Assignment **23 August 2021**

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Que1. What is Power BI? Explain the features of power BI?

Answer:

-Microsoft Power BI is a suite that is a collection of business intelligence tools such as software services, apps and data connectors.

-It is a cloud-based platform used to consolidate data from varied sources into a single data set.

-These data sets are used for data visualization, evaluation, and analysis by making sharable reports, dashboards, and apps. Microsoft offers three types of Power BI platforms

-i.e. Power BI Desktop (a desktop application), Power BI Service (SaaS i.e., Software as a Service) and Power BI Mobile (for iOS and Android devices).

-Power BI can be deployed both on-premise and on-cloud.

-It can also import data from local databases/data sources, cloud-based data sources, big data sources, simple Excel files, and other hybrid sources.

-Thus, Power BI, a leader amongst a lot of other BI tools proves to be an efficient and user-friendly tool for data analysis.

-It enables the users to consolidate data from multiple sources, make interactive dashboards, evaluate data, create informative reports and share it with other users.

-**Features:**

-Range of Attractive Visualizations:

-Visualizations i.e. the visual representation of data plays a central role in Power BI. It offers a wide range of detailed and attractive visualizations.

-We can create reports and dashboards using as simple or as complex visualizations as we want to represent our data set with. There is also a library available for custom visualizations.

-In Power BI you can create visualizations such as:

-Stacked bar chart

-Stacked column chart

-Clustered bar chart

-Clustered column chart

-100% stacked column/bar chart

-Line chart

-Area chart

-Stacked area chart

-Ribbon chart

-Waterfall chart

-Scatter chart

-Pie chart

-Donut chart

-Tree-map chart

-Map

-Filled map

-Funnel chart

-Gauge chart.

-**Get Data (Data Source)**

-Get Data feature lets Power BI users to select from a range of data sources.

-The data sources are anywhere in the spectrum from on-premise to cloud-based, unstructured to structured. New data sources are added every month.

- Some of the latest available data sources are as follows:

-Excel

-Power BI datasets

-Power BI dataflows

-SQL Server

-MySQL database

-Analysis Services

-Azure

-Text/CSV

-Oracle

-PDF

-Access

-XML

-JSON

-**Datasets Filtration**

-Dataset is a single set of data created as a result of taking data from multiple data sources.

-We can use the datasets to create visualizations of different kinds. A dataset can be made of data taken from a single source like an Excel workbook or from more than a data source.

-**Customizable Dashboards**

-Dashboards are a collection of visualizations offering meaningful information or insights into data. Typical dashboards in Power BI are composed of multiple visualizations as tiles.

-They are single pages from the reports. The dashboards are shareable as well as printable.

- **Flexible Tiles**

-A tile is a single block containing a visualization in a Power BI dashboard. Tiles segregate each informative visualization properly to provide a clearer view.

-**Informative Reports**

-Reports in Power BI are a combination of dashboards having a different kind of visualizations relevant to a particular business topic. A report shows a complete and structured presentation of data represented in different ways and revealing important insights from the data.

-**Natural Language Q & A Question Box**

-The Natural Language Q&A i.e. question and answer box is a unique feature of Power BI. Using the Q&A box, a user can ask questions in natural language to search for data and information available in Power BI system. The cognitive engines of Power BI will search for the data or visualization or a part of the report that is been searched for and return it to the user.

-**DAX Data Analysis Function**

-The DAX functions are the Data Analysis Expressions found in Power BI. These analysis functions are predefined codes to perform analytics specific functionalities on data.

Que2.Why power BI required?

Answer:

-**A quick start**.

-We will be able to get insights quickly with an uncomplicated setup, no required training, and included dashboards for services such as Salesforce, Google Analytics, and Microsoft Dynamics.

-Streamlined publication and distribution.

-Instead of emailing large files or putting them on a shared drive, analysts upload reports and visualizations to the Power BI service, and their data is refreshed whenever the underlying dataset is updated.

-Real-time information.

-Dashboards update in real time, as data is pushed or streamed in, which gives viewers the ability to solve problems and identify opportunities quickly.

-Any report or dashboard can display and update real-time data and visuals. Sources of streaming data can be factory sensors, social media sources, or anything from which time-sensitive data can be collected or transmitted.

-Ability to customize Power BI app navigation.

-An app navigation experiences feature gives report developers the power to customize navigation to help viewers find content quickly and understand the relationships between different reports and dashboards.

-Ability to customize security features. Report developers can set up row-level security (RLS) access filters to ensure that viewers see only data relevant to them, mitigating the risk of people seeing data they shouldn’t.

-Cortana integration.

-Power BI works with Microsoft’s digital assistant, Cortana. Users can verbally ask questions in natural language to access charts and graphs. This can be especially helpful for users with mobile devices.

-Artificial Intelligence.

-Power BI users can access image recognition and text analytics, create machine learning models, and integrate with Azure Machine Learning.

Que3. Explain Building blocks of power BI?

Answer:

-Power BI is a gathering of administrations, applications, and connectors that empowers we in into interface with our information.
-Wherever it happens to live channel it is essential, at that point bring it into Power BI where we can make convincing perceptions can impart to others.
-All that you do in Power BI can separate into a couple of essential building squares. When you comprehend these building squares, We can develop every one of them and start making detailed and complex reports.
-All things considered, even apparently complex things are worked from fundamental building squares structures are made with wood, steel, cement and glass.
-Autos are produced using metal, texture, and elastic. Obviously, structures and autos can fundamental or intricate also relying upon how those essential building squares are a mastermind.
-How about we investigate these fundamental building squares, examine some straightforward things that can work with them, at that point give a look into how complex things can make also.
-The fundamental Power BI building block are:

-Visualizations
-Datasets
-Reports
-Dashboards
-Tiles

-**Visualization**

-A perception is a visual portrayal of information. For example, a diagram, chart, shading coded outline, other intriguing things you can make to speak to your information outwardly.

-Power BI has a wide range of various perception writes, and additionally coming constantly. The accompanying picture demonstrates a gathering of various visualization that was made in the Power BI benefit.

-**Datasets**

-A dataset is an accumulation of information that Power BI uses to make its representations. We can have a basic dataset light of a solitary table from Excel exercise manual, like what's appeared in the accompanying picture.

-**Reports**

-In Power BI, a report is a gathering of perceptions that seem together on at least one pages. Much the same as some other report you may make for a business introduction, or a report you would compose for a school task, in Power BI a report is an accumulation of things that identify with each other.

-The accompanying picture demonstrates a report in Power BI Desktop for this situation, it's the fifth page in a six-page report. We can likewise make reports in the Power BI benefit.

-**Dashboards**

-When we prepare to share a solitary page from a report or offer an accumulation of perceptions, you make a dashboard. Much like the dashboard in an auto.

-**Tiles**

-In Power BI, a tile is a solitary representation found in a report or on a dashboard. It's the rectangular box that contains every individual visual. In the accompanying picture, We can see one tile (featured by a splendid box) which additionally encompass by different tiles.

Que4. Explain the Components of power BI

Answer:

–Power BI made of 6 main components, these components released in the market separately, and they can be used even individually. Components of Power BI are:

-Power Query: Data mash up and transformation tool.
-Power Pivot: In-memory tabular data modelling tool
-Power View: Data visualization tool
-Power Map: 3D Geo-spatial data visualization tool
-Power Q&A: Natural language question and answering engine.
-Power BI Desktop: A powerful companion development tool for Power BI.

-There are many other parts for Power BI as well, such as;

-PowerBI.com Website which Power BI data analysis can be shared through this website and hosted there as cloud service
-Power BI Mobile Apps; Power BI supported in Android, Apple, and Windows Phones.

-Some of above components are strong and has been tested for very long time. Some of them however are new and under frequent regular updates. Power BI built easy graphical user interfaces to follow, so a business user simply could user Power Query or Power BI desktop to mash up the data without writing even a single line of code.

-It is on the other hand so powerful with power query formula language (M) and data analysis expression (DAX) that every developer can write complex codes for data mash up and calculated measures to respond challenging requirements.

-So if you've heard somewhere that Power BI is a basic self-service data analysis tool for business analysts and cannot be used for large enterprises system,I have to say this is totally wrong. I have been using Power BI technology myself in many large enterprise scale systems and applications, and I've seen usage of that in many case studies all around the world.

- Power Map is an add-in for Excel 2013, it is embedded in Excel 2016 as 3D maps. Power Q&A doesn't require any installation or add-in, it is just an engine for question and answering that works on top of models built in Power BI with other components.

Que5. Advantages and Disadvantages of power BI?

Answer:

-Advantages:

-Integrates seamlessly with existing applications:

-Power BI integrates easily with your existing business environment allowing you to adopt analytics and reporting capabilities. Microsoft Azure Consultants can also help in leveraging this intuitive tool to embed interactive visuals in your applications easily.

-Rich personalized dashboards:

-The crowning feature of Power BI is the information dashboards, which can be customized to meet the exact need of any enterprise. We can easily embed the dashboards and BI reports in the applications to provide a unified user experience.

-Publish reports securely:

-The tool helps to setup automatic data refresh and publish reports allowing all the users to avail the latest information.

-No memory and speed constraints:

-Shifting an existing BI system to powerful cloud environment with Power BI embedded eliminates memory and speed constraints ensuring data is quickly retrievable and analyse.

-No specialized technical support required:

-Power BI provides agile inquiry and analysis without the need for specialized technical support. It supports a powerful natural language interface and the use of intuitive graphical designer tools.

-Extracting business intelligence rapidly and accurately:

-It helps in transforming your enterprise data into rich visuals, thus extracting business intelligence for enhanced decision making.

-Balanced simplicity and performance:

-The in-memory analysis technology and DAX scripting language are both exquisite examples of a balance between simplicity and performance.

-Disadvantages:

-Dashboards and reports are only shared with the users who are having the same email domains.

-Power BI will not merge imported data that is accessed from real-time connections.

-Power BI only accepts the file size maximum 250 Mb and the zip file which is compressed by the data of the x-velocity in-memory database.

-Dashboard never accepts or pass user, account, or any other entity parameters.

-Very few data sources permit real-time connections to Power BI reports and dashboards.