Power BI Assignment 1

1.What do you mean by BI? Explain.

Ans. BI (Business Intelligence) is a set of processes, architectures and technologies that convert raw data into meaningful information that drives profitable business actions. It is a suite of software and services to transform data into actionable intelligence and knowledge.

BI has a direct impact on organization's strategic, tactical and operational business decisions. BI supports fact-based decision making using historical data rather than assumptions and gut feeling.

BI tools perform data analysis and create reports, summaries, dashboards, maps, graphs, and charts to provide users with detailed intelligence about the nature of the business.

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

Ans. Microsoft Power BI is used to find insights within an organization's data. Power BI can help connect disparate data sets, transform and clean the data into a data model and create charts or graphs to provide visuals of the data. All of this can be shared with other Power BI users within the organization.

It helps analysts by providing:

>Data visualization: Provides interactive charts, graphs, and other visualizations to help analysts quickly understand trends and patterns in data.

>Data exploration: Enables analysts to drill down into data to find specific insights and relationships.

>Data connectivity: Connects to various data sources, making it easy for analysts to access and combine data from multiple sources.

>Collaboration: Allows analysts to share and collaborate on reports and dashboards, improving team communication and decision-making.

Overall, Power BI helps analysts turn data into actionable insights, enabling them to make informed decisions and drive business success.

2. Explain Descriptive analytics?

Ans. Descriptive Analytics is the examination of data or content, usually manually performed, to answer the question "What happened?" (or What is happening?), characterized by traditional business intelligence (BI) and visualizations such as pie charts, bar charts, line graphs, tables, or generated narratives.

Descriptive statistics summarizes or describes the characteristics of a data set. Descriptive statistics consists of three basic categories of measures: measures of central tendency, measures of variability (or spread), and frequency distribution.

Examples of descriptive analytics tools and techniques include:

>Bar charts, line charts, and pie charts

>Histograms and frequency distributions

>Measures of central tendency (mean, median, mode)

>Measures of dispersion (range, variance, standard deviation)

>Cross-tabulation and pivot tables

Descriptive analytics provides a foundation for more advanced types of analytics such as predictive and prescriptive analytics.

3. **Explain Predictive analytics?**

Ans. Predictive analytics is a branch of advanced analytics that makes predictions about future outcomes using historical data combined with statistical modelling, data mining techniques and machine learning. Companies employ predictive analytics to find patterns in this data to identify risks and opportunities. Predictive analytics is often associated with big data and data science.

Examples of predictive analytics tools and techniques include:

>Regression analysis

>Decision trees

>Neural networks

>Time series forecasting

>Collaborative filtering

Predictive analytics requires large amounts of data and the ability to process and analyze it quickly. It also requires domain expertise to develop and validate the models used for prediction.

4. Explain perspective analytics?

Ans. Prescriptive analytics is a type of data analytics that attempts to answer the question "What do we need to do to achieve this?" It involves the use of technology to help businesses make better decisions through the analysis of raw data. Prescriptive analytics specifically factors information about possible situations or scenarios, available resources, past performance, and current performance, and suggests a course of action or strategy. It can be used to make decisions on any time horizon, from immediate to long-term. It is the opposite of descriptive analytics, which examines decisions and outcomes after the fact.

Examples of prescriptive analytics tools and techniques include:

>Optimization algorithms

>Constraint programming

>Simulation

>Game theory

>Decision analysis

Prescriptive analytics is a more advanced form of analytics that requires a combination of technical expertise and domain knowledge to develop and implement effectively.

5.Write five real-life questions that PowerBi can solve.

Ans. 1. What are our top-selling products and which regions are they selling the most in?
2.How have our monthly sales revenue and profit margins changed over the past year?
3. What is the trend in customer churn rate and what factors contribute to it?
4. Which departments and employees have the highest expenses and what can be done to reduce costs?
5. How is our marketing campaign performance and which channels are driving the most conversions?