**Power BI Assignment 1**

**1.What do you mean by BI? Explain.**

BI stands for business Intelligence. It refers to a set of strategies and practices used to collect, analyze, and transform row data into meaningful insights to make informed business decisions. It involves various process, tools and technique that help organizations gather, store, analyze and present data in a way that facilitates better decision-making, improved performance and competitive advantages.

Business Intelligence plays a vital role in transforming raw data into actionable insights, improve operational efficiency, drive innovation.

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

Power BI is powerful business intelligence tool that enables organization to analyze and visualize their data. It transforms raw data into meaningful insights and reports. Power BI helps in BI and benefits anlysts:

1. Data Integration: Power BI allows analysts to connect and integrate data from various sources ,such as databases, spreadsheets,cloud services and online platforms. It provides pre-built connectors for popular data sources,making it easier to import and combine data from multiple system. This capability ensures that analysts have access to up-to-date data for their analysis.
2. Data Modeling: Power BI enables analysts to build robust data models that help in organizing and structuring data for analysis. Analysts can define relationship between tables, create calculated columns and measure and apply transformations to cleanse and shape the data.
3. Visual Exploration: Power BI offers a wide range of visualization options, including charts , graphs, maps and tables. Analyst can create interactive visualization by dragging and dropping and dropping fields onto a canvas, allowing them to explore data from different angles and identify the patterns, trends and outliers.
4. Dashboards and Reports: Power BI enables analysts to create interactive dashboards and reports that provide a comprehensive view of the data. Dashboards can be customized with visualizations, filers and slicers to monitor key performance indicators and track progress towards business goals.

Power BI empowers analysts by offering data integration, modeling, visualization and reporting capabilities. It enable them to efficiently explore and analyze data, Create compelling visualization and share insights with stakeholders.

**3.Explain Descriptive analytics?**

Desriptive analytics used by many organizations to study past experiences by summarizing the raw data. This basic form of analytics uses business reporting through not only examining the past,but also in providing an approach for the future. Descriptive analytics come into picture when an aggregation is needed to filter historic data and analyze the performance of a company at an aggregate level.

Descriptive analysis supports a broad range of users in interpreting data. Descriptive analytics are commonly used in :

* Financial reports
* Planning a new program
* Measuring effectiveness of a new program
* Undestanding sales trends
* Comparing companies
* Motivating behavior with KPIs

**4.Explain Predictive analytics?**

Predictive analytics is the process of using data to forecast future outcomes . The process uses data analysis, machine learning, artificial intelligence and statistical models to find pattern that might predict future behavior.

Uses and example of predictive analyctics: Predictive analytics can be used to streamline operations boost revenue and mitigate risk for almost any business or industry,including banking ,retail, utilities ,public sector, healthcare.

**5.Explain perspective analytics?**

Perspective analytics is a relatively new branch of analytics that involves analyzing data from various perspectives to gain a comprehensive understanding of a particular phenomenon or problem. It goes beyond traditional analytics approaches that only focus on one or two dimensions of data analysis.

Perspective analytics involves analyzing data from multiple perspectives, including temporal, spatial, demographic, and psychographic perspectives, to identify patterns and trends that may not be apparent when analyzing data from a single perspective. This approach enables analysts to gain a more comprehensive understanding of the factors that influence a particular phenomenon and to identify new opportunities and challenges.

**6.Write five real-life questions that PowerBi can solve.**

-1. What is the sales performance of our products across different regions and time periods- Power BI can analyze sales data, visualize sales trends, compare performance across regions, and identify top-selling products. This helps organization make data- driven decisions related to sales strategies, inventory management, and resource allocation.

2. How is our marketing campaion performing across different channels and demographics? Power BI can integrate data from various marketing platforms, track metrics such as website traffic, click-through rates and conversion rates.

3. What are the customer churn patterns and what factors contribute to customer attrition – Power BI can analyze customer data, such as customer demographics, purchasing behavior , bad interaction history, to identify churn patterns.

4. How is our inventory performing in terms of stock level turnover and profitability- Power Bi can intergrate data from inventory systems, track stock levels , analyze sales data and calculate inventory turnover ratios and profitability metrics.

5. What are the key drivers of employee satisfaction and engagement in our organization – Power BI can gather data from employee surveys, performance evaluations and HR systems to analyze factors impacting employee satisfaction and engagement. By identifying the key drivers, organization can take targeted actions to improve workplace culture, enhance employee satisfaction and increase employee retention.