**Power BI Assignment 1**

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

BI stands for Business Intelligence. Business Intelligence is a set of process and architecture that converts existing and past raw data into meaningful information and insights that drives the profitable business actions. Business Intelligence is the suite of software, technologies and services to transform data into actionable intelligence and knowledge. In simple words Business Intelligence is the process that convert existing and past raw data into some meaningful insights that solution to the various business problem of business stakeholder in form of reports, Dashboard to optimize the business performance.

Business Intelligence include Business Analytics, Data Mining, Data Visualization, Data tools and Infrastructure and helps organizations to take better data driven decisions. Tools such as Power Bi, Tableu, Excel, Python and SQL. Business Intelligence helps in better decision making, to identify KPI (Key Performance Indicator) etc.

It takes every single data from Business partners and replies to different inquiries like why it happened? why it didn't work out? what may be an answer? and so on. Business Intelligence is valuable for business aiming to increase revenue, improve products and retain customers

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

Power Bi is the Business Intelligence tool developed and maintained by Microsoft which is capable to handle huge amount of data and can get data form different source we can say 100+ sources such as .csv file, databases etc. It is an advanced version of Microsoft Excel that help us to clean, model and visualize data and draw some meaningful insights from it.

Power Bi helps Analyst in the following ways:

* Power Bi is capable in getting data from multiple data sources such as .csv, .xls,. tsv and various databases. It helps analyst to easily integrate data from different sources and analyze it.
* Power Bi help analyst to create Data model defining the relationship between different data
* Power Bi makes Data visualization task very easy, it’s just and drag and drop and there are the 180+ visualization techniques such as charts, graphs, tables available so analyst can use an appropriate technique to visualize the data
* Power Query Editor in power Bi helps to record of changes done by the analyst. It also helps analyst to clean data whenever needed. To jump between various steps involved while making changes and delete step if not required.
* Analyst cab post the work such as dashboard and reports online on a workspace/stakeholder community that they can interact with reports to see their performance analysis or any other information

1. **Explain Descriptive analytics?**

Descriptive analytics help us to answer the question What Happened? Descriptive Analytics imputes Descriptive statistical (Descriptive Statistics consist of organizing and summarizing of data which include Measure od central tendency such as Mean, Mode, Median and measure of dispersion such as Variance and Standard Deviation) methods in real time data to know the current stance of business. Descriptive analytics is the most common and fundamental form of business analytics used to evaluate current business performance, identify the pattern in Historical data and where the business lags. It used to identify KPI (Key Performance Indicator). As an example, if a person owns a business where he manufactures various products so using descriptive analytics, we can find which product is most preferred by the customers or which product generate the more profit, the sales of the product in different market region and profit generated from it respectively.

1. **Explain Predictive analytics?**

Predictive analysis is used to answer question What could Happen? Predictive analytics is the process where various Mathematical and Machine Learning Models are used on the raw and existing data to predict futuristic events that are most likely to occur if current trend or business performance continues. Predictive analytics uses Descriptive statistical result in various machine learning/Mathematical model. Predictive analytics is also important for business as it tell future threats and business problems, help to sustain in the market. It is commonly used in supply chain sector.

The best example of predictive analytics is the COVID-19 cases prediction how government was able to predict about different COVID waves when it will start and how long it will last and will affect most people or not.

1. **Explain perspective analytics?**

Perspective analytics uses both descriptive and predictive analysis to answer the question What can we do about it? It used to make more better and informed decision for the business. The output of the perspective analysis is decision rather than a statistic, probability, estimation of future outcome. Perspective analytics optimal plan or solution that might reduce the negative impact or improve the current performance of the business. It leads business to the success. Perspective analytics can be used to answer the question like what should we do increase the profit or sales of a particular product in following market region.

Perspective Analysis

Predictive Analysis

Descriptive Analysis

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

If a company produce or manufacture different products so we can collect the sales data from the company and using Power Bi we can answer the following questions:

* Which product generate most profit for the company?
* What was sales of various product across different market region over a year?
* How much quantity of each product is sold across different market region over a year?
* Which market region purchased most of the product?
* Which customer segment generates more profit?