

DATA ANALYTICS - ASSIGNMENT

Day 1 to Day 3:

Assignment Question 1:

Title: Exploring the Foundations of Data Analytics

- a) Provide a comprehensive overview of data analytics, emphasizing its significance in contemporary contexts. Discuss the various types of data analytics and illustrate their applications in decision-making processes within organizations.
- b) Elaborate on the benefits of incorporating data analytics in business operations. Include specific examples to highlight how data analytics can contribute to improved efficiency, strategic decision-making, and competitive advantage.

Assignment Question 2:

Title: Statistical Techniques for Data Analysis

- a) Define and explain the concepts of estimation and hypothesis testing in the context of data analytics. Provide a step-by-step guide on how these statistical techniques are applied, citing real-world examples to illustrate their practical relevance.
- b) Explore the role of scatter diagrams in data analysis. Detail the process of constructing and interpreting scatter diagrams, and showcase their utility in identifying relationships between variables through a practical example.

Day 4 to Day 8:

Assignment Question 1:

Title: Fundamentals of Probability, Distributions, and Analytics Depth

- a) Define and explain the concepts of counting, probability, and probability distribution. Provide practical examples to illustrate how these concepts are applied in data analytics, and discuss their significance in making informed decisions.
- b) Take a deep dive into analytics by exploring the differences between descriptive, diagnostic, predictive, and prescriptive analytics. Highlight the unique characteristics and applications of each type, showcasing their roles in extracting value from data.

Assignment Question 2:

Title: Exploring Data Visualization, Measures, and Sampling Techniques

- a) Discuss the importance of data visualization in decision-making processes. Explore various data types and elaborate on how different visualizations contribute to effective communication of insights. Explain how data visualization enhances the understanding of complex information.
- b) Delve into measures of central tendency, dispersion, and graphical techniques. Explain the concepts of skewness, kurtosis, box plots, and advanced graphical representations. Provide examples to demonstrate how these descriptive statistics contribute to a comprehensive understanding of data patterns.

Day 10 to 12:

Assignment Question 1:

Title: Advanced Excel Functions for Data Presentation

- a) Explain the concept of conditional formatting in Excel. Provide step-by-step instructions on how to apply conditional formatting to highlight specific data conditions. Demonstrate the use of the "IF" function and discuss how it can be employed in conjunction with conditional formatting to dynamically alter cell values based on specified conditions.
- b) Dive into the realm of Pivot Tables and Charts in Excel. Guide students through the process of creating a Pivot Table, specifying data, changing calculations, and filtering/sorting the table. Additionally, demonstrate the creation of a Pivot Chart and explain the importance of grouping items within Pivot Tables for better data analysis.

Assignment Question 2:

Title: Advanced Data Presentation Techniques in Excel

- a) Explore the advanced features of updating and formatting Pivot Tables. Discuss the use of slicers to enhance interactivity in data analysis. Transition into the realm of charts by explaining how to create a simple chart, utilize graphical tools, and chart non-adjacent cells for more comprehensive visual representations.
- b) Provide a detailed walkthrough of using Excel's graphical tools for data visualization. Discuss the significance of creating charts and how they aid in conveying complex information effectively. Encourage students to experiment with different chart types and styles for optimal data presentation in Excel.

Day 13:

Assignment Question 1:

Title: Mastering Chart Creation and Modification in Excel

- a) Provide a step-by-step guide on creating a chart using the Chart Wizard in Excel. Explain the different chart types available and discuss when each type is most appropriate for visualizing specific types of data.
- b) Explore the various ways to modify charts in Excel, including moving and sizing embedded charts. Discuss the significance of these modifications in enhancing the visual representation of data and ensuring effective communication of insights.

Assignment Question 2:

Title: Chart Customization and Type Selection

- a) Delve into the nuances of chart customization by explaining how to change the chart type in Excel. Highlight the importance of selecting an appropriate chart type based on the nature of the data and the message to be conveyed. Provide examples to illustrate scenarios where specific chart types are more suitable than others.
- b) Discuss the significance of understanding different chart types available in Excel. Explain how the choice of a particular chart type can impact the interpretation of data and the clarity of communication. Encourage students to experiment with changing chart types to optimize data visualization.

Day 14:

Assignment Question 1:

Title: Advanced Chart Formatting Techniques in Data Analytics

- a) Explain the significance of changing the way data is displayed in charts. Provide examples of scenarios where adjusting the display enhances the clarity of information. Discuss the process of moving the legend within a chart and its impact on the overall visual representation of data.
- b) Dive into the intricacies of formatting charts in Excel. Discuss how formatting options contribute to the aesthetics and effectiveness of a chart. Explore the addition of chart items and the formatting of all text within a chart. Provide practical insights into how these formatting techniques can be applied for better data visualization.

Assignment Question 2:

Title: Precision in Chart Presentation: Formatting and Alignment

- a) Explore the importance of formatting and aligning numbers in the context of chart presentation. Discuss how the appropriate formatting of numerical data contributes to the accuracy and readability of charts. Provide step-by-step guidance on formatting and aligning numbers in Excel charts.
- b) Discuss the broader concept of formatting all text within a chart. Explain how consistent formatting of text elements enhances the overall professionalism and coherence of the chart. Encourage students to consider the visual impact of text formatting choices in their data analytics presentations

Day 15:

Assignment Question 1:

Title: Mastering Pie Charts in Data Visualization

- a) Explain the significance of formatting the plot area and data markers in the context of data analytics. Provide examples of scenarios where specific formatting choices enhance the visual representation of data. Discuss how well-formatted plot areas and data markers contribute to the overall effectiveness of charts.
- b) Guide students through the creation of a PIE chart in Excel, emphasizing the steps involved and the considerations for choosing a PIE chart as a visualization method. Discuss the advantages and limitations of using PIE charts and provide practical insights into moving a PIE chart to its own sheet for clearer presentation.

Assignment Question 2:

Title: Precision in PIE: Formatting and Presentation

- a) Delve into the details of formatting data markers in a PIE chart. Discuss the different formatting options available and their impact on the interpretation of data. Provide practical tips on how to make data markers more visually appealing and informative.
- b) Explore the concept of moving a PIE chart to its own sheet. Discuss the reasons behind isolating a PIE chart and how it contributes to a more organized and focused presentation. Encourage students to consider the overall layout and structure of data visualizations for effective communication.

Day 16:

Assignment Question 1:

Title: Enhancing PIE Charts and Understanding Data Analysis

- a) Discuss the importance of adding data labels to a PIE chart in data analytics. Explain how data labels contribute to better comprehension and interpretation of the chart. Provide practical examples of situations where data labels are particularly useful.
- b) Explore the concept of exploding a slice of a PIE chart. Explain when and why exploding a slice can be beneficial for highlighting specific data points. Provide step-by-step instructions on how to explode a slice in Excel and discuss potential use cases.

Assignment Question 2:

Title: Navigating the Data Analysis Process

- a) Provide an overview of data analysis and its significance in decision-making. Discuss the key steps involved in the data analysis process, highlighting the importance of each stage. Illustrate with examples to showcase how the data analysis process contributes to extracting meaningful insights from data.
- b) Examine the role of range names in data analytics. Explain the concept of range names and how they can streamline data analysis tasks. Provide practical examples of using range names in Excel and discuss their advantages in simplifying complex data sets.

Day 17:

Assignment Question 1:

Title: Mastering Range Names in Excel

- a) Explain the process of copying names using Formula AutoComplete in Excel. Discuss the benefits of utilizing this feature in data analytics and how it contributes to efficiency in formula creation. Provide practical examples to illustrate scenarios where Formula AutoComplete is particularly advantageous.
- b) Dive into the syntax rules for creating range names. Discuss the key considerations and restrictions when naming ranges in Excel. Provide clear guidelines on how to adhere to these syntax rules to ensure accurate and error-free range names.

Assignment Question 2:

Title: Creating and Managing Range Names

- a) Guide students through the process of creating range names in Excel. Discuss the steps involved, including selecting cells, defining names, and setting the scope. Provide examples to demonstrate how creating range names can enhance data organization and simplify formula creation.
- b) Explore the concept of managing names in Excel. Discuss the importance of efficiently managing and organizing range names, especially in complex datasets. Explain the potential challenges and benefits associated with managing names and provide practical tips on effective management.

Day 18:

Assignment Question 1:

Title: Leveraging Named Ranges for Formulas in Excel

- a) Explain the process of applying names to cells or ranges in Excel and discuss the advantages of using named ranges in data analytics. Provide examples to illustrate how applying names simplifies formula creation and management in complex datasets.
- b) Explore the integration of names into formulas in Excel. Discuss the syntax for using names in formulas and how this approach enhances formula readability and clarity. Provide practical examples to demonstrate the application of names in various types of formulas.

Assignment Question 2:

Title: Understanding Tables and Ranges in Excel

- a) Compare and contrast tables and ranges in Excel. Explain the key differences between the two and discuss the scenarios in which each is most appropriate for organizing and analyzing data. Provide examples to illustrate how tables and ranges serve distinct purposes in data analytics.
- b) Guide students through the process of viewing names in a workbook. Discuss the benefits of being able to view and manage names within a workbook and provide practical insights into how this feature aids in effective data organization and analysis.

Day 19:

Assignment Question 1:

Title: Excel Tables and Table Management

- a) Demonstrate the process of creating a table in Excel. Outline the steps involved and discuss the advantages of using tables in data analytics. Explain how tables streamline data management and analysis.
- b) Explore the concept of managing names within a table. Discuss the significance of table names and how they contribute to data organization. Provide examples of scenarios where managing names within a table becomes particularly useful.

Assignment Question 2:

Title: Advanced Table Operations in Excel

- a) Discuss the unique feature of table headers replacing column letters in Excel tables. Explain how this feature enhances the clarity and readability of data within a table. Provide practical examples to illustrate the benefits of using table headers.
- b) Guide students through the process of propagating a formula in an Excel table. Explain how formulas can be efficiently applied and propagated within a table to streamline data analysis. Discuss the advantages of using formulas within tables for dynamic data updates.

Day 20:

Assignment Question 1:

Title: Excel Table Management and Styles

- a) Explain the process of converting a table to a range in Excel. Discuss the scenarios in which converting a table to a range may be necessary for specific data analysis tasks. Provide step-by-step instructions on how to execute this operation.
- b) Dive into table styles and options in Excel. Discuss the significance of table styles and the various style options available. Encourage students to explore and apply different table styles to enhance the visual presentation of data in their analysis.

Assignment Question 2:

Title: Data Cleaning with TEXT Functions in Excel

- a) Explore the use of TEXT functions in Excel for data cleaning. Discuss the role of TEXT functions in transforming and formatting text data. Provide practical examples of how TEXT functions can be employed to clean and standardize data.
- b) Focus on the removal of unwanted characters from text using Excel functions. Explain the importance of cleaning data from unwanted characters and symbols for accurate analysis. Walk students through the process of using TEXT functions to achieve this data cleaning objective.

Day 21:

Assignment Question 1:

Title: Text Functions and Data Formatting in Excel

a) Explain the process of extracting data values from text in Excel. Discuss the significance of using text functions for this purpose and provide examples of scenarios where extracting data from text is essential for effective data analysis.

b) Dive into the realm of formatting data with text functions in Excel. Discuss specific text functions that aid in data formatting and how they contribute to presenting data in a more readable and standardized format. Provide practical examples to illustrate the application of text functions in data formatting.

Assignment Question 2:

Title: Advanced Data Manipulation and Analysis Techniques

a) Explore the concept of data formats in Excel. Discuss the importance of understanding and managing data formats for accurate analysis. Provide examples of common data formats and explain how they impact data interpretation.

b) Guide students through the application of conditional formatting, sorting, filtering, lookup functions, and pivoting in Excel. Discuss the role of each technique in data analysis and encourage students to practice using these tools to extract meaningful insights from data.

Day 22:

Assignment Question 1:

Title: Understanding the Basics of Macros in Excel

a) Provide an introductory overview of the concept of macros in Excel. Explain what macros are and how they can be employed in data analytics. Discuss the potential benefits of using macros for automating repetitive tasks and streamlining data analysis processes.

b) Walk students through the process of recording macros with absolute reference in Excel. Explain the steps involved in recording a macro with absolute reference and discuss scenarios where this type of reference is advantageous. Encourage students to practice recording simple macros with absolute reference.

Assignment Question 2:

Title: Mastering Macros with Relative Reference in Excel

a) Explore the concept of recorded macros with relative reference. Discuss the differences between absolute and relative references and explain when it is appropriate to use each type. Provide practical examples to illustrate how macros with relative reference can enhance flexibility in data analysis tasks.

b) Guide students through the steps of recording macros with relative reference in Excel. Encourage them to experiment with different tasks and scenarios to understand how relative reference can be applied to create more dynamic and adaptable macros.

Day 23:

Assignment Question 1:

Title: SQL Basics and Data Retrieval

a) Provide an introduction to the concept of an SQL database. Explain the fundamental components and structure of an SQL database and how it is used in data analytics. Discuss the importance of SQL as a query language for interacting with databases.

b) In the context of SQL, focus on the retrieval of data using the SELECT statement. Walk students through the syntax of the SELECT statement and discuss its role in extracting data from a database. Encourage students to practice constructing basic SELECT statements to retrieve specific data sets.

Assignment Question 2:

Title: Refining SQL Queries with Data Restriction and Sorting

a) Delve into the techniques of restricting and sorting data in SQL. Discuss the significance of adding conditions to queries for more precise data retrieval and the role of sorting in organizing query results. Provide practical examples to illustrate how data restriction and sorting contribute to effective data analysis.

b) Explore the usage of single-row functions in SQL to customize query output. Introduce common single-row functions and explain how they can be applied to manipulate and format data within SQL queries. Encourage students to practice incorporating single-row functions to customize query results.

Day 24:

Assignment Question 1:

Title: Exploring Data Warehousing in SQL Analytics

- a) Define the concept of data warehousing in the context of SQL analytics. Discuss the purpose and benefits of data warehousing in supporting analytical processes. Explain how data warehouses differ from traditional databases and their role in consolidating and managing large volumes of data for analysis.
- b) Provide examples of scenarios where data warehousing is particularly advantageous in SQL analytics. Discuss how a well-designed data warehouse architecture can enhance the efficiency and effectiveness of data analytics processes. Encourage students to explore the potential impact of data warehousing on decision-making and reporting.

Assignment Question 2:

Title: SQL Analytics and Data Warehousing Practices

- a) Walk students through the SQL analytics practices commonly employed in a data warehouse environment. Discuss the SQL techniques and queries used for analyzing data within a data warehouse, including complex queries, aggregations, and joins.
- b) Explore the role of SQL analytics in extracting meaningful insights from a data warehouse. Discuss how SQL queries can be tailored to answer specific business questions and support decision-making processes. Encourage students to practice writing SQL queries that leverage the capabilities of data warehousing for analytical purposes.

Day 25:

Assignment Question 1:

Title: Understanding SQL Commands and Table Management

a) Define and explain the meanings of DDL, DQL, DML, DCL, and TCL commands in SQL. Discuss the specific functions and roles of each type of command in the context of database management and data analytics.

b) Focus on the use of DDL statements to create and manage tables. Provide step-by-step instructions on how DDL statements are used to define table structures and constraints. Encourage students to practice creating tables with various attributes and constraints using DDL commands.

Assignment Question 2:

Title: SQL Commands in Action: DDL and DML Integration

a) Explore the relationship between DDL and DML commands in SQL. Discuss scenarios where DDL and DML commands are used together to create, modify, and manage data in tables. Provide practical examples to illustrate how these commands work in tandem.

b) Dive into the realm of DQL with a focus on select queries. Guide students through the construction of DQL select queries to retrieve specific data sets from tables. Encourage them to practice writing efficient and effective select queries to meet various data retrieval needs.

Day 26:

Assignment Question 1:

Title: Mastering Sub-Queries and Table Joins in SQL

- a) Explore the concept of sub-queries in SQL and their role in solving complex queries. Discuss the scenarios where sub-queries are particularly useful for retrieving specific subsets of data. Encourage students to practice writing SQL queries that leverage sub-queries to achieve desired results.
- b) Delve into the technique of joining tables in SQL and its significance in data analytics. Discuss the types of table joins (e.g., INNER JOIN, LEFT JOIN) and scenarios where each type is applicable. Provide practical examples for students to practice constructing SQL queries with table joins.

Assignment Question 2:

Title: SQL vs. NoSQL - Analyzing the Differences

- a) Define SQL and NoSQL databases and discuss their fundamental differences. Explore the structure, data model, and use cases of each type of database. Discuss scenarios where SQL databases are preferable and situations where NoSQL databases excel in data management and analytics.
- b) Encourage students to critically evaluate and compare SQL and NoSQL databases. Discuss the advantages and disadvantages of each type and when it is appropriate to choose one over the other in a data analytics context. Prompt students to consider specific business requirements that may influence their database choice.

Day 27:

Assignment Question 1:

Title: Harnessing Conversion Functions and Conditional Expressions in SQL

- a) Explore the concept of conversion functions in SQL and discuss their role in transforming data types. Provide examples of scenarios where conversion functions are essential for data preparation and analysis. Encourage students to practice using conversion functions in SQL queries.
- b) Delve into the application of conditional expressions in SQL. Discuss how conditional expressions, such as CASE statements, can be used to customize query output based on specified conditions. Provide practical examples for students to practice incorporating conditional expressions in SQL queries.

Assignment Question 2:

Title: Mastering Group Functions and Joins for Data Analysis

- a) Discuss the use of group functions in SQL for aggregating data. Explore functions like COUNT, SUM, AVG, etc., and their application in analyzing data sets. Encourage students to practice writing SQL queries that leverage group functions to derive meaningful insights from aggregated data.
- b) Guide students through the process of displaying data from multiple tables using joins in SQL. Discuss the types of joins, such as INNER JOIN and LEFT JOIN, and provide practical examples to illustrate how joins facilitate the retrieval of data from related tables. Encourage students to practice constructing SQL queries with multiple table joins.

Day 28:

Assignment Question 1:

Title: Exploring SCHEMA Objects and User Access Control in SQL

- a) Define and discuss the various SCHEMA objects in SQL beyond tables, such as views, indexes, and sequences. Explain their roles in database management and data analytics. Encourage students to explore scenarios where different SCHEMA objects are utilized for specific purposes.
- b) Delve into the management of SCHEMA objects and the control of user access in SQL. Discuss the significance of controlling user access to SCHEMA objects for security and data integrity. Provide practical examples and scenarios for students to practice implementing user access controls for various SCHEMA objects.

Assignment Question 2:

Title: Utilizing Data Dictionary Views for Object Management in SQL

- a) Explain the concept of data dictionary views in SQL and how they are used for managing database objects. Discuss common data dictionary views that provide information about SCHEMA objects, such as ALL_TABLES, ALL_VIEWS, or ALL_INDEXES. Encourage students to explore and query these views to obtain metadata information.
- b) Guide students through the practical application of data dictionary views for managing SCHEMA objects. Discuss how data dictionary views can be used to retrieve information about objects, their structures, and dependencies. Encourage students to practice querying data dictionary views to gather insights about the database schema.

Day 29:

Assignment Question 1:

Title: Advanced Data Retrieval and Regular Expressions in SQL

- a) Discuss the concept of sub-queries in SQL and their role in data retrieval. Encourage students to practice constructing SQL queries that involve sub-queries to retrieve specific subsets of data. Provide examples to illustrate how sub-queries can be effectively used in different scenarios.
- b) Explore the topic of regular expression support in SQL. Discuss the significance of regular expressions in pattern matching and data manipulation. Encourage students to practice using regular expressions in SQL queries for tasks such as data validation and extraction.

Assignment Question 2:

Title: SQL Commands and Datatypes Mastery

- a) Provide an overview of the fundamental SQL commands, including DDL, DML, DQL, DCL, and TCL. Discuss the specific functions and use cases of each command type in the context of database management and data analytics.
- b) Dive into the concept of SQL datatypes, covering commonly used datatypes such as int, float, Char, Varchar, date, date & time, and UTC. Discuss the characteristics and scenarios where each datatype is appropriate. Encourage students to practice defining and working with these datatypes in SQL queries.

Day 30:

Assignment Question 1:

Title: Efficient Data Manipulation and Time Zone Considerations in SQL

- a) Discuss techniques for efficiently manipulating large datasets in SQL. Explore strategies for optimizing queries, indexing, and other methods to handle substantial volumes of data. Encourage students to practice writing SQL queries that are well-suited for handling large datasets.
- b) Delve into the challenges and considerations of managing data in different time zones within a database. Discuss the role of time zone conversions, and the importance of handling timestamps and datetime data accurately in diverse global contexts. Encourage students to explore scenarios where managing time zones becomes crucial in data analytics.

Assignment Question 2:

Title: Mastering Database Constraints and Integrity

- a) Define and explain the concept of database constraints, covering domain, key, referential integrity constraints, primary key, and foreign key. Discuss how these constraints contribute to maintaining data accuracy, consistency, and integrity within a database.
- b) Provide practical examples for students to practice implementing and managing database constraints in SQL. Encourage them to create tables with appropriate constraints and explore scenarios where constraints play a critical role in ensuring the reliability of data stored in a database.

DAY - 31:

1) Index - B.Tree

Explain the concept of a B-Tree index.

2) Hash Index

What is a Hash Index, and how does it differ from a B-Tree index?:

3) Unique Index

Explain the concept of a Unique Index in a database.

DAY - 32:

1) Explain how conditional statements (If, Elseif, Else) are used in a stored procedure.

2) How are loops and exception handling implemented in a stored procedure?

3) How is a cursor handled in a stored procedure, and what are the advantages of using stored procedures?

DAY - 33:

1) Explain the concepts of User Defined Functions and Triggers in a database.

2. Row Level and Group Level Triggers

Differentiate between Row Level and Group Level triggers in a database.

3. Types of Triggers vs. Stored Procedures

Compare and contrast the types of triggers with stored procedures in a database.

DAY - 34

1) How can SQL be integrated with Power BI, and what are the benefits of this integration?

2. Subqueries Introduction

What is a subquery in SQL, and how does it differ from a regular query?

DAY - 35:

1. Start Page, Licensing, Installation

Describe the elements and significance of the "Start Page" in Power BI. How does licensing work for Power BI, and what are the key steps involved in the installation process?

2. Show Me, Connecting to Excel Files, Connecting to Text Files

Explain the "Show Me" feature in Power BI. How can Power BI connect to Excel files and text files?

DAY - 36:

1. Connecting to Microsoft Analysis Services

How can Power BI connect to Microsoft Analysis Services, and what are the advantages of utilizing Analysis Services as a data source?

2. Creating and Removing Hierarchies

Explain the process of creating and removing hierarchies in Power BI, and why are hierarchies useful in data visualization?

DAY - 37:

1. Types of Data (Structured, Unstructured, Semi-Structured)

Differentiate between structured, unstructured, and semi-structured data, providing examples for each type.

2. Visualization Properties

3. Visualization Tools

Discuss different types of visualization tools available for data analysis and their key features.

DAY - 38:

1. Parameters

What are parameters in Power BI, and how are they used in the data analysis process?

2. Grouping Example 1 & 2, Edit Groups

Explain the concepts of grouping in Power BI with two examples, and how can groups be edited?

3. Set, Combined Sets

What are sets in Power BI, and how can sets be combined to enhance data analysis?

DAY - 39:

1. Data Labels, Create Folders, Sorting Data

Explain the concepts of data labels, creating folders, and sorting data in Power BI, and how do they contribute to the effectiveness of a report?

2. Add Totals, Subtotals, Grand Totals to Report Data Pane, Measures & Dimensions, Data Source Window Operations

Describe the process of adding totals, subtotals, and grand totals to the report Data pane in Power BI. Explain the concepts of measures, dimensions, and data source window operations.

DAY - 40:

1)Your task is to create a dashboard showcasing different types of Tableau charts for a sales analysis. Choose three specific chart types from the provided list (e.g., Bar Chart, Bubble Chart, Funnel Chart) and explain how you would use them to convey different aspects of sales data.

2)For a comprehensive analysis of customer satisfaction scores, choose two advanced Tableau charts from the list (e.g., Dual Combination Charts, Dual Lines Chart) and explain how you would use them to present insights on customer satisfaction trends.

3)You are tasked with visualizing employee performance data, including individual achievements and rankings. Choose two specialized Tableau charts from the list (e.g., Area Chart, Box Plot) and describe how you would use them to represent this information.

DAY - 41:

1)You are tasked with visualizing the sales pipeline for a retail business. Choose a traditional funnel chart and a Gantt chart from the list, and explain how you would use them to represent different aspects of the sales pipeline.

2)For analyzing product performance across different regions and categories, choose a Grouped Bar/Side-by-Side Bars Chart and a Heatmap from the list. Explain how you would use these charts to present insights.

3)You have a dataset containing customer satisfaction scores. Choose a Histogram and a Pareto Chart from the list, and describe how you would use them to analyze and present customer satisfaction trends.

DAY - 42:

1)You have been given a dataset containing sales and profit data for different product categories. Choose three visualizations from the list (e.g., Pie Chart, Scatter Plot, Treemap) and explain how you would use them to analyze and present insights.

2)You are tasked with presenting customer feedback data in a visually engaging way. Choose two innovative visualizations from the list (e.g., Word Cloud, Waterfall Chart) and describe how you would use them to convey customer sentiments.

3) For a comprehensive analysis of sales and performance over time, choose three advanced visualizations from the list (e.g., Multi-Vari Chart, Time Series Charts, Advanced Charts) and explain how you would use them to provide detailed insights.

DAY - 43:

1) You are analyzing monthly sales and profit data. Choose two advanced reporting techniques (e.g., Dual Axis, Reference Lines) and explain how you would use them to provide a comprehensive overview of the performance trends.

2) For a dataset containing geographical information, choose three advanced mapping techniques (e.g., Symbol Map, Google Maps, Reference Bands) and explain how you would use them to visualize and analyze location-based data.

3) Your dataset includes information from a Web Map Service (WMS) server. Choose two advanced mapping techniques (e.g., WMS Server Map, Blended Axis) and describe how you would integrate them to enhance the visualization of spatial data.

DAY - 44:

1) You have a dataset with sales information. Choose two calculated fields (e.g., Running Total, Rank) and explain how you would create and use them. Additionally, describe the application of basic filters.

2) For a comprehensive analysis of customer behavior, choose two advanced filters (e.g., Top & Bottom Filters, Context Filters) and describe their application. Additionally, explain the use of conditional filters.

3) Your dataset includes both dimension and measure fields. Choose two filter techniques (e.g., Filters on Dimensions, Extract Filters) and describe how you would apply them. Additionally, explain the purpose of data source filters.

DAY - 45:

- 1) You are tasked with creating a dashboard to visualize sales performance. Describe the step-by-step process of creating and formatting the dashboard, including the addition of key elements such as charts, text, and images.**
- 2) For a sales dashboard, explain how you would create filters to enhance interactivity. Provide examples of filter types and their applications.**
- 3) You are tasked with creating a storytelling dashboard to present sales achievements over the past year. Explain how you would structure the dashboard as a story and the key elements you would include.**

DAY - 46:

- 1) Explain the key differences between Tableau Server and Tableau Online. Provide an overview of their respective functionalities and use cases.**
- 2) Provide a comprehensive overview of Tableau Server, covering its key components, architecture, and the benefits it offers to organizations.**
- 3) Explain the process of publishing Tableau objects to Tableau Server. Additionally, describe how scheduling and subscriptions enhance the efficiency of content distribution.**

DAY - 47:

- 1) Explain the core concepts of Power BI, including the difference between Power BI and Power BI Pro. Additionally, provide step-by-step instructions on how to install Power BI Desktop.**
- 2) Explain the process of connecting to a Software as a Service (SaaS) solution in Microsoft Power BI. Additionally, outline the steps to connect to Excel data that can be refreshed.**
- 3) Demonstrate how to upload a local CSV file into Power BI Desktop and explain the advantages of using Power BI for CSV data compared to traditional spreadsheet applications.**

DAY - 48:

- 1) Connect to a sample dataset using Power BI Desktop. Explain the process of importing data from a sample source and choosing relevant tables for analysis.**
- 2) Use the imported sample data to create a comprehensive report with visualizations. Include at least three different types of visualizations, and explain the insights each visualization provides.**
- 3) Explore the Power BI portal and describe the key features and functionalities available. How can users collaborate, share, and manage reports on the Power BI portal?**

DAY - 49:

- 1) Provide an overview of different types of visualizations available in Power BI. Explain the significance of selecting the right visualization type based on the nature of the data.**
- 2) Demonstrate the process of using existing visualizations in Power BI Desktop and creating a new report with visualizations. Include steps for adding data, selecting visualizations, and configuring properties.**
- 3) Explain the importance of formatting visualizations for better presentation. Provide examples of formatting options available in Power BI and how they contribute to the overall aesthetics of the report.**

DAY - 50:

- 1) Create a Power BI report with diverse chart visualizations, including text, maps, and gauge visualizations. Explain the steps involved in adding each type of visualization and how they contribute to the overall data representation.**
- 2) Demonstrate the use of slicers to filter visualizations, sorting options, and copying and pasting visualizations within a report. Provide examples of scenarios where each action is beneficial.**
- 3) Explore the custom visuals gallery, download a custom visual, and incorporate it into a Power BI report. Explain the steps involved and the advantages of using custom visuals.**



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DAY - 51:

- 1) You are tasked with modifying an existing report in Power BI. The report contains various visuals and data representations. Describe the steps you would take to modify a specific visual, add a new visual, and finally, print the modified report.
- 2) You have a Power BI report with multiple pages, and you need to reorganize and manage these pages. Explain how you would rename a report page, delete an unnecessary page, and set up a filter on a specific page.
- 3) Your manager has asked you to create a dashboard in Power BI that consolidates key visuals from different reports. Outline the steps you would take to create a new dashboard, add visuals to it, and manage the created dashboard.

DAY - 52:

- 1) Using the Power BI REST API, write code to pin a live report page named "Sales Page" to a Power BI dashboard called "Sales Dashboard." Include necessary authentication steps in your code.
- 2) Write Power Shell code to pin a tile named "Revenue Tile" from the "Financial Dashboard" to a new dashboard called "Executive Dashboard" and then list all pinned elements on the new dashboard.
- 3) Using the Power BI JavaScript API, create a new dashboard named "Insights Dashboard" with Quick Insights from a data set named "Sales Data set." Add at least two Quick Insights visualizations to the dashboard.

DAY - 53:

You have created an insightful workbook in Excel and want to share specific data with colleagues securely. Describe the steps you would take to publish the workbook to Power BI and share it with selected colleagues.

You want to showcase a report to a broader audience and decide to publish it to the web. Outline the steps to publish a Power BI report to the web and provide the embed code for sharing.

3) You have created a comprehensive dashboard and want to collaborate with a team by sharing it. Explain the process of sharing a Power BI dashboard with colleagues and managing their access.

DAY - 54:

1) Create an app workspace in Power BI for a marketing team. Add a report and dashboard highlighting key performance metrics. Share the workspace with team members and set appropriate permissions.

2) Publish an app from the app workspace created in Assignment 1. Include the marketing report and dashboard in the app. Provide detailed steps to publish the app.

3) Embed a specific tile from the marketing dashboard in SharePoint Online for wider visibility. Additionally, create a QR code to share this tile externally.

DAY - 55:

1) You are part of a team that relies on Power BI for data analysis. Explain the steps to get Power BI for mobile on your iPad and demonstrate how to view reports and dashboards within the iPad app.

2) Your team uses work spaces extensively, and you need to guide them on using work spaces in the Power BI mobile app. Outline the steps to access and utilize work spaces within the Power BI mobile app.

3) You want to share a critical insight with your team using Power BI Mobile. Explain how to share content directly from the Power BI Mobile app, and highlight any considerations for sharing.

DAY - 56:

- 1) You have a dataset in a CSV file and need to import and transform the data for a Power BI report. Outline the steps to get the data, reduce unnecessary information, and transform it using Power BI Desktop.**
- 2) You are working with multiple tables in Power BI that need to be related. Describe the process of establishing relationships between tables to create a coherent dataset.**
- 3) After creating a report in Power BI Desktop, you want to collaborate with others using the Power BI Service. Describe the steps to upload the report to the Power BI Service and export it back to Power BI Desktop.**

DAY - 57:

- 1) You have a dataset containing sales data, and you need to calculate the total sales for the current year. Describe the steps to create a new DAX measure using Date & Time functions.**
- 2) You want to analyze the year-over-year growth in sales. Explain how to create a DAX measure that calculates the percentage change in sales compared to the previous year.**
- 3) In your dataset, you have a column with product names, and you want to create a new column that extracts the first three characters of each product name. Explain how to use DAX Text Functions for this purpose.**

DAY - 58:

- 1) You are tasked with integrating Power BI SaaS with a SQL Server database. Outline the steps to establish a connection and fetch data from a specific table in the SQL Server database.**
- 2) You have created a preliminary dashboard, and now you need to finalize it for presentation. Describe the steps you would take to enhance the dashboard, including formatting, adding visuals, and improving overall user experience.**
- 3) To convey a narrative through data, you decide to create a story in Power BI. Explain the steps involved in creating a compelling data story, including selecting key insights and arranging them coherently.**

DAY - 59:

1) You have been tasked with organizing a rendezvous event featuring guest speakers who are CEOs of top FMCG companies in Saudi Arabia. Outline the key steps and considerations in planning and executing a successful event.

2) As part of the rendezvous, you are organizing a CEO panel discussion. Describe the key topics and questions you would include to facilitate an insightful and engaging conversation among the CEOs.

3) After the rendezvous event, reflect on the outcomes and impact. Describe the methods you would use to assess the success of the event and gather feedback.