Q1. What do you mean by BI? Explain.

Ans: Business Intelligence is a set of processes, architectures, and technologies that convert raw data into meaningful information that drives profitable business actions. It 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.

Advantages of Business Intelligence

a. It allows for easy analytics.

BI software has democratized its usage, allowing even nontechnical or non-analysts users to collect and process data quickly. This also allows putting the power of analytics from the hand's many people.

b. Boost productivity

With a BI program, It is possible for businesses to create reports with a single click thus saves lots of time and resources. It also allows employees to be more productive on their tasks.

c. It streamlines business processes:

BI takes out all complexity associated with business processes. It also automates analytics by offering predictive analysis, computer modeling, benchmarking and other methodologies.

Disadvantage of bi

a. Time Consuming Implementation

It takes almost one and half year for data warehousing system to be completely implemented. Therefore, it is a time-consuming process.

b. Cost:

Business intelligence can prove costly for small as well as for medium-sized enterprises. The use of such type of system may be expensive for routine business transactions.

c. Complexity:

Another drawback of BI is its complexity in implementation of datawarehouse. It can be so complex that it can make business techniques rigid to deal with.

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

Ans: Power BI is a BI and data visualization tool that leverages visual analytics to empower people and organizations in making the most of their data. The engaging visualizations created in Power BI take the excel workflow to the next level and help stakeholders make sense of the massive amounts of data available.

Key features of Power BI

a. Artificial Intelligence -- Users can access image recognition and text analytics in Power BI, create machine learning models using automated machine learning capabilities and integrate with Azure Machine Learning.

b. Customization -- This feature allows developers to change the appearance of default visualization and reporting tools and import new tools into the platform.

c. Common data model support -- Power BI's support for the common data model allows the use of a standardized and extensible collection of data schemas (entities, attributes and relationships).

Who uses Power BI

Though Power BI is a self-service BI tool that brings data analytics to employees, it's mostly used by data analysts and business intelligence professionals who create the data models before disseminating reports throughout the organization. However, those without an analytical background can still navigate Power BI and create reports.

Microsoft Power BI is used by both department reps and management, with reports and forecasts created to aid sales and marketing reps, while also providing data for management on how the department or individual employees are progressing toward their goals.

Q2. Explain Descriptive analytics?

Ans: 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. It is especially

useful for communicating change over time and uses trends as a springboard for further analysis to drive decision-making.

Descriptive analytics is relatively accessible and likely something your organization uses daily. Basic statistical software, such as Microsoft Excel or data visualization tools, such as Google Charts and Tableau, can help parse data, identify trends and relationships between variables, and visually display information.

EXAMPLES OF DESCRIPTIVE ANALYTICS

a. 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 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.

b. Financial Statement Analysis

Another example of descriptive analytics that may be familiar to you is financial statement analysis. Financial statements are periodic reports that detail financial information about a business and, together, give a holistic view of a company's financial health.

There are several types of financial statements, including the balance sheet, income statement, cash flow statement, and statement of shareholders' equity. Each caters to a specific audience and conveys different information about a company's finances.

Q3. Explain Predictive analytics?

Ans: Predictive analytics is the use of data to predict future trends and events. It uses historical data to forecast potential scenarios that can help drive strategic decisions. Predictive analysis can be conducted manually or using machine-learning algorithms. Either way, historical data is used to make assumptions about the future. The predictions could be for the near future—for instance, predicting the malfunction of a piece of machinery later that day—or the more distant future, such as predicting your company's cash flows for the upcoming year.

EXAMPLES OF PREDICTIVE ANALYTICS

a. Marketing: Behavioral Targeting

In marketing, consumer data is abundant and leveraged to create content, advertisements, and strategies to better reach potential customers where they are. By examining historical behavioral data and using it to predict what will happen in the future, you engage in predictive analytics.

b. Finance: Forecasting Future Cash Flow

Every business needs to keep periodic financial records, and predictive analytics can play a big role in forecasting your organization's future health. Using historical data from previous financial statements, as well as data from the broader industry, you can project sales, revenue, and expenses to craft a picture of the future and make decisions.

c. Manufacturing: Preventing Malfunction

While the examples above use predictive analytics to take action based on likely scenarios, you can also use predictive analytics to prevent unwanted or harmful situations from occurring. For instance, in the manufacturing field, algorithms can be trained using historical data to accurately predict when a piece of machinery will likely malfunction.

Q4. Explain perspective analytics?

Ans: Prescriptive analytics is a process that analyzes data and provides instant recommendations on how to optimize business practices to suit multiple predicted outcomes. In essence, prescriptive analytics takes the "what we know" (data), comprehensively understands that data to predict what could happen, and suggests the best steps forward based on informed simulations. Prescriptive analytics is the natural progression from descriptive and predictive analytics procedures. It goes a step further to remove the guesswork out of data analytics. It also saves data scientists and marketers time in trying to understand what their data means and what dots can be connected to deliver a highly personalized and propitious user experience to their audiences.

Benefits of prescriptive analytics

a. Effortlessly map the path to successs

Prescriptive analytic models are designed to pull together data and operations to produce the roadmap that tells you what to do and how to do it right the first time. Artificial intelligence takes the reins of business intelligence to apply simulated actions to a scenario to produce the steps necessary to avoid failure or achieve success.

b. Reduce human error or bias.

Through more advanced algorithms and machine learning processes, predictive analytics provides an even more comprehensive and accurate form of data aggregation and analysis than descriptive analytics, predictive analytics, or even individuals.

Q5. Write five real-life questions that Power Bi can solve.

Ans: a. Business Intelligence solutions: The market is not responsive enough

This problem is virtually as irritating, as losing clients — you produce something, but the market reacts too slowly, or even doesn't react at all. And if you don't understand what's going on, you won't be able to solve the problem and lead your company to success. Using business intelligence solutions, you will be able to define what the market is purchasing at the moment. You can analyze the reports on a daily basis, so your decisions will be even more efficient and relevant. For instance, if you identify where and how many items of a certain product were sold, you will be able to improve your sales strategy.

b. Excessive time spent preparing for presentations

Whether it's for a meeting with potential investors, sharing the latest figures with your shareholders, or leading an internal meeting with your colleagues, presentation preparation can be tedious. On top of collecting all of the data you want to share, the information has to then be put into a visually appealing presentation. If you want to include charts, graphs, and images, presentations can take a significant amount of time to produce. In addition to that, by the time the presentation is complete, the data will already be outdated.

c. Performance management is far from perfection

Use your imagination one more time — imagine that a year ago you released an innovative product. The product itself has prospects, and everything seems to be fine. But even after a year, you haven't reached the desired result, and the sales are pretty low. Something is going wrong, and the reason may arise from poor performance management. With business intelligence software, you can gain a much deeper understanding of your company's performance and potential opportunities.

d. Only tech teams can develop custom reports

A lot of traditional tools that allow analyzing data and reporting are too complicated, so usually only tech teams are able to use them properly. And this is not the only problem

in this case — every time you need a report, you will have to delegate this task to your tech department. This means another waste of time. Instead, business intelligence tools are much easier to use.

e. Being Unable To Find Specific Data Sets

Sifting through spreadsheets in search of specific data sets is time-consuming and inefficient. One of the most useful Power BI solutions is the ability to easily search for data and data-sets.Power BI allows IT members to publish data catalogs for others to view. This makes it easier for you to find the data sets needed to perform an analysis. Additionally, using natural language technology and its Question & Answer feature provides a more natural experience to locate and better understand your BI.