Power BI Assignment

1. **What is Power BI and how does it differ from Excl.**

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| EXCEL | POWER BI |
| Excel is a spreadsheet software used for data organization, transformation, calculation, and basic visualization | Power BI is a data visualization and business intelligence tool that offers more advanced capabilities |
| Excel has limitations in the amount of data it can work with | Power BI can handle large datasets and has faster processing |
| Power BI can connect to a large number of data sources | Excel's connectivity capacity is limited |

1. **Explain the concept of data model in Power BI.**

* A data model in power bi is a visual representation of data and its relationship.

1. **What are the different types of connections available in Power BI?**

* There are three type of connection:

1. Import data
2. Direct query
3. Live connection
4. **How do you handle data transformation in Power BI?**

* Here are some ways to transform data in power bi:

1. Change datatype
2. Use power query
3. Remove rows
4. Replace values
5. **What is DAX (Data Expressions) and why is it important in Power BI?**

* DAX stands for data analysis expression. It is used to perform calculation on column. ”//” is to add comment in DAX.

It is important because through that we can perform calculation on columns.

1. **Can you explain the difference between calculated columns and measures in Power BI?**

* Difference between calculated columns and measure in power bi:
* Calculated columns are best for row-level computations, while measures are perfect for aggregated calculations.
* A calculated column belongs to a single table, while a measure belongs to the whole data model.
* A calculated column is evaluated in a row context (row by row), while a measure is evaluated in the filter context.

1. **How do you handle relationships between tables in Power BI?**

* Handling relationship between table in power bi:
* Open your data model in Power BI.
* Select the two tables you want to connect.
* Click on the Manage Relationships button in the Home tab.
* In the Manage Relationships dialog box, click on New.
* Select the fields that you want to connect.
* Define the relationship type (one-to-many or many-to-many).
* Click OK to save the new relationship.

1. **What is the purpose of a Power BI Gateway?**

* The purpose of power bi gate way is to act as a bridge between the power bi service in the cloud and your on premises data source.

1. **How can you schedule data refresh in Power BI Service?**

* In home tab there is an option of refresh through that we can refresh in power bi service.

1. **Explain the concept of row-level security in Power BI.**

* Row-level security in Power BI allows you to control access to data at the individual row level.

1. **What is the Power BI Desktop and how does it differ from Power BI Service?**

* Power BI Desktop is a free application you install on your local computer that lets you connect to, transform, and visualize your data.

1. **Explain the concept of Direct Query in Power BI.**

* Data query is a data querying method in power bi that lets you connect to data source and display data without importing it.

1. **What are Power BI templates and how are they useful?**

* Power bi templates are pre designed report layouts that can be used to create reports and dashboards.
* Uses:

1. Save time
2. Ensuring consistency
3. Customizing reports
4. **How do you handle incremental data refresh in Power BI?**

* Handling incremental data refresh in power bi:
* Define parameters
* Modify the data source
* Create a custom query
* Set up incremental refresh

1. **What is the role of Power Query in Power BI?**

* the help of power query in power bi we can reshape our data easily.

1. **Explain the difference between calculated columns and calculated measures in Power BI.**

* Difference between calculated columns and calculated measure:

|  |  |
| --- | --- |
| Columns | Measures |
| Row-level (per individual record) | Aggregate-level (depends on the context of the report) |
| At data load or refresh | At query time (when interacting with the report) |
| Stored in the data model, takes up memory | Not stored, calculated on demand |
| Can be used as filters, slicers, or in visuals | Used for values in visuals (e.g., charts, KPIs) |

1. **How do you create custom visuals in Power BI?**

* Creating custom visual in power bi:
* Open power bi desktop
* Load our data set
* Explore the visualization pane for built in option
* Drop your data fields to create standard visuals
* Then go to visualisation pane and click the ‘three dots’
* Select ‘import from marketplace’
* Browse or search for custom visuals, then click add

1. **What are the best practices for optimizing performance in Power BI?**

* Avoid bi directional relationship
* Avoid calculated column
* Incremental refresh
* Use aggregated data
* Limit slicers value

1. **How can you integrate Power BI with other Microsoft products like Azure and Office 365?**

* Integrating power bi with azure:
* In power bi select ‘get data’>’azure’>’azure SQL database
* Enter your server and database credential

Integrating power bi with office 365:

* In power bi desktop, select get data>online services>share point online list
* Enter your share point in URL

1. **Explain the concept of aggregations in Power BI.**

* When you combine values in your data is called aggregating.

Aggregation in power bi is a process of mathematically combining values to produce an aggregate.

1. **How do you handle error handling and data quality in Power BI?**

* Error handling in power bi:
* Create a custom column to convert error into records
* Use if error function

Data quality in power bi

* Data quality reports help you to identify issues in your data and reporting.
* Data quality rules is used to ensure data is valid and high quality.

1. **What is the purpose of Power BI Embedded and when would you use it?**

* Power bi embedded is a service that allows you to embed power bi content like reports, dashboard, and tiles into a website or web application.

Uses of power bi embedded

* Embedding content
* Publishing to the web
* Ensuring data security
* Creating interactive visualization