PropVivo Power BI Assessment Project 1 – Sales Performance Dashboard

# 📅 Project Overview

You have been hired as a Data Analyst by a retail company to design a Power BI solution that analyzes and visualizes sales performance. The dataset contains over 1800 raw records across Sales, Product, and Customer tables.

# 📋 Objective

- Cleans and transforms raw data using Power Query  
- Builds a solid data model with correct relationships  
- Implements DAX calculations for key performance indicators  
- Visualizes sales insights via KPIs, charts, matrices, and slicers

# 🔍 Problem Context

- Track regional sales performance  
- Understand customer behavior trends  
- Measure product profitability

# 🛠️ What Was Built

## ✔ Data Cleaning (Power Query)

- Handled missing values  
- Standardized fields  
- Converted phone number to text  
- Removed duplicates

## ⚖️ Data Modeling

- Fact table: Sales  
- Dimension tables: Products, Customers  
- Relationships established using ProductID and CustomerID

## ⚙ DAX Calculations (Reviewed)

### Total Revenue

SUMX(Sales, Sales[Quantity] \* RELATED(Products[UnitPrice]) \* (1 - Sales[Discount]))

### Total Profit (Proxy)

[Total Revenue]

### Total Orders

COUNTROWS(Sales)

### Average Order Value

DIVIDE([Total Revenue], [Total Orders])

### Customer Lifetime Value

SUMX(RELATEDTABLE(Sales), Sales[Quantity] \* RELATED(Products[UnitPrice]) \* (1 - Sales[Discount]))

### Frequency

CALCULATE(COUNTROWS(Sales), FILTER(Sales, Sales[CustomerID] = SELECTEDVALUE(Customers[CustomerID])))

### Recency (days)

VAR LastPurchase = CALCULATE(MAX(Sales[Date]), FILTER(Sales, Sales[CustomerID] = SELECTEDVALUE(Customers[CustomerID])))  
RETURN DATEDIFF(LastPurchase, TODAY(), DAY)

### Revenue per Customer

SUMX(RELATEDTABLE(Sales), Sales[Quantity] \* RELATED(Products[UnitPrice]) \* (1 - Sales[Discount]))

### Top 10% Count

ROUNDUP(DIVIDE(DISTINCTCOUNT(Sales[CustomerID]), 10), 0)

### Top 10 Percent Revenue

SUMX(TOPN([Top 10% Count], VALUES(Customers[CustomerID]), [Revenue per Customer], DESC), [Revenue per Customer])

### Total Customers

DISTINCTCOUNT(Sales[CustomerID])

### Repeat Purchase Rate

DIVIDE(CALCULATE(DISTINCTCOUNT(Sales[CustomerID]), FILTER(Sales, [Frequency] > 1)), [Total Customers])

### Recency Segment

SWITCH(TRUE(), [Recency (days)] <= 30, "Recent", [Recency (days)] <= 90, "Moderate", "Old")

# 📊 KPI Purpose & Calculation

## YoY Growth Rate

Purpose: Tracks sales growth compared to last year. Helps identify trends.

YoY Growth (%) =   
VAR CurrentRevenue = [Total Revenue]  
VAR LastYearRevenue =  
 CALCULATE([Total Revenue], SAMEPERIODLASTYEAR('Date'[Date]))  
RETURN  
DIVIDE(CurrentRevenue - LastYearRevenue, LastYearRevenue)

## Average Order Value

Purpose: Measures average revenue per order. Indicates spending habits.

Average Order Value = DIVIDE([Total Revenue], [Total Orders])

## Store Efficiency (Sales ÷ Footfall)

Purpose: Evaluates how well a store converts traffic into sales.

Store Efficiency = DIVIDE([Total Revenue], SUM(Stores[Footfall]))

## Customer Satisfaction Index

Purpose: Measures customer happiness based on feedback.

Customer Satisfaction Index =   
AVERAGEX(  
 VALUES(Sales[CustomerID]),  
 AVERAGE(Sales[FeedbackScore])  
)