**Task 1**

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| Using the provided dataset, create a BI report that enables strategic decision-making through the following analyses:     1. **Producer Performance Dashboard:**  * Develop a comprehensive view of each producer's performance, including Total Revenue, Average Yearly Growth Rate, and Risk Factor for accounts.  1. **Segmentation and Filtering:**  * Implement multi-level filtering to examine data by different categories like Producer, Market Segment, and Risk Factor. Ensure drill-down capability from summary to detailed views.  1. **Revenue-Employee Relationship:**  * Visualize the correlation between Annual Revenue and the Number of Employees per account, segmented by Risk Factor and Market Segment.  1. **Contract Renewal Forecast:**  * Create a model to forecast contract renewals, considering factors like Account Lifetime Value and Yearly Growth Rate.  1. **Producer Efficiency Index:**  * Calculate and rank an efficiency index for producers based on Total Revenue versus the Number of Accounts managed.  1. **Strategic Account Planning:**  * Identify key accounts with high Lifetime Value but low Growth Rate and suggest strategies for revenue optimization. |

**Steps you have to perform**

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| The steps that candidates can follow to create solutions for the BI report questions based on the dataset:   1. **Comprehensive Producer Dashboard:**  * Load the dataset into the BI tool. * Use the 'Primary Producer' field to create individual profiles. * Aggregate 'Annual Revenue' by producer for total revenue. * Calculate the average 'Yearly Growth Rate' per producer. * Create a distribution chart of 'Risk Factor' for each producer's accounts.  1. **Interactive Segmentation Analysis:**  * Create slicers or filters for each of the specified fields. * Set up drill-down capabilities in visuals to go from aggregated data to detailed views. * Use visuals like pie charts, bar graphs, and tree maps to represent segmentations.  1. **Revenue and Employee Dynamics:**  * Create a scatter plot with 'Annual Revenue' and 'Number of Employees in Account' as axes. * Use 'Risk Factor' and 'Market Segment' as legends or filters to segment the data.  1. **Growth Rate Impact Assessment:**  * Use a correlation matrix to analyse the relationship between 'Yearly Growth Rate' and 'Account Lifetime Value'. * Create a regression analysis model if supported by the BI tool.  1. **Producer Efficiency Index:**  * Define a formula for the efficiency index considering the 'Total Revenue' and 'Number of Accounts'. * Rank producers based on this index and visualize using a sorted bar chart.  1. **Strategic Account Planning:**  * Identify key accounts using a combination of high 'Account Lifetime Value' and low 'Yearly Growth Rate'. * Suggest strategies through annotations or an accompanying text box that details the action plan. |

**Task 2**

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| The dataset containing UMR, Binder, Year of Account (YOA), Dates (Months), Premium, Earned, Total Claims, Quarter, Year-To-Date (YTD) Premium, YTD Earned, YTD Total Claims, and Loss Ratio, complete the following analytical tasks to create a comprehensive BI report:     1. **Time-Series Analysis of Total Claims:**  * Using the dataset, create a time-series plot for 'Total Claims' for each UMR and YOA combination. Display the trend over the months.  1. **Year-to-Date (YTD) Metrics Calculation:**  * Calculate and visualize the Year-to-Date (YTD) figures for 'Premium', 'Earned', and 'Total Claims' for each year. Ensure these calculations reset annually.  1. **Loss Ratio Analysis:**  * Plot a line graph showing the 'Loss Ratio' trend for each Binder across different years.  1. **Claims Analysis:**  * Create a bar chart to compare the total number of claims ('Total Claims') for each Binder across different years.  1. **Premium Earnings Trend:**  * Visualize the trend of 'Premium' versus 'Earned' amounts over the years for each UMR. Use a dual-axis line chart for this purpose.  1. **Quarterly Data Breakdown:**  * Generate a pie chart for each year showing the distribution of 'Total Claims' across different quarters.  1. **Risk Analysis Using Loss Ratio:**  * Create a scatter plot correlating 'Total Claims' with 'Loss Ratio' for each Binder, color-coding data points by year. |

**Steps you have to perform.**

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| The steps that candidates can follow to create solutions for the BI report questions based on the dataset:   1. **Time-Series Analysis of Total Claims**   **Objective:** Create a time-series plot for 'Total Claims' for each UMR and YOA combination, displaying the trend over the months.  **Steps:**   * Group the data by 'UMR', 'YOA', and 'Months'. * Sum the 'Total Claims' for each group. * Create a time-series plot where the x-axis represents 'Months', and the y-axis represents the summed 'Total Claims'. * Use different lines or colours to distinguish between different UMR and YOA combinations.  1. **Year-to-Date (YTD) Metrics Calculation**   **Objective:** Calculate and visualize YTD figures for 'Premium', 'Earned', and 'Total Claims' for each year, resetting annually.  **Steps:**   * Sort the data by 'UMR', 'YOA', and 'Months'. * For each 'YOA', calculate the cumulative sum of 'Premium', 'Earned', and 'Total Claims' up to each month. * Reset this cumulative sum at the start of each new year. * Visualize these YTD calculations using a line chart or bar graph for each metric.  1. **Loss Ratio Analysis**   **Objective:** Plot a line graph showing the 'Loss Ratio' trend for each Binder across different years.  **Steps:**   * Group the data by 'Binder' and 'YOA'. * Calculate the average 'Loss Ratio' for each group. * Plot these averages on a line graph, with 'YOA' on the x-axis and 'Loss Ratio' on the y-axis. * Use different lines or colours to distinguish between Binders.  1. **Claims Analysis**   **Objective:** Create a bar chart to compare the total number of claims ('Total Claims') for each Binder across different years.  **Steps:**   * Group the data by 'Binder' and 'YOA'. * Sum the 'Total Claims' for each group. * Create a bar chart with 'Binder' on the x-axis and the summed 'Total Claims' on the y-axis. * Use different colours to represent different years.  1. **Premium Earnings Trend**   **Objective:** Visualize the trend of 'Premium' versus 'Earned' amounts over the years for each UMR.  **Steps:**   * Group the data by 'UMR' and 'YOA'. * Calculate the sum of 'Premium' and 'Earned' for each group. * Plot these sums on a dual-axis line chart, with one axis for 'Premium' and the other for 'Earned'. * Different lines should represent different UMRs.  1. **Quarterly Data Breakdown**   **Objective:** Generate a pie chart for each year showing the distribution of 'Total Claims' across different quarters.  **Steps:**   * Group the data by 'YOA' and 'Quarter'. * Sum the 'Total Claims' for each group. * For each 'YOA', create a pie chart showing the proportion of 'Total Claims' for each quarter.  1. **Risk Analysis Using Loss Ratio**   **Objective:** Create a scatter plot correlating 'Total Claims' with 'Loss Ratio' for each Binder, color-coding data points by year.  **Steps:**   * For each entry in the dataset, plot a point on a scatter plot with 'Total Claims' on the x-axis and 'Loss Ratio' on the y-axis. * Colour-code the points based on 'YOA'. * Different series (or shapes) on the scatter plot can be used to represent different Binders. |