Rakamin Academy X Bank Muamalat

Transforming Sales Data into Strategic Business Insights

Bank Muamalat Business Intelligence Analyst Project Based Internship Program

Presented by
Fadil Pratama

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About Me

Informatics graduate with a strong interest in data and business analysis. Skilled in finding insights from data and supporting decision-making. Eager to grow and contribute through data-driven solutions.

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Experiences

Software Developer Intern at UPT TIK UNS

Led over 100 help desk staff and maintained IT systems for 20,000+ users during the UNS exam, while managing and improving the PIMUNS website using PHP and Laravel.

UI/UX Designer at Startup Campus

Created user-friendly e-commerce UI prototypes with Figma based on user research, and improved user experience through usability testing and journey mapping.

Survey Operations Manager at Akosta

Led a team to acquire 80+ property partners, analyzed survey data to support business strategy, and built strong client relations using data-driven approaches.

Case Study & Dataset Overview

As a BI Analyst at PT Sejahtera Bersama, the assigned task is to create sales data visualization using Looker Studio. These visualizations include total sales, sales per product category, quantity per product category, sales per city, quantity per city, and top five product categories based on highest sales and quantity. In addition, it is also requested to provide strategy recommendations based on available transaction data to help maintain and increase company sales.

Dataset

Table Name	Key Columns
Customer	FirstName, LastName, CustomerEmail, CustomerCity, CustomerState, etc.
Orders	OrderID, Date, CustomerID, ProdNumber, Quantity
Products	ProdNumber, ProdName, Category, Price
ProductCategory	CategoryID, CategoryName, CategoryAbbreviation

Data Structure

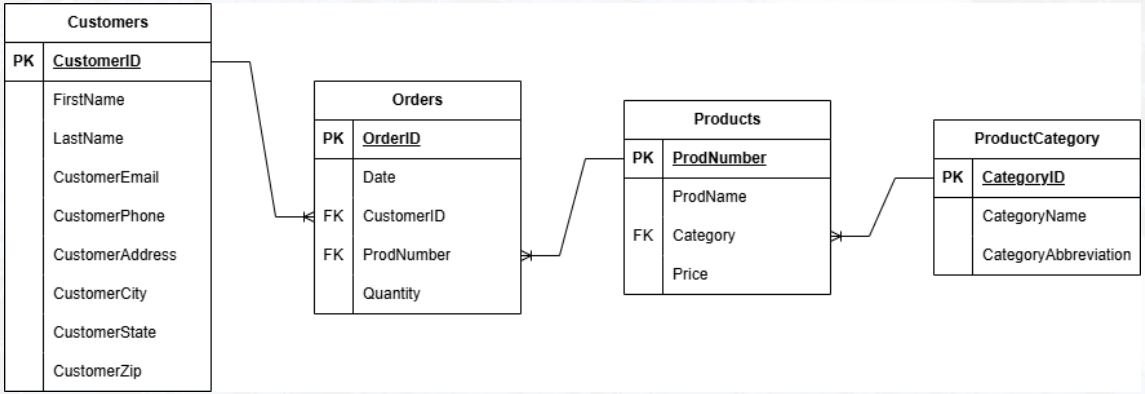
Primary Key

A unique attribute in a table that is used to uniquely identify each row of data

Table Name	Primary Key
Customer	CustomerID
Products	ProdNumber
Orders	OrderID
ProductCategory	CategoryID

Relationship Table

A table that connects two other tables through foreign keys to form a relationship between data.



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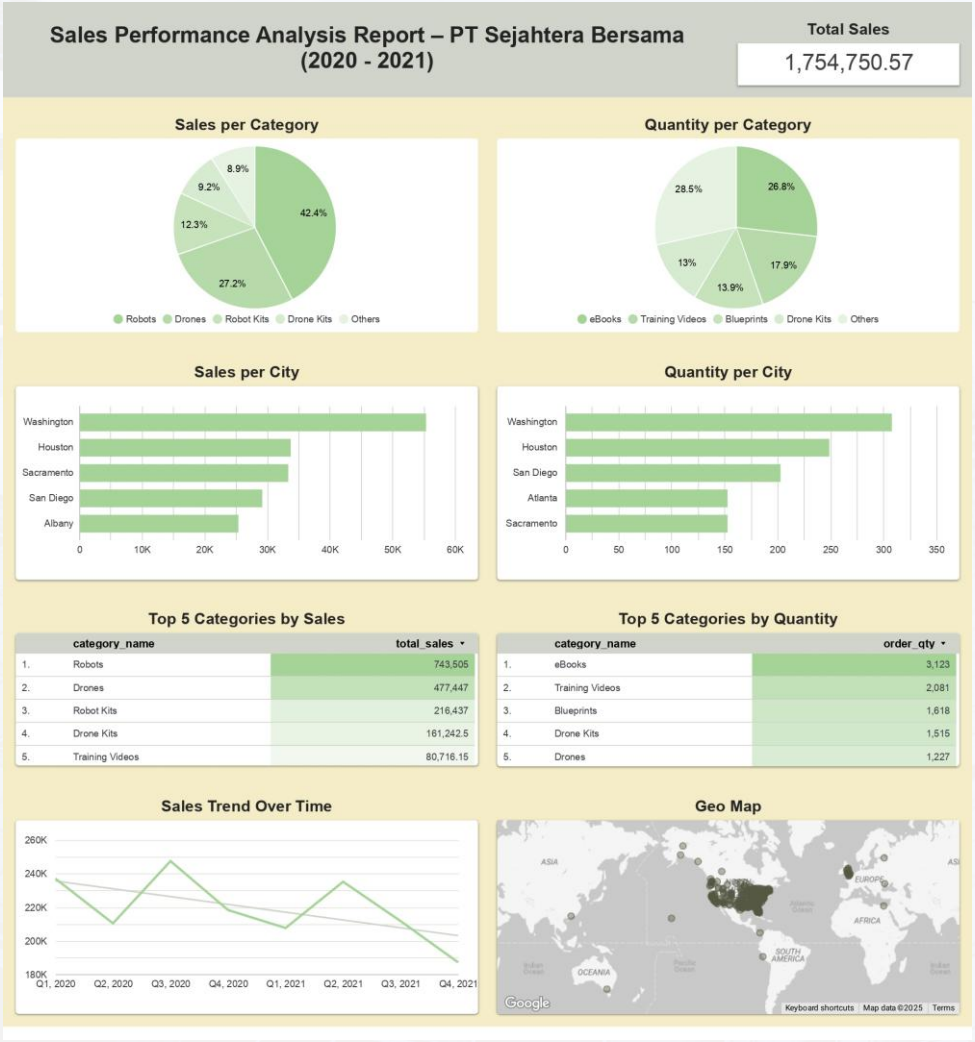
Master Table

SQL Query

```sql
SELECT
    STR_TO_DATE(o.Date, '%d/%m/%Y') AS order_date,
    pc.CategoryName AS category_name,
    p.ProdName AS product_name,
    REPLACE(p.Price, ',', '.') AS product_price,
    o.Quantity AS order_qty,
    (o.Quantity * CAST(REPLACE(p.Price, ',', '.') AS DECIMAL(10,2))) AS total_sales,
    c.CustomerEmail AS cust_email,
    c.CustomerCity AS cust_city
FROM Orders o
JOIN Customers c ON o.CustomerID = c.CustomerID
JOIN Products p ON o.ProdNumber = p.ProdNumber
JOIN ProductCategory pc ON p.Category = pc.CategoryID
ORDER BY order_date ASC;
```

Result Table

	order_date_parsed	category_name	product_name	product_price	order_qty	total_sales	cust_email	cust_city
1	2020-01-01	eBooks	Polar Robots	23.99	2	47.98	fvaslerqt@comsenz.com#mailto:fvasle	Jackson
2	2020-01-01	eBooks	SCARA Robots	19.50	5	97.5	llespercx@com.com#mailto:llespercx(	Des Moines
3	2020-01-01	Drone Kits	BYOD-220	69.00	1	69	edew@nba.com#mailto:edew@nba.c	Honolulu
4	2020-01-01	Training Videos	Drone Video Techniques	37.99	6	227.94	gstiggersdd@eventbrite.com#mailto:	Saint Petersburg
5	2020-01-01	eBooks	Spherical Robots	16.75	5	83.75	lfromonte9@de.vu#mailto:lfromonte9	Birmingham
6	2020-01-01	Robots	RWW-75 Robot	883.00	3	2,649	tmckernot@tinyurl.com#mailto:tmcke	Katy
7	2020-01-02	Training Videos	Understanding Automation	44.95	1	44.95	ksteershp@ameblo.jp#mailto:ksteersh	San Diego
8	2020-01-02	Robot Kits	BYOR-2640S	189.00	2	378	gmirrlees4v@state.tx.us#mailto:gmirrl	Washington
9	2020-01-02	eBooks	Fixed Wing Drones	15.50	3	46.5	ohalbardv@booking.com#mailto:ohal	Birmingham
10	2020-01-02	Robot Kits	BYOR-3000	214.00	2	428	croylede@dot.gov#mailto:croylede@	Virginia Beach



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Visualization with Looker Studio

Insights and Recommendations

Sales Trend Analysis

Finding

During the period 2020 to 2021, the sales trend showed a fluctuating pattern but an overall decline. Sales fell from Q1 to Q2 2020, then rose in Q3 2020, but declined again in Q4 2020 and continued to decline until Q1 2021. After a slight increase in Q2 2021, the trend declined again until Q4 2021. This gradual decline indicates a potential decline in market interest or a lack of consistent promotional strategies.

Recommendation

Evaluate the marketing strategy every quarter and maximize promotions in periods that have previously experienced a decline. It is also necessary to conduct further analysis to identify the main causes of the decline and look for new opportunities by season or product category.

Insights and Recommendations

Product Performance Analysis

Top 5 Categories by Sales

	category_name	total_sales
1.	Robots	743,505
2.	Drones	477,447
3.	Robot Kits	216,437
4.	Drone Kits	161,242.5
5.	Training Videos	80,716.15

Top 5 Categories by Quantity

	category_name	order_qty
1.	eBooks	3,123
2.	Training Videos	2,081
3.	Blueprints	1,618
4.	Drone Kits	1,515
5.	Drones	1,227

Finding

The data shows that some digital products such as eBooks and Training Videos have a high volume of demand, despite their relatively low value per transaction. In contrast, physical products such as Robots and Drones, while not as heavily ordered, contribute significantly to revenue.

Recommendation

The company may consider strengthening promotional strategies on high-value product categories such as Robots and Drones to maximize revenue. On the other hand, high-demand products such as eBooks and Training Videos can be further developed, for example by offering premium versions, bundling, or exclusive content to increase transaction value.

Insights and Recommendations

Sales Analysis by Region

Finding

From the results, the cities of Washington and Houston are the highest both in terms of number of products sold and total sales value. This shows that these two cities are key markets that need to be maintained and developed. San Diego and Sacramento also had a high number of orders, but the sales value was different.

Recommendation

Focus marketing and distribution strategies on Washington, Houston, San Diego and Sacramento to maintain and increase sales. In San Diego and Sacramento, it could be enhanced with the promotion of higher-value products to drive increased transaction value.

Conclusion

- Sales showed a decline from Q1 2020 to Q4 2021, although there were temporary increases in Q3 2020 and Q2 2021. It is worth learning more about what influenced the increase to improve sales in the future.
- Robots and Drones category products have good sales. Focus on promotion and product development in this category to continue to attract market interest.
- Cities like Washington, Houston, San Diego, and Sacramento have high sales. It is recommended to focus more on promotion and distribution in these cities to further increase sales.
- For categories or regions with low sales, it is necessary to evaluate and improve the strategy. For example, by promoting more vigorously or improving distribution channels in these areas.

Thank You

halo.fadilpratama@gmail.com

https://www.linkedin.com/in/fadilpratama

https://github.com/fadilpratama

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