Rakamin Academy X Bank Muamalat

Final Project

Business Intelligence Analyst

Presented by
Ni Wayan Ernawati

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About Me

Detail-oriented electrical engineering graduate with practical experience in sentiment analysis and a strong passion for data analysis. Skilled in SQL, Python, Excel, Tableau, Power BI, Looker Data Studio, and statistical analysis.

Experiences

● Sentiment Analysis Project at Udayana University
Jan - Apr 2023

● Graduated from Artificial Intelligence for Mastery Program at PT Orbit Ventura Indonesia
Feb - Jul 2022

Case Study

In my role as a Business Intelligence Analyst at Bank Muamalat, I presently encounter five challenges, which include:
1. Identifying the primary keys.
2. Developing an entity relationship diagram for the database.
3. Constructing a master table based on selected columns.
4. Utilizing Google Looker Studio to create a dashboard for visualizing sales performance.
5. Extracting insights and recommendations from the analysis and visualization.

The tools involved in tackling these challenges include:
1. Google BigQuery
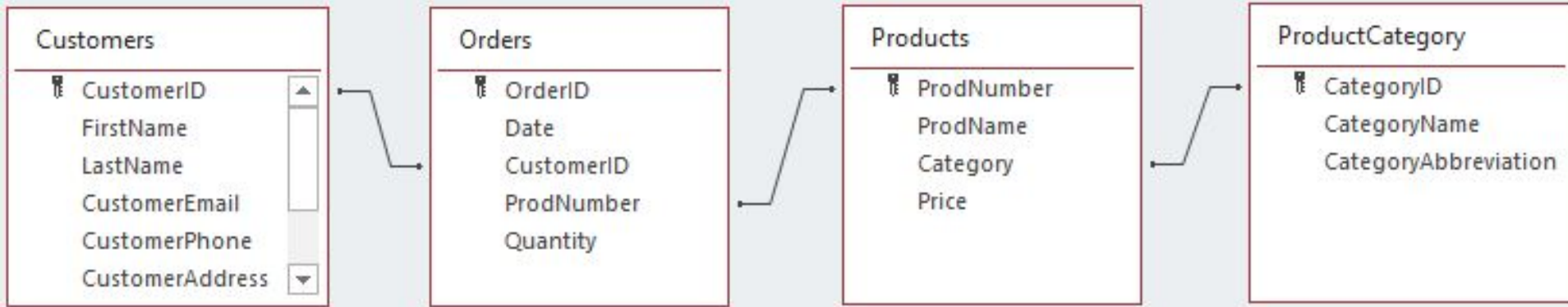2. Google Looker Studio
3. Microsoft Access

1. Primary Key

In SQL, the primary key is either a single field or a set of fields that can uniquely identify a row within a table.

1. Primary key table Customer: CustomerID
2. Primary key table Products: ProdNumber
3. Primary key table Orders: OrderID
4. Primary key table ProductCategory: CategoryID

2. Relationship Database

Customers	Orders	Products	ProductCategory
🔑 CustomerID	🔑 OrderID	🔑 ProdNumber	🔑 CategoryID
FirstName	Date	ProdName	CategoryName
LastName	CustomerID	Category	CategoryAbbreviation
CustomerEmail	ProdNumber	Price	
CustomerPhone	Quantity		
CustomerAddress			

A table relationship functions by aligning data in key fields, frequently a field with identical names in both tables. Typically, these corresponding fields involve the primary key from one table, offering a distinctive identifier for each record, and a foreign key in the other table.

❏ Customers.CustomerID = Orders.CustomerID with one to many relationship

❏ Orders.ProdNumber = Products.ProdNumber with many to one relationship

❏ ProductCategory.CategoryID = Products.Category with one to many relationship

3. Table Master

```sql
1   CREATE TABLE dataset_task5.MasterTable AS
2   SELECT
3     O.Date AS order_date,
4     PC.CategoryName AS category_name,
5     P.ProdName AS product_name,
6     P.Price AS product_price,
7     O.Quantity AS order_qty,
8     (P.Price * O.Quantity) AS total_sales,
9     C.CustomerEmail AS cust_email,
10    C.CustomerCity AS cust_city
11  FROM
12    dataset_task5.Orders AS O
13  INNER JOIN
14    dataset_task5.Products AS P ON O.ProdNumber = P.ProdNumber
15  INNER JOIN
16    dataset_task5.ProductCategory AS PC ON P.Category = PC.CategoryID
17  INNER JOIN
18    dataset_task5.Customers AS C ON O.CustomerID = C.CustomerID
19  ORDER BY
20    order_date ASC;
```

	order_date	category_name	product_name	product_price	order_qty	total_sales	cust_email	cust_city
1	2020-01-01	Drone Kits	BYOD-220	69.0	1	69.0	edew@nba.com#mailto:edew...	Honolulu
2	2020-01-01	eBooks	Polar Robots	23.99	2	47.98	fvaslerqt@comsenz.com#mailt...	Jackson
3	2020-01-01	eBooks	SCARA Robots	19.5	5	97.5	llespercx@com.com#mailto:lle...	Des Moines
4	2020-01-01	eBooks	Spherical Robots	16.75	5	83.75	lfromonte9@de.vu#mailto:lfro...	Birmingham

4. Dashboard
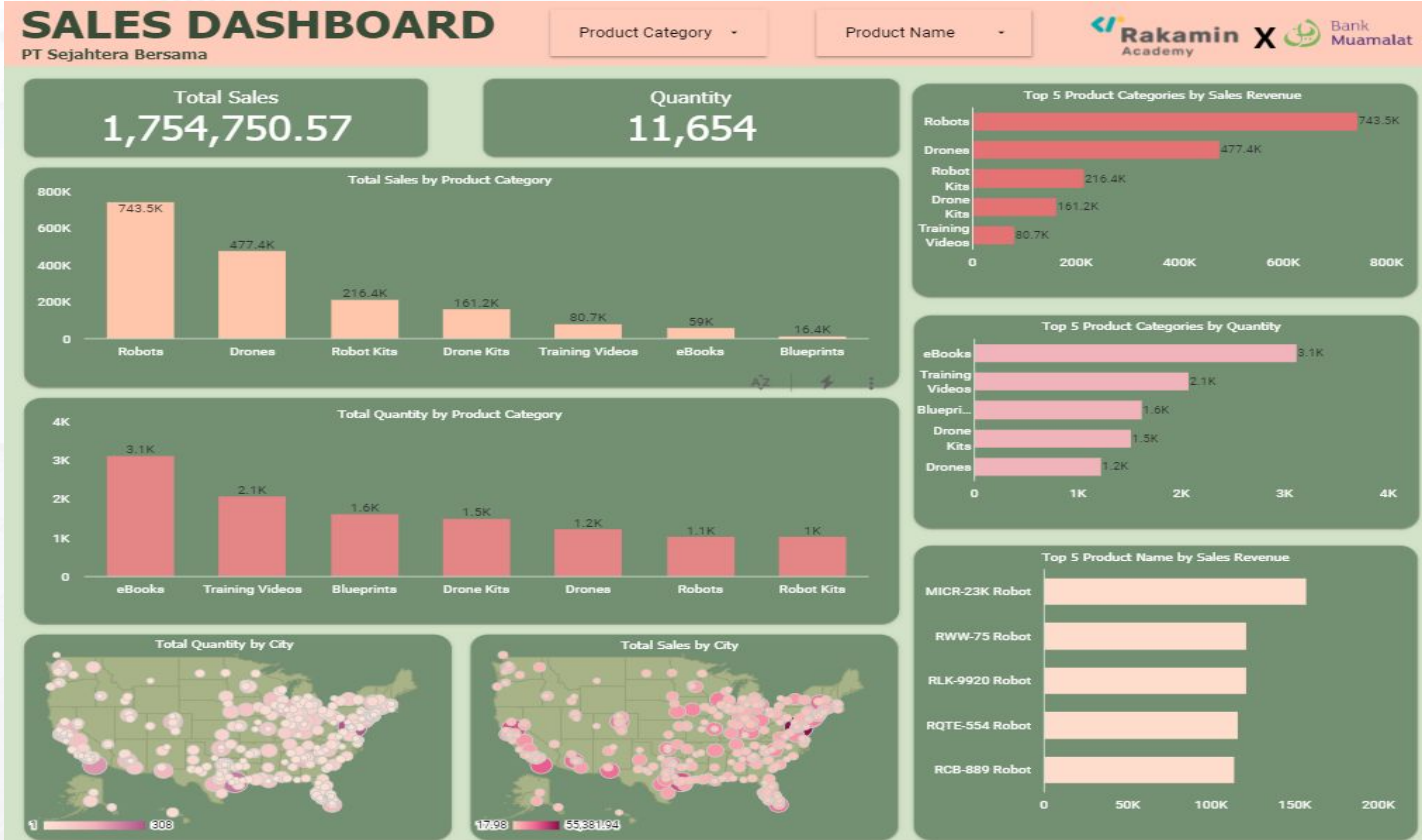
5. Insights and recommendations

Insights:

- The total sales amount to $1,754,750.57, with the Robots product category making a significant contribution of $743,505.
- The eBooks category stands out for having the highest quantity of orders, totaling 3,123.
- Prominent product categories in terms of sales include Robots, Drones, Robot Kits, Drone Kits, and Training Videos.
- The top five product categories by total orders are eBooks, Training Videos, Blueprints, Drone Kits, and Drones.
- The top five products name by total sales are MICR-23K Robot, RWW-75 Robot, BYOR-3535, DC-304 Drone, and RCB-889 Robot.
- Washington state leads in both sales and total orders, with impressive figures of $55,000 in sales and 308 orders.

5. Insights and recommendations

Recommendations:

- Boost the stock inventory levels for product categories exhibiting the greatest sales and total orders. This measure is essential to address the anticipated surge in demand for these products in the future.
- Introduce special promotions or discounts, particularly on high-performing products such as the MICR-23K Robot, RWW-75 Robot, BYOR-3535, DC-304 Drone, and RCB-889 Robot. Limited-time offers can stimulate buying interest.
- Examine the data from cities experiencing low sales to pinpoint the factors contributing to their diminished sales and total orders. This analysis aims to identify solutions that can enhance sales performance in those particular cities.
- Modify the customer segmentation strategy for marketing campaigns by concentrating efforts on cities with notable sales and total order values.

Dashboard:

https://lookerstudio.google.com/reporting/0b8ef222-23fc-4bf4-980b-4f2592c8b4ec

View the specifics on GitHub

https://github.com/wynernawati/VIX-BI-Analyst-Bank-Muamalat.git

Video Presentation Here

https://youtu.be/iXdAvHzTu2o

Thank You

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