**Power BI Assignment 1**

1. What do you mean by BI? Explain.
2. How Power-BI helps in BI, and how does it help Analysts? Explain.
3. Explain Descriptive analytics?
4. Explain Predictive analytics?
5. Explain perspective analytics?
6. Write five real-life questions that PowerBi can solve.

**ans:**

1.

Business Intelligence (BI) refers to the technologies, applications, and practices for the collection, integration, analysis, and presentation of business information. It involves using data analysis tools and techniques to help organizations make informed decisions. BI encompasses a wide range of activities, including data mining, reporting, online analytical processing (OLAP), data visualization, and more. The primary goal of BI is to transform raw data into actionable insights that drive strategic and operational improvements within an organization.

2.

Power BI is a powerful business analytics tool developed by Microsoft that enables users to visualize and analyze data from various sources. It helps in BI by providing capabilities for data preparation, data modeling, visualization, and collaboration. Analysts can use Power BI to connect to multiple data sources, transform raw data into meaningful insights through data modeling and calculations, and create interactive reports and dashboards for decision-making. Power BI's intuitive interface and drag-and-drop functionality make it easy for analysts to explore data, uncover patterns, and share findings with stakeholders across the organization.

3.

Descriptive analytics involves analyzing historical data to understand what has happened in the past. It focuses on summarizing and interpreting data to describe the current state of affairs or to uncover patterns and trends. Descriptive analytics answers questions such as "What happened?", "How many?", "Where?", and "When?" It typically involves techniques such as data aggregation, data visualization, and basic statistical analysis to provide insights into past performance and behavior.

4.

Predictive analytics involves using historical data and statistical algorithms to forecast future outcomes or trends. It aims to answer questions like "What is likely to happen?" or "What is the probability of a particular event occurring?" Predictive analytics leverages techniques such as regression analysis, machine learning, and data mining to identify patterns and relationships in data and make predictions about future events. It is widely used in various industries for purposes such as forecasting sales, predicting customer behavior, and optimizing business processes.

5.

Prescriptive analytics goes beyond descriptive and predictive analytics by recommending actions to optimize outcomes based on the insights derived from data analysis. It answers the question "What should we do?" by providing actionable recommendations or decision options. Prescriptive analytics considers constraints, objectives, and potential outcomes to suggest the best course of action. It often involves advanced modeling techniques and optimization algorithms to determine the most effective strategies for achieving desired goals. Prescriptive analytics helps organizations make data-driven decisions and maximize their operational efficiency and effectiveness.

6.

a. What are the sales trends for our product categories over the past year, and which regions are contributing the most to our revenue?

b. How has customer satisfaction changed over time, and what factors are influencing it?

c. Which marketing channels are driving the highest return on investment (ROI), and where should we allocate our advertising budget for maximum impact?

d. What are the key drivers of employee turnover, and how can we address them to improve retention rates?

e. What is the inventory turnover rate for our products, and are there any inventory management strategies we can implement to reduce carrying costs and improve cash flow?