**Power BI Assignment 1**

1. What do you mean by BI? Explain.

* BI represents the technical infrastructure that collects, stores, and analyzes company data.
* BI analyse data and produces reports and information that help managers to make better decisions.
* Some Bi tools available in market are PowerBi, Tableau,Datapine,Sisence, YellowfinBi, Qlickview.
* Common functions of business intelligence tools include reporting, analytics, dashboard development, data mining, process mining, benchmarking, text mining, predictive analytics and prescriptive analytics.

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

* Power BI is a platform that provides nontechnical business users with tools for aggregating, analyzing, visualizing and sharing data.
* It turns multiple unrelated data sources into valuable and interactive insights.
* Telling stories through charts and data visualizations.
* creating reports that can answer questions in real time and help with forecasting to make sure departments meet business metrics.
* one can easily connect to all availble data sources and share the insights with anyone.

1. Explain Descriptive analytics?

* Descriptive analytics is type of data analytics which answers the question, “What happened?”
* Descriptive analytics is the process of using current and historical data to identify trends and relationships.
* Descriptive analytics is relatively accessible and likely something that organization uses daily.
* Descriptive analytics is especially useful for communicating change over time and uses trends for further analysis to drive decision-making.
* For Example : Demand Trends

1. 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.
2. 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.
3. 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?

* Predictive analytics is type of data analytics which answers the question, “What might happen in the future?”
* 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.
* One predictive analytics tool is regression analysis, which can determine the relationship between two variables (single linear regression) or three or more variables (multiple regression). The relationships between variables are written as a mathematical equation that can help predict the outcome.
* For Example : Marketing: Behavioral Targeting

1. In marketing, consumer data is plentiful and used to create content, advertisements, and strategies to better reach potential customers where they are.
2. Using predictive analytics one examine historical behavioral data and use it to predict what will happen in the future.
3. Predictive analytics can be applied in marketing to forecast sales trends at various times of the year and plan campaigns accordingly.
4. Additionally, historical behavioral data can help to predict a lead’s likelihood of moving down the funnel from awareness to purchase.
5. Explain perspective analytics?

* Prescriptive analytics is type of data analytics answers the question, “What should we do next?”
* 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.
* Machine-learning algorithms are often used in prescriptive analytics to analyse through large amounts of data faster—and often more efficiently—than humans can. Using “if” and “else” statements, algorithms examine through data and make recommendations based on a specific combination of requirements.

For instance, if at least 50 percent of customers in a dataset selected that they were “very unsatisfied” with your customer service team, the algorithm may recommend additional training.

* It’s important to note that algorithms can provide data-informed recommendations, they can’t replace human discernment. Prescriptive analytics is a tool to inform decisions and strategies and should be treated as such. One’s judgment is valuable and necessary to provide context and guard rails to algorithmic outputs.
* For Example - Marketing: Email Automation

1. Email automation is a clear-cut example of prescriptive analytics at work. Marketers use email automation to sort leads into categories based on their motivations, mindsets, and intentions and deliver email content to them based on those categories.
2. Any interactions leads have with emails can put them in another category, resulting in a different set of messages being triggered.
3. While this is pure algorithmic prescriptive analysis, a person should plan, create, and oversee automation flows. Email automation allows companies to provide personalized messaging at scale and increase the chance of converting a lead into a customer using content that applies to their motivations and needs.
4. Write five real-life questions that PowerBi can solve.
5. **Traditional reporting process is time consuming :-**

* Gathering a huge amount of data from different sources can be an uphill task. One have to manually generate the report from the beginning and to be replicated during set intervals. This is a challenge faced by many corporations.
* But as the business grows, waiting for data and then reworking on the reports to get the updated data is not a good approach as it affects your timeline and your productivity.
* Power BI helps to access data instantly with less manual work. It can handle a huge amount of data making it easy to interpret using advanced visualizations. It allows you to get data from different data sources by automatically connecting with them, saving you time and effort.
* Once a report is created, one only have to hit refresh or enable a schedule refresh to get real-time insights.

1. **Finding specific data in large data volumes with power bi :-**

* Going through spreadsheets in search of specific datasets is cumbersome. Data is presented in a non-user-friendly way and finding specific data from a vast amount of data can be quite inefficient.
* Power BI, providing the users with an easy search of datasets. Once have imported a dataset in PBI Desktop, one can access that anytime, from anywhere, as many times as.
* On the main report page and in the data section there is a search right at the top of Fields. With that, one can search and filter all your objects to only those that match. Data can also be shared and published for others to view, so they can also have access to it and take an equal part in the decision-making process.

1. **Data quality :-**

* Poor quality data can lead to inaccurate analytics and ill-conceived business strategies. If data is not accurate, complete, and clean, companies can make costly mistakes.
* Power BI helps you quickly identify data quality issues and provides numerous ways to address them. Power Query provides you with exciting features to clean and prepare data for analysis.
* The data profiling tools can help you remove all the inconsistencies, null values, and data quality problems.

1. **Lack of security :-**

* If data is not secured correctly, it can get lost due to system failure, corrupted by a computer virus, deleted or altered by a hacker.
* Power BI overcomes these issues by leveraging Azure Active Directory for authentication and Power BI login credentials to access the resources.
* One can grant access to data only to the people of choice. Row-Level Security (RLS) is also possible in Power BI, which helps secure data and streamline administration.
* And, by using Microsoft Information Protection, one can define sensitivity labels and enforces governance policies whenever data is accessed.

1. **Only tech teams can create business reports:-**

* Companies use many reporting tools to build their reports, but they are complicated. This is the reason that only tech teams can use them.
* Every time one want to open the report or perform a minor change in it, one must wait for tech team to accomplish it. So, this means yet another delay.
* On the other hand, Microsoft Power BI is a user-friendly and simple tool and can be used by anyone, even by non-experienced BI people. Usually, a skilled person is required to model the data, but no special skills are required in Power BI.