***Power BI Assignment-1***

1.Power BI is a business analytics solution that lets us visualize data and share insights across our organization(or embed them in our website or app). Power BI helps us to create live dashboards and reports. It provide interactive visualizations with self-service business intelligence capabilities, where end users can create reports dashboards by themselves,without having to depend on any information technology staff or database administrator.

2. **1. The hybrid deployment support:** It helps the business intelligence tool to connect to different sources of data and allows the automatic application of analytics to information by creating data subsets through the Quick Insights feature.

**2. Power Query:** It allows integration and transformation of data into the Power BI web service for enhanced Data Visualization.

**3. The common data model:** This allows the use of extensible database construction.

**4. The customization feature:** It can change the appearance of the Data visualization tools and can also import new tools into the platform.

**5. The Power BI dashboard:** It can be embedded in other software products via APIs.

Reasons how Power BI will help business analyst ➖

-Power BI makes it easy to combine your data into one place for better accessibility, organization, and visibility in your reporting efforts.Power BI’s drag and drop interface makes it easy to use Power BI. Power BI can also combine multiple files (such as Excel spreadsheets) into one report that allows you to analyze and code the merged data.

-Power BI’s Power Pivot database modeling engine, which is shared with Excel, is a high-performing columnar database that uses modern tabular databases to compress tables and ensure full memory access for maximum performance. Excel can slow down when working with large models by comparison, but Power BI is optimized to handle tables exceeding 100 million records quickly.

-Power BI includes a lot of pre-packaged standard data visuals that you can leverage in your interactive reports. These include a bar, column, and line, matrix, pie charts and scatter, table, waterfall, and scatter. Each of these visuals has its own customization options to enhance presentation and functionality. Power BI allows you to make your data visuals that are unique and different from the standard. It is also very useful to see what other Power BI users are using to help you develop your design skills.

-R scripts combine complex graphics and statistical computing to perform data manipulation, machine learning, and statistical modeling. This includes data visualization. Power BI allows you to integrate these R visualizations into a standard dashboard.Power BI can be used by itself to drill down into data and slice it to better reflect relationships, key metrics, hierarchies and hierarchies. However, native support for R scripts allows users to present advanced business analytics and shaping such as machine learning, predictive trends, smoothing, and smoothing.

-Advanced Excel users who are proficient in Data Analysis Expressions can dig deeper into their data to find patterns with Power BI. Power BI features such as clustering, grouping, forecasting, and quick measures make it easier for them to use Power BI.

Another advantage of Power BI is its seamless integration with Excel. This eliminates the need to export data. Simply click on ‘Analyse Excel’ to see an identical interface to Excel. Power BI’s native integration with Excel is a great option if you have had difficulty getting users in your business to use a new tool.

3.Descriptive analytics is a statistical method that is used to search and summarize historical data in order to identify patterns or meaning.

For learning analytics, this is a reflective analysis of learner data and is meant to provide insight into historical patterns of behaviors and performance in online learning environments.

For example, in an online learning course with a discussion board, descriptive analytics could determine how many students participated in the discussion, or how many times a particular student posted in the discussion forum.

4.Predictive analytics is a branch of advanced analytics that makes predictions about future outcomes using historical data combined with statistical modeling, data mining techniques and[machine learning](https://www.ibm.com/topics/machine-learning). Companies employ predictive analytics to find patterns in this data to identify risks and opportunities.

5.These analytics go beyond descriptive and predictive analytics by recommending one or more possible courses of action. Essentially they predict multiple futures and allow companies to assess a number of possible outcomes based upon their actions. Prescriptive analytics use a combination of techniques and tools such as business rules, algorithms, machine learning (ML) and computational modelling procedures. These techniques are applied against input from many different data sets including historical and transactional data, real-time data feeds, and big data.

Prescriptive analytics are relatively complex to administer, and most companies are not yet using them in their daily course of business. When implemented correctly, they can have a large impact on how businesses make decisions, and on the company’s bottom line. Larger companies are successfully using prescriptive analytics to optimize production, scheduling and inventory in the supply chain to make sure they are delivering the right products at the right time and optimizing the customer experience.Use prescriptive analytics any time you need to provide users with advice on what action to take.

5. Five real life problems Power BI can solve:-

* Data Security is an essential issue for the adoption of any technology. 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. This can lead to consequences like financial loss, reputational damage and loss of your customers. Power BI overcomes these issues by leveraging Azure Active Directory for authentication and Power BI login credentials to access the resources.
* 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.
* Power BI helps in monitoring the processes of the company. It can easily spot trends with the help of the data gathered during monitoring. Data Analysis Expressions (DAX) provides a wide range of functionalities for trends analysis. The trending AI Capabilities of Power BI help you visualize the future using predictive analytics and other such big data tools. This can help businesses foresee any need to recruit more employees, change a specific requirement, or further invest in technology.
* While being able to [share documents](https://www.kizan.com/document-management) (such as quarterly reports) with employees through the cloud was exciting when it first came out, it leaves too much room for human error.Using Power BI reduces the possibility of error by allowing reports to be run in seconds using only the most current data. This ensures that reports can’t be altered or deleted and eliminates the time spent sifting through files to find the correct data.
* Power BI can quickly and easily create visual representations of your data and provide stunning and accurate presentations for your meetings. Using Power BI’s [automated reporting tools](https://info.kizan.com/business-process-automation-ebook) can save hours of preparation.