QUICKSTART
Over 35 Years Of Technology Training

Data Analytics and Visualization

Project 2- Sales Performance and Product Trend Analysis Dashboard

Why It's Interesting and Real-World Applicable

- **Widely Needed:** Sales analytics are essential for nearly any company that sells products or services. Understanding trends, performance, and customer data is key for strategic decision-making.
- **Shows Diverse Skills:** This project involves data cleaning (SQL), modeling (likely in SQL), and compelling visualization (Power BI).
- **Flexible Data:** You can use a real dataset for maximum impact (more on that below) or adapt this project by generating your own sales data.

Project Tasks

1. **Dataset:**
    - **Finding Real Data:** Look for open sales datasets on platforms like Kaggle (https://www.kaggle.com/datasets). Search for keywords like "sales data", "e-commerce transactions", etc. Consider the scope you want for your project.
2. **SQL Work**
    - **Data Cleaning & Transformation:** Real-world data is messy! Practice your SQL skills by:
        - Normalizing date and time formats
        - Handling missing values or outliers
        - Joining tables if your data is spread across multiple sources
    - **Calculations & Aggregations:** This is where you create the metrics your dashboard will visualize:
        - Total sales over time
        - Sales by product category
        - Sales by region
        - Customer acquisition rate
        - Average order value

3. **Power BI Dashboard**
    - **Visualization Choices:** Think about the best ways to showcase your findings:
        - Line charts or area charts for trends over time
        - Bar Charts for comparing categories
        - Maps for regional analysis
        - Tables for detailed breakdowns
    - **Interactivity:** This is where Power BI shines:
        - Filters for date ranges, product types, or regions
        - Drill-down capabilities to go from high-level overviews to granular details
    - **Design:** Keep it clean, professional, and highlight the key insights.

Project Extensions (Optional)

- **Trend Forecasting:** If you have time-series data, explore basic forecasting models in Power BI or using a bit of Python/R integrated into your workflow.
- **Customer Segmentation:** If you have customer data, use SQL to group customers based on purchase behavior, then visualize this in Power BI.

How to Showcase for Employers

- **Clean Code:** Well-commented SQL queries demonstrate your methodology.
- **Visual Appeal:** A polished dashboard speaks for itself.
- **Project Write-Up:** Include a short readme that explains:
    - The problem you were solving
    - Key insights the dashboard reveals
    - Challenges and how you overcame them

Deliverables:

To successfully complete this project, you must perform the following.

You will have to submit 3-word files the first file should contain.

- Summary of your project
- Methodology used.
- Predicted target and achieved target.

Second file

- It should have screenshot of your final result

Third file

- It should have a code base SQL and PowerBI file.

Project Grading:

To pass the project, Instructor should take below criteria into consideration while grading this exercise and deciding whether to Pass or Fail the student.

- Data Cleaning & Transformation
- Calculations & Aggregations
- Visualization Choices
- Interactivity
- Design

PC Minimum Requirements:

- You must have access to a Windows PC to complete the projects. All projects are performed within a virtual environment.

- Minimum hardware requirements:
- Intel i3 processor or better, 64 bit . Processors must support virtualization.
- 8GB RAM memory (16GB highly recommended)
- 100GB of available main drive space (not USB or external)
- Windows 10/11 (Home or Pro) (not S mode)

You will use this PC and virtual environment for the duration of the program.

Please follow these steps to get your PC information and view screenshot below for your reference

- Click on start
- Type “This PC “
- Right Click on “This PC “
- Go on properties.
- Then you will be directed to below page where you will find your PC information