



PROJECT BASED VIRTUAL INTERNSHIP

BUSINESS INTELLIGENCE ANALYST





Sales Analysis & Dashboard





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Business Problems

The company possesses a comprehensive sales dataset covering the period from 2020 to 2021. This dataset includes multiple tables detailing customer information, order data, product specifics, and product categories, each containing numerous columns. As a preliminary step in strategizing for the upcoming year, the sales team needs to assess the current year's sales performance and compare it against the previous year's sales across various variables. The outcomes of this analysis will serve as a critical reference for the sales team to enhance their sales strategy.

Objectives

In this case, as a Business Intelligence Analyst, expected to meet the sales team's needs by creating a comprehensive sales performance dashboard. This dashboard should display various parameters required to measure sales performance effectively.







Here is the sales data to be used. The data is presented in the form of an *Entity Relationship Diagram* (ERD), which shows the details of each table and the relationships between them. This sales dataset contains approximately 3,000 rows of data.

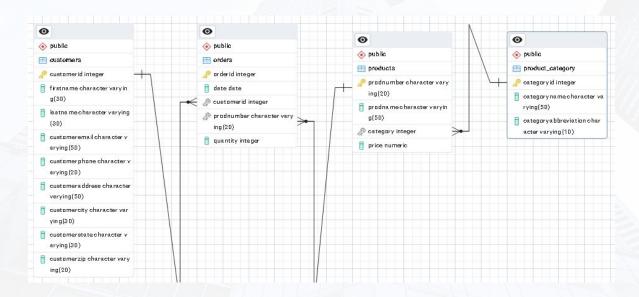






Table Details (Customers Table)



The **Customers Table** is used to store detailed information about each customer through various columns that describe the customer based on a range of variables, including:

- customerid: customer's identification number (PRIMARY KEY)
- firstname: customer first name
- lastname: customer last name
- customeremail: customer email
- customerphone: customer phone number
- customeraddress: customer address
- customercity: customer city
- customerstate: customer state
- customerzip: customer address zip code





Table Details (Orders Table)



The **Orders Table** is used to store detailed information about orders placed by each customer. The order details are described through several tables, namely:

- orderid: customer order identification number (PRIMARY KEY)
- date: The date the customer order was created
- customerid: customer identification number (FOREIGN KEY)
- prodnumber: The identity number of the product ordered (FOREIGN KEY)
- quantity: The quantity of products ordered

Table Details (Products Related Table)







The **Products Table** is used to store detailed information about the products that the company sells, described through various columns that include:

- prodnumber: product identification number (PRIMARY KEY)
- prodname: product name
- category: product category identification number (FOREIGN KEY)
- price: product price



The **Product Category Table** is utilized to store comprehensive information regarding the descriptions of product categories within the company, delineated through the following columns:

- categoryid: product category identification number (PRIMARY KEY)
- categoryname: product category name
- categoryabbreviation: product category abbreviation (short name)





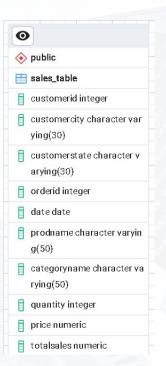


Create a master table by combining the various data needed for a comprehensive sales performance analysis.

Link to access the complete query:

https://github.com/Brandons vro/SQL/blob/430aa39edaca 52313c6111493ca068544f12e 420/Rakamin%20x%20Bank% 20Muamalat.sql

```
DROP TABLE IF EXISTS sales_table;
CREATE TABLE sales_table AS
   SELECT o.customerid.
           c.customercity,
           c.customerstate,
           o.orderid,
           o.date,
           p.prodname,
           pc.categoryname,
           o.quantity,
           p.price,
           p.price*o.quantity as totalsales
   FROM customers AS c
   JOIN orders AS o USING(customerid)
   JOIN products AS p
       ON o.prodnumber = p.prodnumber
   JOIN product_category AS pc
       ON p.category = pc.categoryid;
```





Sales Metrics

After thoroughly reviewing and understanding the company's sales dataset, we can **determine which metrics can be effectively displayed** to maximize analysis with limited data.

Key Metrics	Sales Performance Metrics Sales & Order Monthly Trend: Identify seasonal sales patterns and fluctuations		
Total Sales: Assess business growth and sales strategy success			
Total Transactions: Measure sales activity and purchase frequency	Sales & Quantity by Product Category: Assess product category performance and identify top product categories		
Total Product Sold: Assess product demand and the success of product offerings			
Total Customers: Measure market reach and customer acquisition effectiveness	Sales & Quantity by Customer State: Identify potential geographic expansion and key markets are		
Average Order Value (AOV): Measuring market purchasing power			



Link to access the dashboard:

https://public.tableau.com/vi ews/FinalProject_172046373 40350/Dashboard?:language =en-US&publish=yes&:sid=&:r edirect=auth&:display_count =n&:origin=viz_share_link



SALES DASHBOARD

Sales Overview of 2021

Customer State All Customercity All

Select Month Period

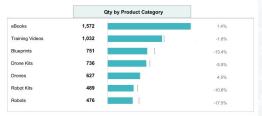
 Total Sales
 Total Transaction
 Total Product Sold
 Total Customer
 AOV

 \$841,540-7.8% (1997)
 1,646 -2.8% (1997)
 5,683 -4.8% (1997)
 1,147 -0.3% (1997)
 \$511-7.5% (1997)





	Sales by Product Category			
Robots	\$340,670		1.	-15.4%
Drones	\$242,584			3.3%
Robot Kits	\$101,762			-11.3%
Drone Kits	\$78,209			-5.8%
Training Videos	\$40,541	-		0.9%
eBooks	\$30,093			4.2%
Blueprints	\$7,681	1		-12.3%







Key Metrics Summary





Total Sales

\$841,540-7.8% (YoY)

Total Transaction

1,646 -2.8% (YoY)

Total Product Sold

5,683 -4.8% (YoY)

Total Customer

1,147 -0.3% (YoY)

AOV

\$511-7.5% (YoY)

Overall, this year's sales performance has declined compared to last year. This decrease has been accompanied by a reduction in the number of transactions, the quantity of products sold, the number of consumers making purchases, and also the purchasing power of consumers.

- **Total Sales** decreased by **-7.8%** compared to last year
- Total Transactions decreased -2.8% compared to last year
- Total Product Sold decreased by -4.8% compared to last year
- Total Customers decreased -0.3% compared to last year
- **AOV** decreased **-7.5%** compared to last year

Sales & Order Monthly Trend Summary





Total Sales To \$841,540 -7.8% (YoY)

Total Product Sold 5,683 -4.8% (YoY)



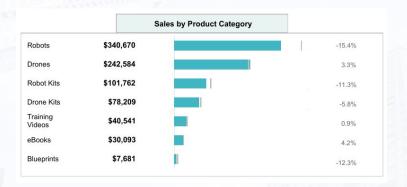


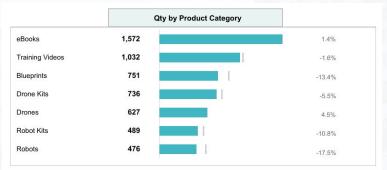
- Sales and Product Quantity Fluctuations: Both sales and the number of products sold experienced significant monthly fluctuations.
- June Peak: There was a sharp increase in sales (48.4% YoY) and the number of products sold (28.5% YoY) in June, marking the highest point in the past two years.
- October Low: Sales (-29.4% YoY) and the number of products sold (-27.1% YoY) saw a steep decline in October, reaching the lowest point in the past two years.
- Improved Monthly Sales Growth: Despite an overall decline in sales, the avg monthly sales growth this year (2.8% Avg MoM) is stronger compared to last year (-0.9%).
- Decline in Monthly Product Quantity Growth: Conversely, the average monthly growth in the number of products sold has decreased this year (-0.4% Avg MoM) compared to last year (1%).











- The Robots category accounts for roughly 40% of total sales but has seen the most significant decline in both sales (-15.4% YoY) and quantity (-17.5% YoY) compared to other categories.
- The Drones category has successfully maintained and improved its positive performance, ranking second in total sales and showing growth in both sales (3.3% YoY) and quantity sold (4.5%).
- Three categories (Robots, Robot Kits, and Blueprints) experienced significant declines in both sales and quantity sold.
- **Ebooks, Training Videos, and Blueprints** have the highest sales volumes, but contribute less to overall sales value.

Sales & Order by State Summary









- California and Texas lead in sales, each exceeding \$100,000, followed by Florida, New York, and Pennsylvania, collectively contributing to over 40% of total sales.
- Texas stands out with impressive sales of over \$100,000 and significant growth (39.8% YoY).
- Several states, including Pennsylvania (30.5%), Arizona (64.1%), North Carolina (67.1%), Louisiana (86.8%), Iowa (38.3%), and Oklahoma (54.9%), saw substantial growth, achieving strong sales performance (>\$10,000) (ranked by total sales).
- Significant declines were observed in New York (-33.2%), Virginia (-39.9%), District of Columbia (-37.1%), Illinois (-55.8%), Alabama (-53.5%), Tennessee (-49.2%), Wisconsin (-50.8%), and New Jersey (-63.5%), reducing their sales to below \$10,000 (ranked by total sales).

Next Step Recommendation



- Conduct a detailed analysis of the factors influencing sales trend fluctuations, particularly during the highest sales peak in June and the lowest in October. This analysis could include examining seasonality, promotions, market conditions, or any external events that may have impacted these fluctuations.
- Investigate the causes behind the declining performance of the Robots category, as it is a key sales contributor. This should include analyzing market trends, competitive landscape, and other relevant factors.
- Perform growth forecasting for the Drones category to strengthen product lines and marketing strategies based on the projections.
- Analyze and test cross-selling and up-selling strategies for low-contributing products (Training Videos, eBooks, Blueprints) alongside top-performing products. The goal is to increase transaction value and reduce costs.
- Conduct a sales growth forecast for Texas to inform future resource allocation decisions.
- Perform a deeper analysis of the factors driving significant sales increases or decreases in the identified states.
- Expand the analysis to a city-level scope to identify cities with potential growth opportunities.





Thank You



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Access SQL Query



Access Dashboard