

Next Gen Retail Analytics Dashboard

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Mission Statement

At New Gen Retail Analytics, our mission is to revolutionize the retail sector through the strategic use of comprehensive data analytics. Our commitment is to deliver a state-of-the-art dashboard seamlessly integrating key variables — Product, Customer, Supplier, Sales, Employee, Rating, Stores and Profitability. We envision a dynamic transformation of raw data into actionable insights, empowering our clients to make informed decisions, optimize operations, and elevate customer experiences.

Our mission extends beyond data integration, it is a pledge to redefine the retail analytics landscape. We aspire to be the driving force behind adaptability, ensuring our clients not only keep pace with industry shifts but lead them. By streamlining operations through data-driven precision, our dashboard becomes a strategic guide, fostering operational excellence.

Customer experiences are paramount in our mission. We facilitate a deep understanding of customer preferences, behavior, and satisfaction, enabling personalized interactions. Sustainability is ingrained in our approach, contributing to the creation of enduring growth models. In summary, our mission is to empower businesses with confidence, agility, and forward-thinking insights, propelling them toward sustainable success in the data-driven era.

Summary of Challenges

In the dynamic realm of the retail sector, the imperative of data-driven decision-making is integral to daily operations. Some prominent challenge facing businesses centers on the continual and instantaneous synchronization of data across diverse variables. The revolutionary New Gen retail analytics dashboard addresses this complex issue by transforming how businesses engage with and harness their data.

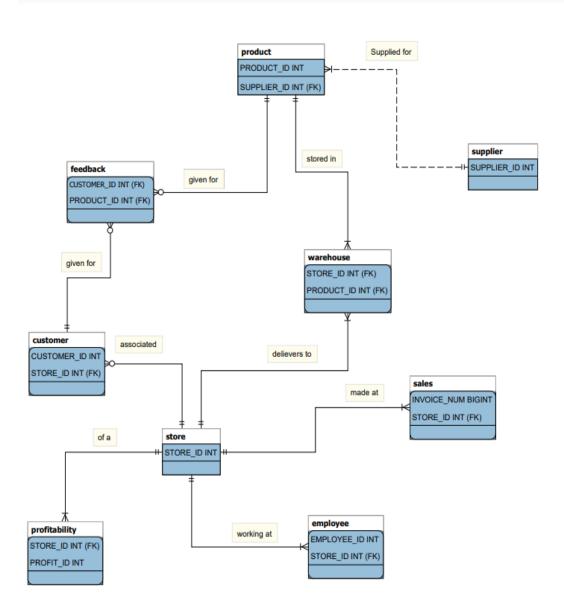
At the heart of this challenge lies the need for regular updates and real-time connectivity with critical data fields. In the conventional retail analytics landscape, data uploads and updates often occur at intervals that may not align with the rapid pace of change in the retail environment. This time lag in data refreshments presents a significant obstacle for businesses striving to maintain a competitive edge.

Moreover, the dashboard addresses the challenge of comprehensively connecting data with each field. In the absence of an integrated solution, businesses often encounter disjointed data, resulting in a fragmented view of operations. For instance, disconnected data might hinder the ability to correlate customer behavior with product preferences, impeding targeted marketing efforts. The New Gen retail analytics dashboard alleviates these issues by establishing a robust framework that interconnects data fields. This interconnectedness empowers businesses to draw correlations between variables, unlocking insights that were previously obscured.

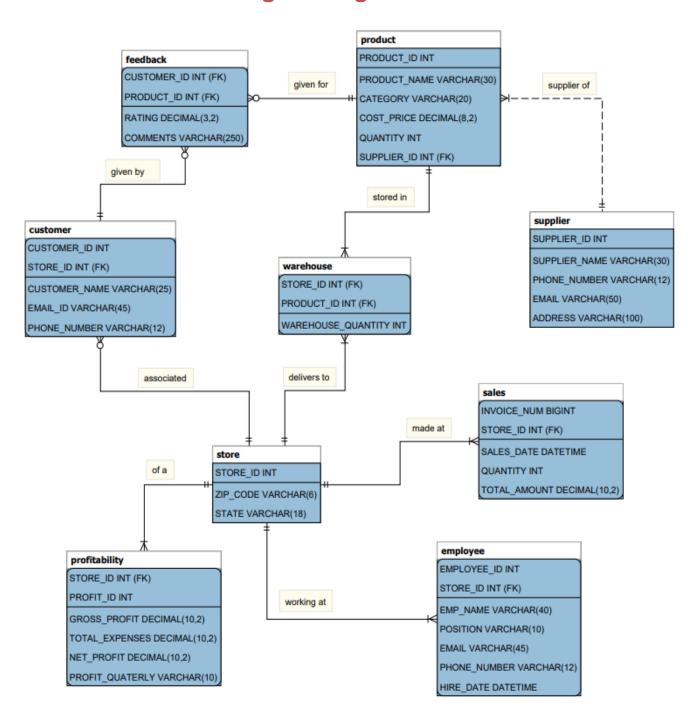
The importance of real-time data feeds becomes even more apparent in the context of customer satisfaction and engagement. In an era where customer expectations are rapidly evolving, businesses must be attuned to real-time feedback and sentiments. Delayed or outdated information in customer satisfaction metrics can lead to misguided strategies and missed opportunities to enhance the overall customer experience. The New Gen retail analytics dashboard addresses this critical aspect by ensuring that customer satisfaction data is continuously updated, enabling businesses to respond promptly to customer feedback and preferences.

In essence, the New Gen retail analytics dashboard not only recognizes the challenges posed by traditional data analytics methods but also presents a transformative solution. By providing a platform that facilitates real-time data updates, seamless connectivity across variables, and a holistic view of operations, the dashboard empowers businesses to navigate the complexities of the retail landscape with agility, precision, and an enhanced ability to meet evolving customer expectations. In doing so, it propels retail enterprises into a new era of data-driven decision-making, where timely insights pave the way for sustained growth and competitiveness.

ER Diagram



Logical Diagram



Queries

1.

Relevance:

The query provides visibility into workforce distribution across stores by presenting employee counts alongside store identifiers and location details. This information is instrumental in understanding staffing patterns and identifying stores with the highest employee presence, offering valuable insights into store management and resource allocation decisions in retail operations.

Query:

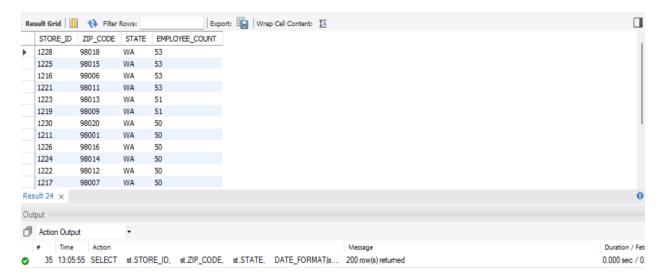
```
s.Store_id,
s.Zip_code,
s.State,
count(*) as employee_count

from
employee e

Join
store s on e.Store_id = s.Store_id

Group by
s.Store_id, s.Zip_code, s.State

Order by
EMPLOYEE count desc;
```



2.

Relevance:

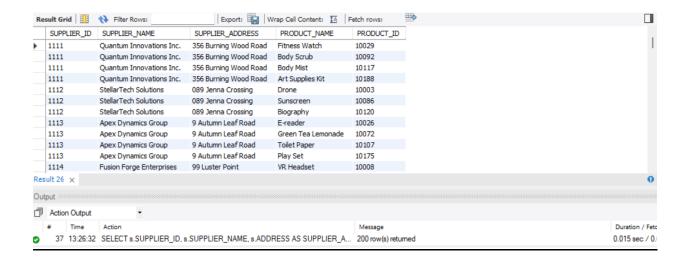
The query fetches supplier information alongside the products they provide, establishing connections between supplier IDs in the 'supplier' table and corresponding product entries. By incorporating supplier addresses, it enriches procurement analysis, offering valuable insights into supplier distribution and optimizing product sourcing strategies for retail analytics.

Query:

SELECT s.SUPPLIER_ID, s.SUPPLIER_NAME, s.ADDRESS AS SUPPLIER_ADDRESS, p.PRODUCT NAME, p.PRODUCT ID

FROM supplier s

JOIN product p ON s.SUPPLIER_ID = p.SUPPLIER_ID;



3.

Relevance:

The SQL query extracts vital product details such as ID, name, and category, alongside store IDs and ZIP codes. By incorporating store location information, it enriches the retail analytics dashboard, providing valuable insights into product distribution across various store locations. This data aids in optimizing inventory management and refining product placement strategies, ultimately enhancing sales performance analysis.

Query:

```
p.PRODUCT_ID,
p.PRODUCT_NAME,
p.CATEGORY,
w.STORE_ID,
s.ZIP_CODE

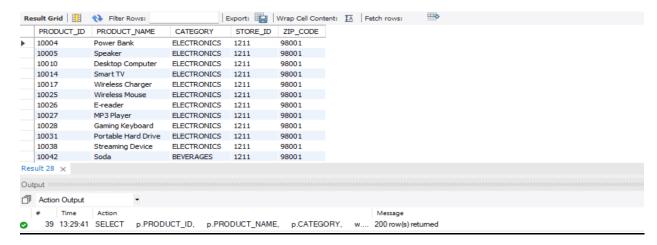
FROM
product p

JOIN
warehouse w ON p.PRODUCT ID = w.PRODUCT ID
```

JOIN

store s ON w.STORE ID = s.STORE ID;

Output:



4.

Relevance:

The query aggregates key financial indicators like total sales, gross profit, expenses, and net profit per store, providing a overall view of financial performance. By incorporating store identifiers, ZIP codes, and states, it offers geographical insights that can inform strategic decisions and enable performance benchmarking within the realm of retail analytics.

Query:

FROM

```
st.STORE_ID,
st.ZIP_CODE,
st.STATE,
SUM(s.TOTAL_AMOUNT) AS TOTAL_SALES_AMOUNT,
SUM(p.GROSS_PROFIT) AS TOTAL_GROSS_PROFIT,
SUM(p.TOTAL_EXPENSES) AS TOTAL_EXPENSES,
SUM(p.NET_PROFIT) AS TOTAL_NET_PROFIT
```

```
sales s

JOIN

store st ON s.STORE_ID = st.STORE_ID

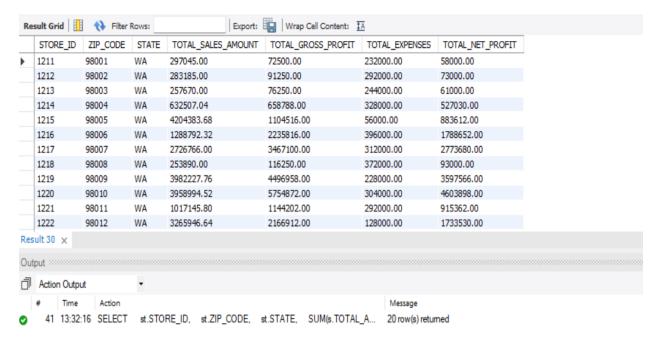
JOIN

profitability p ON p.STORE_ID = st.STORE_ID

GROUP BY

st.STORE_ID, st.ZIP_CODE, st.STATE;
```

Output:



5.

Relevance:

The query retrieves the store IDs, ZIP codes, and states along with the highest net profit and average gross profit for each store, facilitating analysis of store performance based on profitability metrics. It offers insights into the financial health of stores across different geographic locations in the retail analytics dashboard.

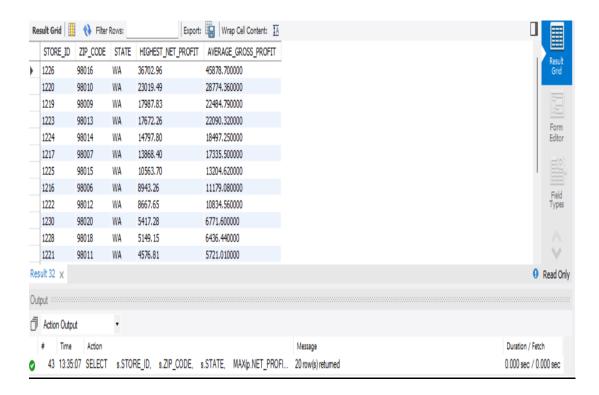
Query:

```
s.Store_id,
s.Zip_code,
s.State,
MAX(p.Net_profit) as highest_net_profit,
AVG(p.Gross_profit) as average_gross_profit
FROM
profitability p

JOIN
store s ON p.Store_id = s.Store_id

GROUP BY
s.Store_id, s.Zip_code, s.State

Order by
Highest_net_profit desc;
```



6.

Relevance:

The query provides insights into the distribution of products across different categories in the warehouse. By calculating the total quantity and total cost of products for each category, it facilitates inventory management and analysis for retail operations. This information aids in optimizing stock levels, identifying high-demand categories, and evaluating the cost-effectiveness of storing various product types.

Query:

```
p.CATEGORY,

SUM(w.WAREHOUSE_QUANTITY) AS TOTAL_QUANTITY,

SUM(w.WAREHOUSE_QUANTITY * p.COST_PRICE) AS

TOTAL_COST_OF_MATERIAL_IN_WAREHOUSE

FROM

product p
```

JOIN

warehouse w ON p.PRODUCT ID = w.PRODUCT ID

GROUP BY p.CATEGORY

ORDER BY TOTAL QUANTITY DESC;

Output:





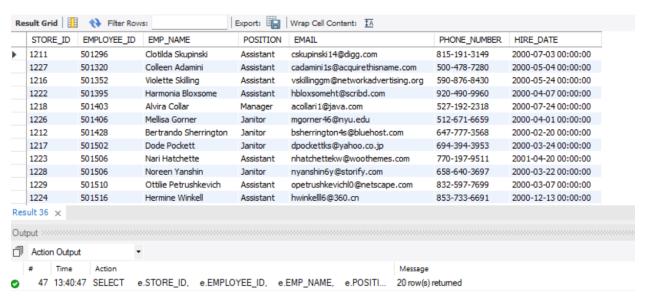
7.

Relevance:

The SQL query retrieves information about the most senior employees in each store based on their hire dates. By identifying employees with the earliest hire dates within each store, the query assists in recognizing long-standing staff members and understanding the workforce's tenure distribution across different store locations. This information is valuable for assessing employee retention, recognizing experienced personnel, and identifying potential candidates for leadership roles within the organization.

Query:

```
SELECT
 e.STORE ID,
 e.EMPLOYEE ID,
 e.EMP_NAME,
 e.POSITION,
 e.EMAIL,
  e.PHONE NUMBER,
  e.HIRE DATE
FROM
  employee e
JOIN
   SELECT
      STORE ID,
      MIN(HIRE_DATE) AS SENIOR_DATE
   FROM
      employee
   GROUP BY
      STORE_ID
  ) AS t ON e.STORE_ID = t.STORE_ID AND e.HIRE_DATE = t.SENIOR_DATE;
```

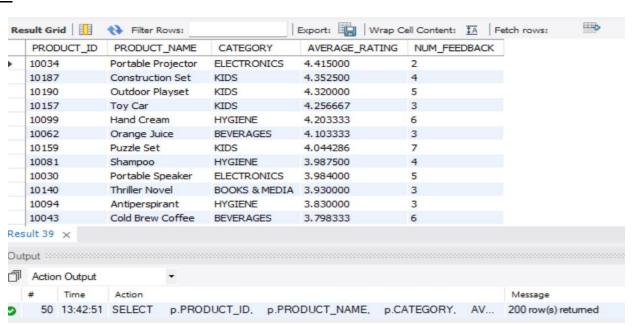


Relevance

The query retrieves product details along with their average ratings and the number of feedback entries, facilitating the identification of popular products based on customer feedback. By sorting the results by average rating and the number of feedback entries, retail analytics can gain insights into product performance and customer satisfaction, aiding in product optimization and marketing strategies.

Query:

```
p.PRODUCT_ID,
p.PRODUCT_NAME,
p.CATEGORY,
AVG(f.RATING) AS AVERAGE_RATING,
COUNT(f.RATING) AS NUM_FEEDBACK
FROM
product p
LEFT JOIN
feedback f ON p.PRODUCT_ID = f.PRODUCT_ID
GROUP BY
p.PRODUCT_ID, p.PRODUCT_NAME, p.CATEGORY
ORDER BY
AVERAGE RATING DESC, NUM_FEEDBACK DESC;
```



Relevance:

The query offers a comprehensive analysis of product performance within the retail analytics dashboard. By combining feedback count, average rating, and total quantity available for each product, retailers gain valuable insights into customer satisfaction, product popularity, and inventory management. This information enables data-driven decision-making to optimize product offerings, enhance customer experience, and maximize sales potential.

Query:

```
p.PRODUCT_ID,

p.PRODUCT_NAME,

p.CATEGORY,

COUNT(f.PRODUCT_ID) AS FEEDBACK_COUNT,

AVG(f.RATING) AS AVERAGE_RATING,

SUM(p.QUANTITY) AS TOTAL_QUANTITY_AVAILABLE

FROM

product p

LEFT JOIN

feedback f ON p.PRODUCT_ID = f.PRODUCT_ID

GROUP BY

p.PRODUCT_ID, p.PRODUCT_NAME, p.CATEGORY

ORDER BY

FEEDBACK COUNT DESC;
```

Output:

	PRODUCT_ID	PRODUCT_NAME	CATEGORY	FEEDBACK_COUNT	AVERAGE_RATING	TOTAL_QUANTITY_AVAILABLE
١	10039	Electric Toothbrush	ELECTRONICS	11	2.270909	44
	10006	Console	ELECTRONICS	10	2.903000	110
	10084	Deodorant	HYGIENE	10	3.500000	710
	10085	Facial Cleanser	HYGIENE	10	3.356000	950
	10135	Music CD	BOOKS & MEDIA	10	3.332000	300
	10163	Play Dough	KIDS	10	3.091000	630
	10166	Building Blocks	KIDS	10	3.173000	120
	10104	Razors	HYGIENE	9	2.600000	1485
	10129	Fiction Novel	BOOKS & MEDIA	9	3.198889	1062
	10049	Coconut Water	BEVERAGES	8	2.392500	1104
	10053	Lemonade	BEVERAGES	8	3.356250	184
	10055	Coffee	BEVERAGES	8	3.421250	136
Re	sult 42 ×					
Ou	tput					
	Action Output	-				
	# Time	Action			N	Message
9	53 13:45:08	SELECT p.PROD	UCT ID. p.PROI	DUCT_NAME, p.CA	TEGORY, CO 2	00 row(s) returned

10.

Relevance:

The query provides a comprehensive overview of sales performance for each store in each month within the specified time period. By aggregating sales data and calculating average total sales amounts, it enables stakeholders to analyze store-level sales trends and identify potential areas for improvement or optimization in the retail analytics dashboard.

Query:

```
st.STORE_ID,
st.ZIP_CODE,
st.STATE,
DATE_FORMAT(s.SALES_DATE, '%m-%Y') AS Month,
COUNT(*) AS TotalSalesCount,
AVG(s.TOTAL_AMOUNT) AS AvgTotalSalesAmount
```

FROM

```
sales s

JOIN

store st ON s.STORE_ID = st.STORE_ID

GROUP BY

st.STORE_ID,

st.ZIP_CODE,

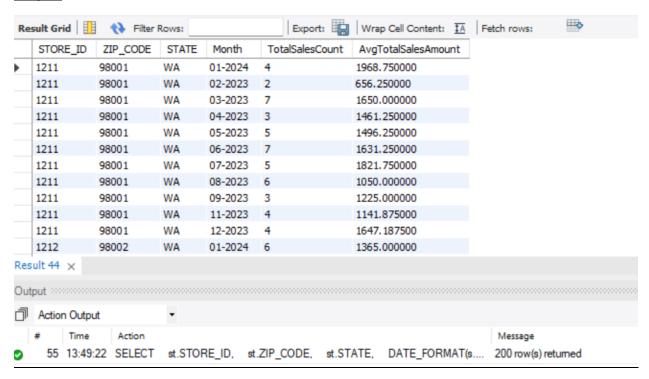
st.STATE,

Month

ORDER BY

st.STORE_ID,

Month;
```



Stored Procedures

We have created one Stored procedures for our database. The following are the details of the same.

Procedure:

<u>GetFeedbackByCategory</u>

Relevance:

In a retail analytics dashboard, this query provides valuable insights by presenting the average rating and comment count for products in a specific category, enabling businesses to gauge customer satisfaction and engagement, aiding in data-driven decision-making for product improvements or marketing strategies.

Query:

```
CREATE DEFINER=`mm_team04_02`@`%` PROCEDURE `GetFeedbackByCategory`(IN category name VARCHAR(255))
```

BEGIN

```
SELECT p.PRODUCT_NAME, AVG(f.RATING) AS AVERAGE_RATING, COUNT(f.COMMENTS) AS COMMENT COUNT
```

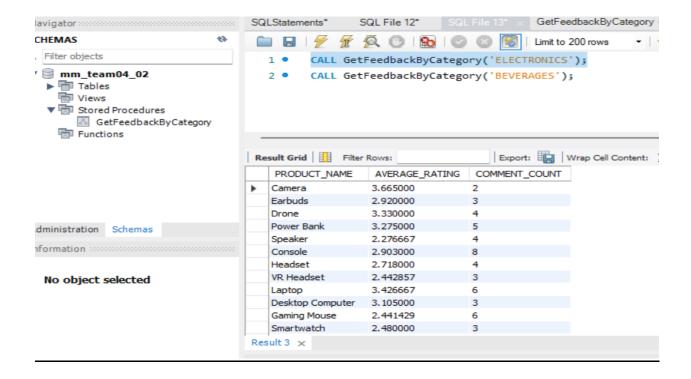
```
FROM product p

LEFT JOIN feedback f ON p.PRODUCT_ID = f.PRODUCT_ID

WHERE p.CATEGORY = category_name
```

GROUP BY p.PRODUCT NAME;

END



For CATEGORY - BEVARAGE



