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Assignment-2

1. What is the importance of data modeling in Power BI?

Ans: The data modeling in Power Bi helps in transforming raw data into meaningful insights. Various importance of data modeling are as follows:

- Organizes data into logical structures, making it easier to analyze.
- It reduces errors and ensures consistency.
- It optimizes performance by queries and reporting.
- It also leads to dashboards that users can navigate with ease.

2. Can you explain the difference between fact and dimension tables?

Ans: The difference between fact table and dimension table are as follows:

- Fact tables store quantitative data or metrics for analysis while dimension tables provide descriptive context to the facts.
- Dimension tables are typically smaller in size as compared to fact tables.
- Fact tables contain measurable data while dimension tables contain categorical data.

3. How do you create relationships between tables in Power BI?

Ans: Using the Manage Relationships Dialog we can create relationships between tables in Power BI. Steps are as follows:

- In the Modeling tab, click on Manage Relationships**.**
- Click New to create a new relationship.
- In the dialog box, select the tables and columns you wish to relate.
- Define the relationship's properties and click OK.

4. What are bi-directional filters, and when should they be used?

Ans:bi-directional filters in Power BI apply a filter to one table, it will also filter the related table, and vice versa.

It should be used in following cases:

- When two tables have multiple matching records then it helps ensure that filters apply correctly across both tables.

- If we have slicers that need to update each other based on user selections. For example, selecting a country in one slicer could filter the options in another slicer.

5. Why is it important to hide fields in the report view?

Ans:Hiding fields in the report view of Power BI is a best practice that enhances the clarity, performance, and security of your reports.

Some of importance are as follows:

- It improves report clarity.
- It enhances performance by reducing the number of fields loaded into the report view.
- It hides sensitive or confidential fields.

6. What are some best practices for organizing tables in a data model?

Ans: Some of the best practices for organizing tables in a data model are as follows:

- We can use star schema.
- We can use consistent naming conventions.
- We can remove unnecessary columns and tables.
- We can organize data to minimize redundancy.

7. Can you describe the concept of normalization in data modeling?

Ans: Normalization in Power BI means organizing our data into separate tables to reduce repetition and improve clarity.

- By storing each piece of information only once, we can avoid duplicating data across our model.
- A well-structured model can lead to faster report generation and better responsiveness.
- Organizing data into logical tables makes it easier for users to understand and navigate the model.

8. What is the purpose of creating hierarchies in a data model?

Ans: Creating hierarchies in a Power BI data model helps organize our data in a structured way, making it easier to analyze and understand.

Some of the purposes are as follows:

- Increases Report Interactivity.
- Simplifies Report Building.
- It helps in data navigation.

9. How do you ensure data integrity when designing a data model?

Ans: We can ensure data integrity by following ways:

- By establishing clear relationships.
- By normalizing data appropriately.
- By optimising data types and formats.
- We have to regularly audit the model.
- We should implement referential integrity to avoid data inconsistencies.

10. Why is it recommended to avoid complex relationships in a data model?

Ans: We have to avoid complex relationships in a data model because of following reasons:

- Complex relationships, such as many-to-many or bidirectional, can slow down report performance by increasing processing time and memory usage.
- Bidirectional filtering can lead to unexpected filtering behavior, causing incorrect aggregations and misleading insights.
- A complex relationship makes the model harder to maintain and update.