Power BI Assignment 1

1. What do you mean by BI? Explain.

Business Intelligence (BI) refers to the technologies, tools, and processes used to collect, process, and analyze data to support better decision-making in a business. BI transforms raw data into meaningful insights through dashboards, reports, visualizations, and analytics, enabling organizations to identify trends, spot opportunities, and optimize operations.

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2. How does Power BI help in BI, and how does it help Analysts? Explain.

Power BI is a powerful business analytics tool developed by Microsoft that helps users visualize their data and share insights across an organization.

How Power BI helps in BI:

- **Data Integration**: Combines data from multiple sources (Excel, SQL, cloud services).

- **Interactive Dashboards**: Converts data into visually rich and interactive dashboards and reports.

- **Real-Time Insights**: Supports real-time data streaming and monitoring.

- **Cloud Sharing**: Enables users to publish and share reports on the Power BI service.

How it helps Analysts:

- **Saves Time**: Automates data refresh and reporting processes.

- **Better Decision-Making**: Offers deeper insights through visuals, KPIs, and drill-down features.

- **Custom Visualizations**: Helps identify patterns and trends using charts, graphs, and AI visuals.

- **DAX Functions**: Allows for complex data calculations and custom metrics.

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3. Explain Descriptive Analytics.

Descriptive Analytics answers the question: *"What happened?"*

- It analyzes past data to understand historical trends and performance.

- Common tools: Reports, dashboards, charts.

- Example: "What was the total sales last month?" or "Which region had the most customer complaints?"

4. Explain Predictive Analytics.

Predictive Analytics answers the question: *"What is likely to happen?"*

- It uses statistical models, machine learning, and historical data to forecast future outcomes.

- Example: Predicting next quarter's sales or identifying customers likely to churn.

5. Explain Prescriptive Analytics.

Prescriptive Analytics answers the question: *"What should we do?"*

- It suggests actions to take based on predictive outcomes.

- Uses optimization and simulation algorithms.

- Example: Recommending the best pricing strategy or supply chain route.

6. Write five real-life questions that Power BI can solve.

1. **Sales Performance**: *Which product category had the highest revenue in the last quarter?*

2. **Customer Retention**: *Which customer segments have the highest churn rate?*

3. **Inventory Management**: *Which items are understocked or overstocked across stores?*

4. **Marketing Effectiveness**: *How did our recent ad campaign impact website traffic and conversions?*

5. **Financial Analysis**: *What are the trends in operating costs over the past 6 months?*