Power BI Assignment 1

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1. What do you mean by BI? Explain.

⇨ Business intelligence (BI) combines business analytics, data mining, data visualization, data tools and infrastructure, and best practices to help organizations make more data-driven decisions. As part of the BI process, organizations collect data from internal IT systems and external sources, prepare it for analysis, run queries against the data and create data visualizations, BI dashboards and reports to make the analytics results available to business users for operational decision-making and strategic planning.

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

⇨ Power Bi is a tool that offers a simplifies process of data analysis, provides a user-friendly interface which enhances productivity & empowers the analysts to extract data-driven insights, which leads a better outcome for the day-to-day business problems. Some of the key points are as follows: -

- It's vast range of connectivity of data from databases, clouds services, web APIs, Excel, text & etc.
- It's also ensure the accuracy of data for correct analysis by cleaning, transforming, merging & modelling of the data before loading it in at the power query editor.
- It can also efficiently deal with data streaming, surveil the KPIs & data real-time for the business that requires up-to-the-minute insights to make a timely decision.
- It allows us to create interactive & visually appealing charts, reports & dashboards.
- It allows analyst to securely share the reports/dashboard with the colleagues & stakeholders.
- It also allows analyst to access his/her report at anywhere anytime.

3. Explain Descriptive analytics?

⇨ Descriptive Analytics seeks to answer the question “What happened?” In the past, understanding historical data helped with examinations even without making conclusions & predictions of the future. It includes: -

- Looking at past events & performance of historic data.
- Constrict the larger data into smaller easily feasible chunks.
- Aggregation of data points into statistics summary or visualization.
- Tracking the KPIs in order to measure the previous performance of the business.
- Provide clear & concise regular overview reports for decision-maker/stakeholders.
- Create visually appealing charts, reports & dashboards which are easier to read & analysis the trends & patterns.

4. Explain Predictive analytics?

⇨ Predictive Analytics seeks to answer the question “What is likely to happen?” in the future by forecasting outcomes and identifying the behaviour trends & patterns of historical data. Unlikely to descriptive analysis it focuses on making prediction for the behaviour of trends & patterns with the help of advance data analysis like statistical algorithms & machine learning models for future outcomes. It includes: -

- Preparation of Data by cleaning & transforming it for accuracy of analysis.
- Identification & selection features as input for predictive model.
- Develop & train predictive model by adjusting parameters for accurate prediction.
- Estimating the performance of predictive model by precision, recall, accuracy or mean squared error that determine its effectiveness.
- Making predictions for the future by application of the trained model on new data.
- Creating accurate predictive models, is an ongoing process of improving them with new data over time.
- Using trained models to predict future events with new data.

- It is useful in sales, customer churn, fraud detection, inventory, healthcare & etc.

5. Explain perspective analytics?

⇨ Perspective analytics is the most advanced level of data analysis which goes beyond both descriptive & predictive analysis. It recommends the best course of action along with future outcomes predictions in order to achieve the optimised desired results. It includes: -
   - ❖ Unlikely above it also starts with collection, analysing historic data pattern & trends understanding.
   - ❖ Like predictive analytics it also implies similar model techniques for the forecasting future outcomes trends & patterns based on historic data.
   - ❖ After the feasible series of development of future outcomes attained various techniques like ML, algorithms, AI & etc. were used in order to make decisions for that chain of events.
   - ❖ Critiquing every outcome from that chain of events based upon pre-planned norms like efficacy, risk, profitability, satisfaction of targeted audience & etc.
   - ❖ Concurrent remodeling according to direction of moderating conditions of incoming data.

6. Write five real-life questions that Power BI can solve.

⇨ Here, are the five real-life questions that Power BI can solve: -
   - o What is the historical performance of stocks as it compared to its industry peers?
   - o Has the newly discovered drug been performed based on its efficacy, side-effects over a region, age groups, gender?
   - o How the behaviour of Temperature, Heatwaves, Atmospheric pressure, Humidity, Rainfall, Windspeed changes over a period of years, quarters, months?
   - o What are the patterns of customer transactions whose are the most & least transacting age groups, how to target the least transacting people?

- How the factors like rainfall, soil quality, soil type, weather conditions, quality of seed & type of irrigation methods at different regions will give the optimised productions of crops?