying	total_revenue	numeric	total_profit	numeric
1	retail		1867528.00		-9203.00	
2	technology		1515487.00		5921.00	
3	medical		1359595.00		-5867.00	
4	software		1077934.00		-6284.00	
5	finance		950908.00		2041.00	
6	marketing		922321.00		2316.00	
7	entertainment		689007.00		1553.00	
8	telecommunications		653574.00		-6956.00	
9	services		533006.00		757.00	
10	employment		436174.00		-2226.00	



Technology is the first sector that has higher revenue and upward profit comparing with the retail sector that has the highest revenue but negative profit.

7. What is the revenue and profit generated from each office location?

Analyzing revenue and profit from each location will help the company allocate resources effectively to maximize returns in each location and develop location-specific strategies to address unique challenges in each location.

CRM_db/postgres@PostgreSQL 16

CRM_db/postgres@PostgreSQL 16

Query Query History

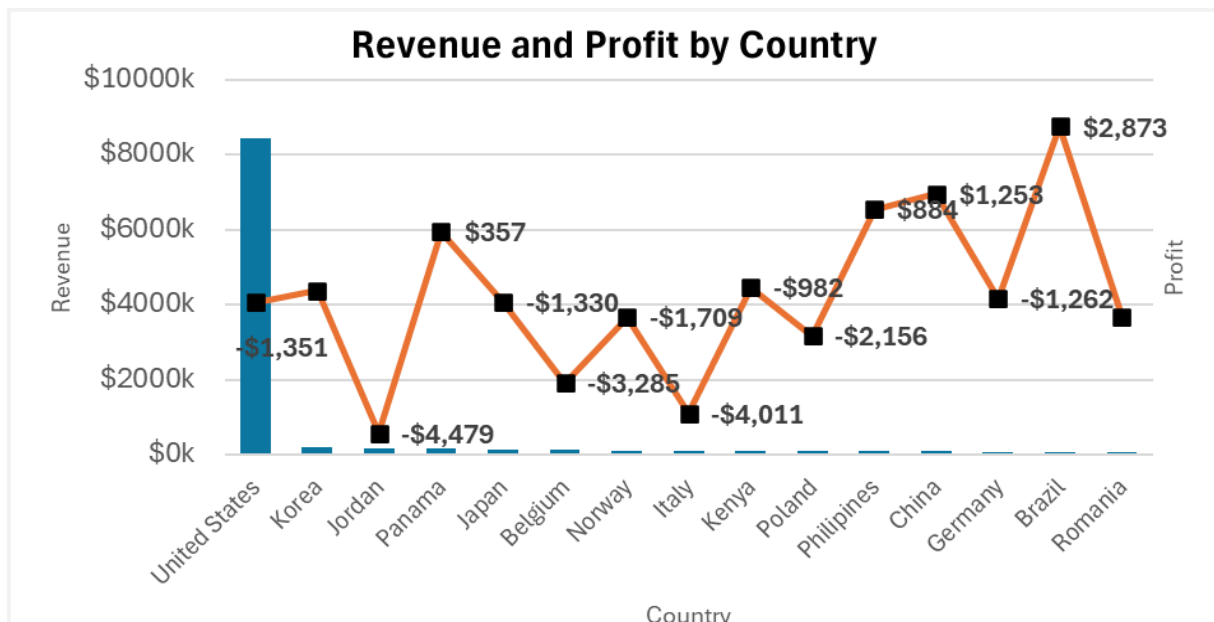
```

1
2
3
4 -- What is the revenue and profit generated from each office location?
5 WITH t1 AS (
6     SELECT
7         a.office_loc location,
8         sp.product,
9         COUNT(sp.*) quantity,
10        p.sales_price AS sales_price,
11        (COUNT(sp.*) * p.sales_price) AS cost,
12        SUM(close_value) revenue
13    FROM sales_pipeline sp
14    JOIN products p
15    ON sp.product = p.product
16    JOIN accounts a
17    ON a.account = sp.account
18    WHERE deal_stage = 'Won'
19    GROUP BY location, sp.product, sales_price
20 )
21 SELECT location, SUM(revenue) total_revenue,
22        SUM(revenue - cost) AS total_profit
23 FROM t1
24 GROUP BY 1
25 ORDER BY total_revenue DESC

```

Data Output Messages Notifications

	location	character varying	total_revenue	numeric	total_profit	numeric
1	United States		8426955.00		-1351.00	
2	Korea		194957.00		-1067.00	
3	Jordan		163339.00		-4479.00	
4	Panama		151777.00		357.00	
5	Japan		123506.00		-1330.00	
6	Belgium		117463.00		-3285.00	
7	Norway		115712.00		-1709.00	
8	Italy		114352.00		-4011.00	
9	Kenya		107408.00		-982.00	
10	Poland		106754.00		-2156.00	
11	Philippines		90991.00		884.00	
12	China		86690.00		1253.00	
13	Germany		82622.00		-1262.00	
14	Brazil		63103.00		2873.00	
15	Romania		59905.00		-1683.00	



Despite having the largest revenue, United States have a negative profit. Brazil and China have the highest profit comparing them to locations like United states, Korea, Jordan which have higher revenue but negative profit.

Conclusion

Key Findings:

1. The total number of deals generated which covered the period of October 2016 to December 2017 was 8,800.
2. Out of the 8,800 deals, the data showed almost half (48.1%) of the deals have been won, the company continues to engage with about 18.06% of the deals, lost about 28.10% of the deals and about 5.6% of the deals are at the prospecting stage.
3. The company engaged with a total number of 85 accounts segmented into different sectors (retail, technology, medical, etc.) situated in 15 locations from around the world.
4. A higher number (17) of our clients are categorized under the retail sector, followed by the technology sector (12), and medical sector (12).
5. Employment sector hosts the least of our client (4).
6. 85% of our clients are in the United States with the remaining accounts distributed squarely across the remaining locations.
7. The number of deals gradually increased from January to October with some fluctuations. The highest number of deals occurred in July whilst Deal activities drastically drops around November and December.
8. January recorded the least deals confirming the assertion that, the first month of the year can be a natural slowdown period as companies regain momentum. However, we will need more data to cement the assertion.
9. Despite having the highest number of deals, July recorded the highest number of lost deals over time and recorded the highest number of deals in the engaging stage.
10. Highest Number of close won deals occurred in March and June, followed closely by December and September.
11. The number of close lost deals of these months were relatively small compared to the rest of the months.
12. We discovered that, deals that are closed faster (41 days) are more likely to result in lost opportunities. On the other hand, the longer average deal length for won deals (52 days) indicates that taking more time to nurture and close deals may lead to higher success rates.

13. The sales team operate in 3 regional offices (West, East, Central), with each of them having two (2) sales managers managing the operations of twelve (12) agents from West and East respectively, and 11 agents at the Central office.
14. For top sales agent, we deduced that, agent 'Darcel Schlecht' has been more actively engaging with a larger number of deals and has a higher overall deal count. He has the highest total revenue but negative profit.
15. For top sales managers, 'Rocco Neubert' has a lower revenue compared to 'Melvin Marxen' but generates the highest profit among his peers followed by 'Melvin Marxen' who has the highest revenue but lower profit compared to 'Rocco Neubert'.
16. The regions that have higher deals, higher revenues (West, and Central) rather incur loss to the company.
17. We established that for each product type, there is a sales agent who is effective at selling the product to maximize revenue and profit growth.
18. The total number of products sold over the period was: 4,238 and generated a total revenue of \$10,005,534.00.
19. The highest quantity of products is sold around June, March, December, and September, which reflects the sales values for these months respectively.
20. GTX Basic had the highest number of won deals (915) and lost deals (521) compared to the remaining products.
21. Despite having highest number of won deals, GTX Basic has lower revenue and negative profit, and this is mainly due to it having the lowest selling price.
22. GTX Plus Pro generates the highest profit and second higher revenue compared to GTX Pro.
23. In terms of revenue, the 'Kan-code' account generates the highest revenue but has negative profit.
24. In terms of profit, 'Groovestreet' account brings the most profit but has lower revenue compared to 'Kan-code' account.
25. Account with the highest average per sale value is 'Xx-holding' with \$3528.27 which implies that, on average, each sale placed by the account amounts to \$3528.27.
26. With respect to revenue and profit from sectors, the technology sector generates most profit, but less revenue compared to the retail sector, which generated the highest revenue but a negative profit.
27. Brazil and China have the highest profit comparing them to locations like United states, Korea, Jordan which have higher revenue but negative profit.
28. At the end of the period, the company's estimated revenue was \$100,234,82 but generated a revenue of \$100,055,34. Implying that, the company incurred a loss of \$17,948.

RECOMMENDATIONS:

The aim of this section is to highlight practical recommendations based on the findings from the analysis.

This recommendation will focus on;

1. Strategies that can be applied to convert the remaining 24% deals at the engaging and prospecting stage to a close won state.

To convert the remaining 24% of deals to a close won state, you can focus on implementing targeted strategies.

One effective approach is to personalize your sales pitch and tailor it to the specific needs of each of the clients.

To tailor sales pitch to a specific client, you need to do an extensive market research to understand your clients, their unique needs and preferences through surveys, and feedback from previous interactions. By crafting your message to resonate with the clients' unique

situations and offering solutions that directly align with their objectives, you can demonstrate a genuine understanding of their business and increase the likelihood of a successful sale.

To reduce lost deals and also move deals forward, the company should;

- a. Enhance sales techniques and consider training or coaching for sales reps.
- b. Provide targeted training low performing agents, helping them learn from the best practices of the top performing agents.
- c. Ensure that Agents have in-depth knowledge of the offer, and match deals to agents best suited to deliver, leading to higher won deals and increased revenue and profit.
- d. Identify the most effective sales approaches, value propositions, and messaging for the deal.
- e. The company can allocate resources to effectively manage sales in prospecting and engaging state that require more support to boost revenue growth.
- f. Prioritize on running surveys specifically in high revenue generated countries such as United States to receive feedback on products they already interacted with to generate discerning insights that can guide you in making decisions and refine strategies for better results.

2. Strategies to adjust pricing and combat clients buying products below the retail price.

When clients buy products at a lower cost than the retail price set by your company, it can have numerous implications.

It may indicate that there is intense competition in the market, leading to price wars and decreased profit margins for your company. This situation could potentially harm the overall profitability and sustainability of the company. It is therefore crucial to judiciously analyze the pricing strategy, market dynamics, and clients' behavior to address these challenges efficiently.

To fine-tune pricing, you can consider implementing dynamic pricing strategies. This strategy encompasses setting prices based on market demand, competitor pricing, and customer behavior. To take on this strategy, there is a need-to-know preferences and price sensitivity to tailor pricing strategies to maximize profits while remaining competitive in the market.

Additionally, offering value-added services can help justify higher prices and differentiate your offers from those sold at lower prices elsewhere.

By addressing these challenges and implementing a comprehensive crafted and flexible strategies, the company can successfully win deals while increasing revenue and profit.

THE DASHBOARD



Distribution of deals by Stages

Stage	Count	Percentage
Prospecting	4238	48%
Engaging	1589	18%
Lost	2473	26%
Won	500	6%

Total Deals (Monthly Trend)

Month	Total Deals
Jan	500
Feb	312
Mar	515
Apr	792
May	874
Jun	772
Jul	795
Aug	1198
Sep	793
Oct	779
Nov	768
Dec	398

regional_office

Central

East

West

sector

employment

entertainment

finance

marketing

medical

retail

services

software

technology

product

GTK 500

GTK Basic

GTK Plus Basic

GTK Plus Pro

Closed Deals by Month Trend

Best Sales Agent of each Product

Average Deal Length in Days

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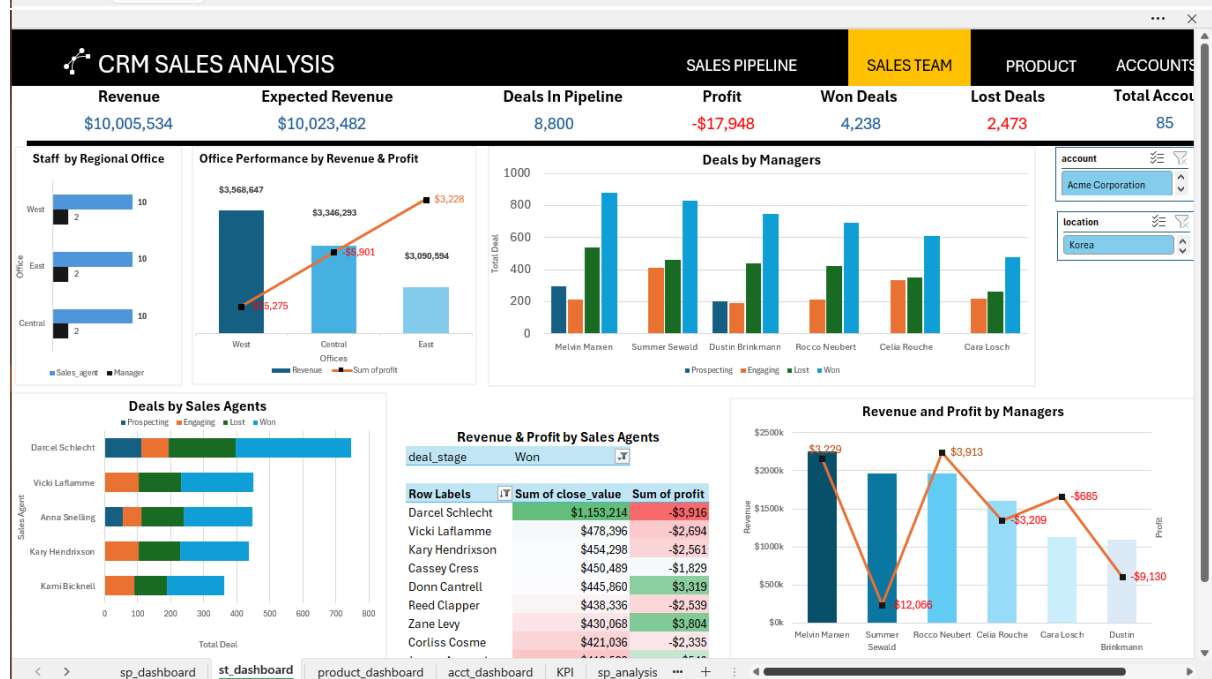
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Staff by Regional Office

Office Performance by Revenue & Profit

Deals by Managers

account

Acme Corporation

location

Korea

Deals by Sales Agents

Revenue & Profit by Sales Agents

Row Labels	Sum of close_value	Sum of profit
Darcel Schlecht	\$1,153,214	-\$3,916
Vicki Laflamme	\$478,396	-\$2,694
Kary Hendrixson	\$454,298	-\$2,561
Cassey Cress	\$450,489	-\$1,829
Donn Cantrell	\$445,860	\$3,319
Reed Clapper	\$438,336	-\$2,539
Zane Levy	\$430,068	\$3,804
Corliss Cosme	\$421,036	-\$2,335

Revenue and Profit by Managers

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KPI

sp_analysis

