**Power BI Assignment 1**

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

Ans. Business intelligence (BI) refers to the procedural and technical infrastructure that collects, stores, and analyzes the data produced by a company’s activities.

BI is a broad term that encompasses [data mining](https://www.investopedia.com/terms/d/datamining.asp), process analysis, performance [benchmarking](https://www.investopedia.com/terms/b/benchmark.asp), and [descriptive analytics](https://www.investopedia.com/terms/d/descriptive-analytics.asp). BI parses all the data generated by a business and presents easy-to-digest reports, performance measures, and trends that inform management decisions.

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

Ans. Power BI is a new cloud-based Business Intelligence service provided by Microsoft and derived from its years of experience in relational databases like Access, SQL server etc. It is a business intelligence platform that allows businesses to clean and completely transform data into meaningful data. It thoroughly analyzes data and shares powerful insights.

Power BI is a cloud-based analysis service that provides rapid insight and is used to extract and visualize data. Power BI brings together data from multiple sources to give you a comprehensive view of your company's information assets.

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.

**3. Explain Descriptive analytics?**

Ans.

Descriptive analytics can help to identify the areas of strength and weakness in an organization. Examples of metrics used in descriptive analytics include year-over-year pricing changes, month-over-month sales growth, the number of users, or the total revenue per subscriber.

**Descriptive analytics** is the process of using current and historical data to identify trends and relationships. It’s sometimes called the simplest form of data analysis because it describes trends and relationships but doesn’t dig deeper.

Descriptive analytics is relatively accessible and likely something your organization uses daily. Basic statistical software, such as [Microsoft Excel](https://online.hbs.edu/blog/post/data-visualizations-in-excel) or [data visualization tools](https://online.hbs.edu/blog/post/data-visualization-tools), such as Google Charts and Tableau, can help parse data, identify trends and relationships between variables, and visually display information.

Descriptive analytics is especially useful for communicating change over time and uses trends as a springboard for further analysis to [drive decision-making](https://online.hbs.edu/blog/post/data-driven-decision-making).

### Example.

### **Demand Trends**

Descriptive analytics can also be used to identify trends in customer preference and behavior and make assumptions about the demand for specific products or services.

Streaming provider Netflix’s trend identification provides an [excellent use case](https://www.lineate.com/technology-insights/5-ways-netflix-uses-data-to-win) for descriptive analytics. Netflix’s team—which has a track record of being heavily data-driven—gathers data on users’ in-platform behavior. They analyze this data to determine which TV series and movies are trending at any given time and list trending titles in a section of the platform’s home screen.

Not only does this data allow Netflix users to see what’s popular—and thus, what they might enjoy watching—but it allows the Netflix team to know which types of media, themes, and actors are especially favored at a certain time. This can drive decision-making about future original content creation, contracts with existing production companies, marketing, and retargeting campaigns.

**4. Explain Predictive analytics?**

Ans. 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 patterns that might predict future behavior.

The term predictive analytics refers to the use of [statistics](https://www.investopedia.com/terms/s/statistics.asp) and modeling techniques to make predictions about future outcomes and performance. Predictive analytics looks at current and historical data patterns to determine if those patterns [are likely to emerge again](https://www.investopedia.com/risks-of-pareidolia-in-the-stock-market-7369635). This allows businesses and investors to adjust where they use their resources to take advantage of possible future events. Predictive analysis can also be used to improve [operational efficiencies](https://www.investopedia.com/terms/o/operationalefficiency.asp) and reduce [risk](https://www.investopedia.com/terms/r/risk.asp).

**5. Explain perspective analytics?**

Ans. **Prescriptive analytics** is the process of using data to determine an optimal course of action. By considering all relevant factors, this type of analysis yields recommendations for next steps. Because of this, prescriptive analytics is a valuable tool for [data-driven decision-making](https://online.hbs.edu/blog/post/data-driven-decision-making).

### Banking: Fraud Detection

Another algorithmic use of prescriptive analytics is the detection and flagging of bank fraud. With the sheer volume of data stored in a bank’s system, it would be nearly impossible for a person to manually detect any suspicious activity in a single account. An algorithm—trained using customers’ historical transaction data—analyzes and scans new transactional data for anomalies. For instance, perhaps you typically spend $3,000 per month, but this month, there’s a $30,000 charge on your credit card.

The algorithm analyzes patterns in your transactional data, alerts the bank, and provides a recommended course of action. In this example, the course of action may be to cancel the credit card, as it could have been stolen.

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

Ans.

1. Which products or services are generating the highest revenue for my company?  
2. What are the key factors contributing to customer churn in my subscription-based business?  
3. How does employee productivity vary across different departments or teams in my organization?  
4. What are the most effective marketing channels for acquiring new customers?  
5. Are there any seasonal or monthly trends in my sales data that can help me optimize inventory management and production planning?