**Learners have to come up with a Report to support the answers to the following questions and suggestions**

**Objective Questions:**

1. What is the distribution of account balances across different regions?
2. Identify the top 5 customers with the highest Estimated Salary in the last quarter of the year. (SQL)
3. Calculate the average number of products used by customers who have a credit card. (SQL)
4. Determine the churn rate by gender for the most recent year in the dataset.
5. Compare the average credit score of customers who have exited and those who remain. (SQL)
6. Which gender has a higher average estimated salary, and how does it relate to the number of active accounts? (SQL)
7. Segment the customers based on their credit score and identify the segment with the highest exit rate. (SQL)
8. Find out which geographic region has the highest number of active customers with a tenure greater than 5 years. (SQL)
9. What is the impact of having a credit card on customer churn, based on the available data?
10. For customers who have exited, what is the most common number of products they have used?
11. Examine the trend of customers joining over time and identify any seasonal patterns (yearly or monthly). Prepare the data through SQL and then visualize it.
12. Analyze the relationship between the number of products and the account balance for customers who have exited.
13. Identify any potential outliers in terms of balance among customers who have remained with the bank.
14. How many different tables are given in the dataset, out of these tables which table only consists of categorical variables?
15. Using SQL, write a query to find out the gender-wise average income of males and females in each geography id. Also, rank the gender according to the average value. (SQL)
16. Using SQL, write a query to find out the average tenure of the people who have exited in each age bracket (18-30, 30-50, 50+).
17. Is there any direct correlation between salary and the balance of the customers? And is it different for people who have exited or not?
18. Is there any correlation between the salary and the Credit score of customers?
19. Rank each bucket of credit score as per the number of customers who have churned the bank.
20. According to the age buckets find the number of customers who have a credit card. Also retrieve those buckets that have lesser than average number of credit cards per bucket.
21. Rank the Locations as per the number of people who have churned the bank and average balance of the customers.
22. As we can see that the “CustomerInfo” table has the CustomerID and Surname, now if we have to join it with a table where the primary key is also a combination of CustomerID and Surname, come up with a column where the format is “CustomerID\_Surname”.
23. Without using “Join”, can we get the “ExitCategory” from ExitCustomers table to Bank\_Churn table? If yes do this using SQL.
24. Were there any missing values in the data, using which tool did you replace them and what are the ways to handle them?
25. Write the query to get the customer IDs, their last name, and whether they are active or not for the customers whose surname ends with “on”.
26. Can you observe any data disrupency in the Customer’s data? As a hint it’s present in the IsActiveMember and Exited columns. One more point to consider is that the data in the Exited Column is absolutely correct and accurate.

**Subjective Question:**

1. Customer Behavior Analysis: What patterns can be observed in the spending habits of long-term customers compared to new customers, and what might these patterns suggest about customer loyalty?
2. Product Affinity Study: Which bank products or services are most commonly used together, and how might this influence cross-selling strategies?
3. Geographic Market Trends: How do economic indicators in different geographic regions correlate with the number of active accounts and customer churn rates?
4. Risk Management Assessment: Based on customer profiles, which demographic segments appear to pose the highest financial risk to the bank, and why?
5. Customer Tenure Value Forecast: How would you use the available data to model and predict the lifetime (tenure) value in the bank of different customer segments?
6. Marketing Campaign Effectiveness: How could you assess the impact of marketing campaigns on customer retention and acquisition within the dataset? What extra information would you need to solve this?
7. Customer Exit Reasons Exploration: Can you identify common characteristics or trends among customers who have exited that could explain their reasons for leaving?
8. Are 'Tenure', 'NumOfProducts', 'IsActiveMember', and 'EstimatedSalary' important for predicting if a customer will leave the bank?
9. Utilize SQL queries to segment customers based on demographics and account details.
10. How can we create a conditional formatting setup to visually highlight customers at risk of churn and to evaluate the impact of credit card rewards on customer retention?
11. What is the current churn rate per year and overall as well in the bank? Can you suggest some insights to the bank about which kind of customers are more likely to churn and what different strategies can be used to decrease the churn rate?
12. Create a dashboard incorporating all the KPIs and visualization-related metrics. Use a slicer in order to assist in selection in the dashboard.
13. How would you approach this problem, if the objective and subjective questions weren't given?
14. In the “Bank\_Churn” table how can you modify the name of the “HasCrCard” column to “Has\_creditcard”?