01

NTI PROJECT ANALYSIS – BIKESTORES DATABASE

Understanding sales data is essential for businesses to enhance performance, identify customer preferences, and adapt to market trends.

Data Insights

Step-by-Step Approach

Comprehensive Strategy for Database Setup, Querying, and Analysis

Database Setup

Initiated the process by loading the BikeStore database using the provided SQL file within SQL Server Management Studio (SSMS). Established essential connections to the database, enabling seamless querying for data extraction.

Querying

Conducted a series of SQL queries to efficiently extract relevant data from multiple tables, including sales records, customer information, product details, and store locations. This step is crucial for gathering comprehensive insights.

Data Analysis

Performed in-depth analysis of the extracted data to address targeted business questions and uncover trends. Employed advanced SQL functions such as JOIN, GROUP BY, and various aggregate functions to enhance data interpretation and derive actionable insights.

Conclusion

This systematic approach not only ensures a thorough examination of the data but also equips decision-makers with the insights needed for informed business strategies and improved operational efficiency.

SQL Analysis

Key SQL Queries

Key Concepts and Examples

Joins

01 Utilized INNER JOIN to merge data from Customers, Orders, and Products tables, offering a holistic view of sales transactions for better decision-making.

Joins Example

02 Example SQL Query: SELECT Customers.FirstName, Customers.LastName, Orders.OrderStatus FROM Customers INNER JOIN Orders ON Customers.CustomerID = Orders.CustomerID; This query illustrates how to extract customer names alongside their order status.

Aggregations

03 Implemented aggregate functions like COUNT, SUM, and AVG to distill data into meaningful summaries, enabling quick insights into performance metrics.

Aggregations Example

04 Example SQL Query: SELECT StoreID, SUM(ListPrice * Quantity * (1 - Discount)) AS SalesRevenue FROM OrderDetails GROUP BY StoreID; This summarizes sales revenue by store, highlighting performance.

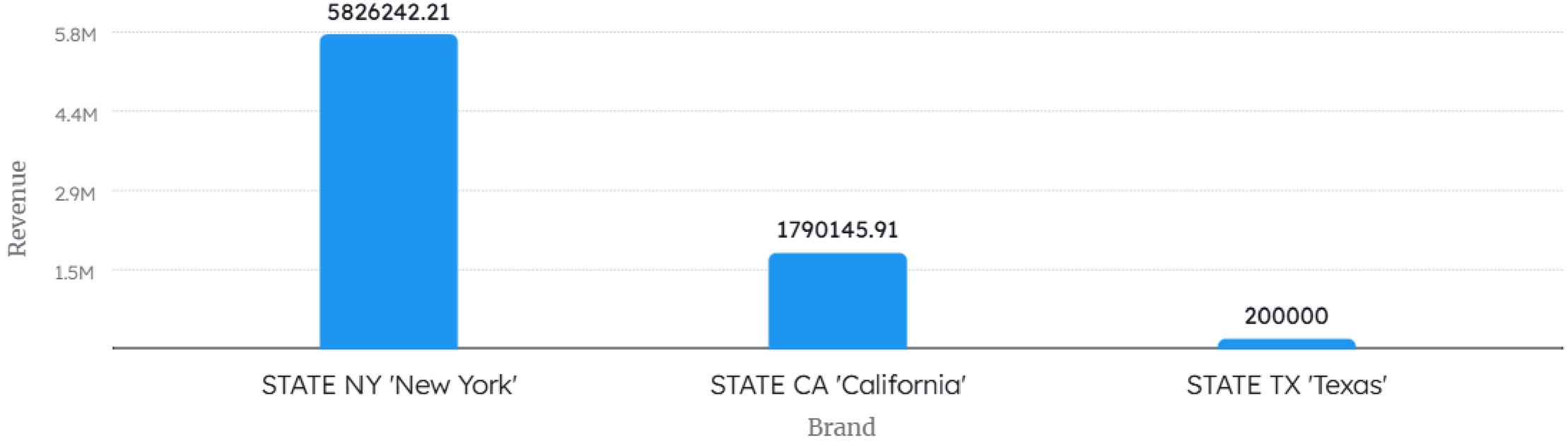
Performance Insights

05 Evaluated query performance by reviewing execution plans and tuning slow queries, ensuring data retrieval processes are efficient and effective, which is crucial for real-time analytics.

Sales Insights

Visualized Results: Key Findings

A Visual Insight into Sales Performance



Source: Companies Market Cap

Brand Performance

Revenue per store

Sales Revenue Comparison

store name	Sales Revenue
Santa Cruz Bikes	$1605823.0365
Rowlett Bikes	$867542.2436
Baldwin Bikes	$5215751.2775

Rejection Insights

Least-Liked Categories

Analysis of Rejection Rates

Category	Total Sold
Cyclocross Bicycles	5
Electric Bikes	7

Inventory Overview

Store Inventory Analysis

Overview of Inventory Levels Across Stores

Store	Inventory Level
Santa Cruz Bikes	1715
Rowlett Bikes	1691
Baldwin Bikes	1592

Future Improvements

Conclusion and Future Improvements

Insights from Sales Data Analysis

Dashboards

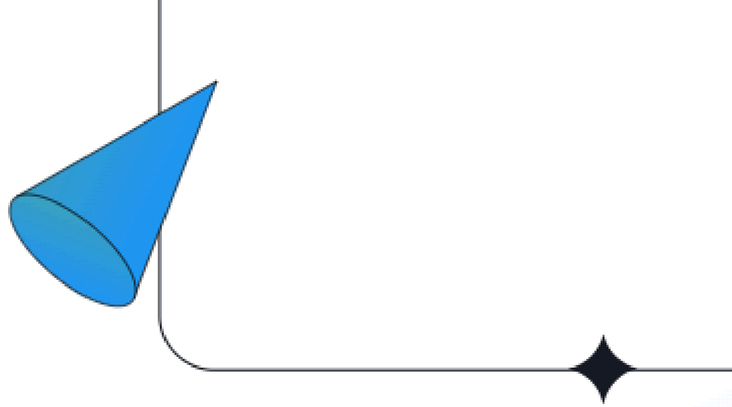
Developing interactive dashboards will allow for real-time data visualization, enabling stakeholders to make informed decisions based on up-to-date information.

Stock Prediction

Implementing predictive analytics can forecast stock needs by analyzing historical sales data, helping to prevent stockouts and overstock situations.

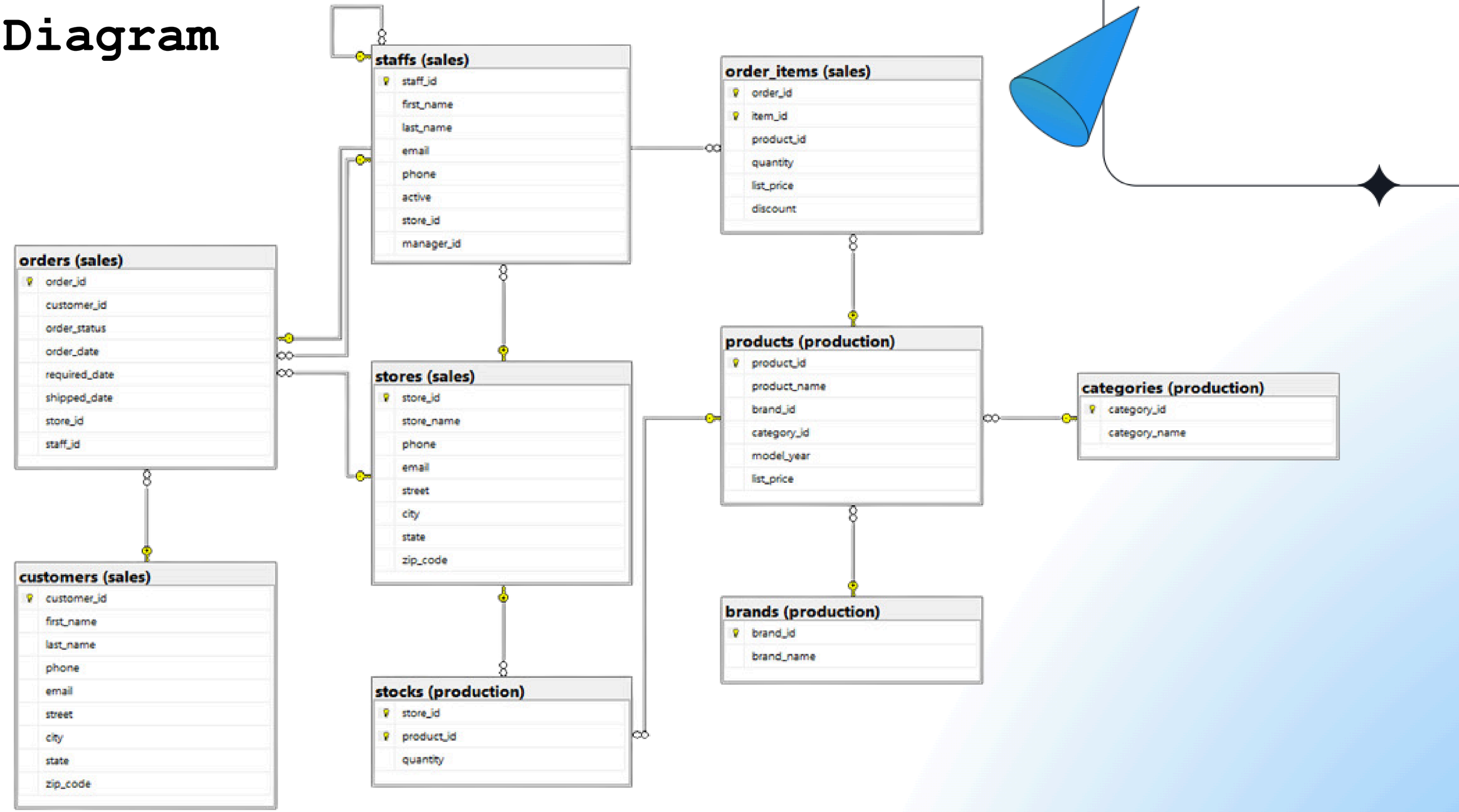
Enhanced Customer Segmentation

Utilizing advanced SQL techniques for customer segmentation will facilitate targeted marketing campaigns, improving engagement and conversion rates.



More Analysis Using SQL

DB Diagram


staffs (sales)
staff_id
first_name
last_name
email
phone
active
store_id
manager_id
order_items (sales)
order_id
item_id
product_id
quantity
list_price
discount
orders (sales)
order_id
customer_id
order_status
order_date
required_date
shipped_date
store_id
staff_id
stores (sales)
store_id
store_name
phone
email
street
city
state
zip_code
products (production)
product_id
product_name
brand_id
category_id
model_year
list_price
categories (production)
category_id
category_name
customers (sales)
customer_id
first_name
last_name
phone
email
street
city
state
zip_code
stocks (production)
store_id
product_id
quantity
brands (production)
brand_id
brand_name

```sql
 -2)How many total customers does BikeStore have?
select
    count(distinct customer_id) AS '#customer'
from sales.customers
```

	#customer
1	1445

```sql
--13) Which brand is the most liked?
SELECT TOP 1
    b.brand_name,
    sum(oi.quantity) AS total_quantity_sold
FROM
    production.brands b JOIN production.products p
ON b.brand_id = p.brand_id
                        JOIN sales.order_items oi
ON p.product_id = oi.product_id
GROUP BY b.brand_name
ORDER BY total_quantity_sold DESC
```

	brand_name	total_quantity_sold
1	Electra	2612

```sql
--1) Which bike is most expensive?
SELECT top 1
    product_name,
    list_price
FROM production.products
order by list_price desc;
```

	product_name	list_price
1	Trek Domane SLR 9 Disc - 2018	11999.99

```sql
--3)How many stores does BikeStore have?
SELECT
    count(store_id) AS '#stores'
FROM sales.stores
```

	#stores
1	3

```sql
--8) Which bike is the least sold?
SELECT TOP 1
    p.product_name,
    sum(distinct ps.quantity) AS total_quantity
FROM
    production.products p JOIN production.stocks ps
ON p.product_id = ps.product_id
GROUP BY p.product_id, p.product_name
ORDER BY total_quantity ASC
```

	product_name	total_quantity
1	Trek Domane SLR Frameset - 2018	5

```sql
--12) How many staff does BikeStore have? Who seems to be the lead Staff at BikeStore?
SELECT
    COUNT(staff_id) #OfStaff

FROM
    sales.staffs
-- lead staff
SELECT first_name + ' ' + last_name AS Full_name
From sales.staffs
Where manager_id IS NULL
```

	#OfStaff
1	10

	Full_name
1	Fabiola Jackson

```sql
-- 23) How many orders are still pending?
SELECT COUNT(*) AS PendingOrders
FROM sales.orders
WHERE order_status = 1;
```

NB: **Order Status** 1= Pending

2= Processing

3= Rejected

4= Completed

	PendingOrders
1	62

SQL Insights

Key Takeaways

Summary of Insights

Powerful Data Analysis Tool

SQL provides robust capabilities for analyzing sales data, allowing businesses to uncover valuable insights that drive strategic decisions.

Structured Database Management

A systematic approach to database setup, querying, and analysis is essential for ensuring effective data management and retrieval.

Essential SQL Queries

Key SQL queries such as joins and aggregations are crucial for extracting insights from complex datasets, facilitating informed decision-making.

Visualized Results

Presenting results through visualizations enhances clarity on findings, making it easier for stakeholders to interpret data and make decisions.

Continuous Improvement

Regularly enhancing data analysis practices can significantly boost business performance and improve customer satisfaction over time.

THANK YOU

FOR YOUR ATTENTION