FINANCIAL LOAN REPORT

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**PROJECT OVERVIEW**

The Project is centered around the critical analysis of a Bank Loan Data. Bank loans are a crucial financial tool that enables individuals and businesses to achieve their goals and manage financial needs. However, it's essential for borrowers to understand the terms, costs, and responsibilities associated with loans to make informed financial decisions.

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| **PROBLEM STATEMENT**  In order to monitor and assess our bank's lending activities and performance, we need to create a comprehensive Bank Loan Report.  **PROJECT OBJECTIVE**  The Dynamic Bank Loan Analysis Report, monitor and assess bank's lending activities and performance. This report aims to provide insights into key loan-related metrics and their changes over time, understanding customer behavior, assessing risk, optimizing lending strategies, and improving decision-making processes. The report will help us make data-driven decisions, track our loan portfolio's health, and identify trends that can inform our lending strategies.  **TOOLS AND RDBMS USED IN THE PROJECT**  **RDBMS-** MySQL Workbench  **BUSINESS INTELLIGENCE TOOL-** Tableau 2023.3  **PROCESS INVOLVED IN BUILDING THE PROJECT**  **Step 1:** Collect the necessary details and the dataset about the Bank loan analysis report.  **Step 2:** (Explore Process) Fetch the data to "MySQL Server".  **Step 3:** (Transform Process) Analyze, Clean, and extract the required data according to "Key Performance Indicators (KPIs)".  **Step 4:** Deal with the null, missing, and error data to project requirements using "MS SQL Server or Excel".  **Step 5:** (Load Process) Load the clean and transformed data into "Tableau".  **Step 6:** Create a Dashboard according to the requirement in "Tableau" for better understanding and visualization of the client.  **DATA DESCRIPTION**  Details about the dataset(s) used, including:  **Name of the dataset:** Financial Loan Dataset  **Description of each field/column:**   * **Loan ID-** Loan ID is a unique identifier assigned to each loan application * **Address State-** Address State indicates the borrower's location. * **Employee Length-** Employee Length provides insights into the borrower's employment stability. * **Employee Title-** Employee Title specifies the borrower's occupation or job title. * **Grade-** Grade represents a risk classification. * **Sub Grade-** Sub Grade refines the risk assessment within a grade, providing additional risk differentiation. * **Issue Date-** Issue Date marks the loan's origination date. * **Home Ownership-** Home Ownership indicates the borrower's housing status. It offers insights into financial stability. * **Loan Status-** Loan Status indicates the current state of the loan (e.g., fully paid, current, default). It tracks loan performance. * **Purpose-** Purpose specifies the reason for the loan (e.g., debt consolidation, education). It helps understand borrower intentions. * **Term-** Term defines the duration of the loan in months. * **Verification Status-** Verification Status indicates whether the borrower's financial information has been verified. It assesses data accuracy. * **Annual Income-** Annual Income reflects the borrower's total yearly earnings. * **DTI (Debt-to-Income Ratio)-** DTI measures the borrower's debt burden relative to income. It gauges the borrower's capacity to take on additional debt. * **Instalment-** Instalment is the fixed monthly payment amount for loan repayment, including principal and interest. * **Interest Rate-** Interest Rate represents the annual cost of borrowing expressed as a percentage. It determines the loan's cost. * **Loan Amount-** Loan Amount is the total borrowed sum.   Data types: The fields are mostly in **int, date, text** data types.  Any transformation or pre-processing steps applied: No.  **BANK LOAN REPORT SQL QUERIES**  **KEY PERFORMANCE INDICATORS**   1. **Total Loan Applications-** Total Number of Loan applications submitted in the bank.   Select count(id) as Total\_Loan\_Applications from financial\_loan\_dataset;     1. **Total Amount Funded-** Total Loan amount given by the bank to different customers.   Select sum(loan\_amount) as Total\_Amount\_Funded from financial\_loan\_dataset;     1. **Total Amount Received-** Total amount received by the bank from borrowers(including Interest amount).   Select sum(total\_payment) as Total\_Amount\_Received from financial\_loan\_dataset;     1. **Average Interest Rate-** Calculate the average interest rate across all loans(including both, the bad and good ones).   Select round((avg(int\_rate) \*100),2) as Avg\_Int\_Rate from financial\_loan\_dataset;     1. **Average Debt-to-Income Ratio-** Evaluating the average DTI for our borrowers helps us gauge their financial health. We need to compute the average DTI for all loans.   Select round((avg(dti)\*100),2) as Avg\_DTI from financial\_loan\_dataset;    **GOOD LOANS**  **Good Loans-** Loans with a status of 'Fully Paid' and ' Current'.   1. **Total Number of Good Loan Applications**   Select count (case when loan\_status='Fully Paid' or loan\_status='Current' then id end) as Good\_Loan\_Applications from financial\_loan\_dataset;     1. **Percentage of Good Loan Applications**   Select (count (case when loan\_status='Fully Paid' or loan\_status='Current' then id end) \*100)/count(id) as Good\_Loan\_Applications\_Percentage from financial\_loan\_dataset;     1. **Total Good Loan Amount Funded**   Select sum(loan\_amount) as Good\_Loan\_Amount from financial\_loan\_dataset where loan\_status='Fully Paid' or loan\_status= 'Current';     1. **Total Good Loan Amount Received**   Select sum(total\_payment) as Total\_Good\_Loan\_Amount\_Received from financial\_loan\_dataset where loan\_status='Fully Paid' or loan\_status= 'Current';    **BAD LOANS**  **Bad Loans-** Loans with a status of 'Charged Off'.   1. **Total Number of Bad Loan Applications**   Select count (case when loan\_status='Charged Off' then id end) as Bad\_Loan\_Applications from financial\_loan\_dataset;     1. **Percentage of Bad Loan Applications**   Select (count (case when loan\_status='Charged Off' then id end) \*100)/count(id) as Bad\_Loan\_Applications\_Percentage from financial\_loan\_dataset;     1. **Total Bad Loan Amount Funded**   Select sum(loan\_amount) as Bad\_Loan\_Amount from financial\_loan\_dataset where loan\_status='Charged Off';     1. **Total Bad Loan Amount Received**   Select sum(total\_payment) as Total\_Bad\_Loan\_Amount\_Received from financial\_loan\_dataset where loan\_status='Charged Off';    **TABLEAU WORK-UP**  **DATA LOADING AND ANALYZING**  Once the data is loaded in tableau, the data source window shows metadata (with data types of the fields, their names, the table it belongs to) and a short preview of the data.  Tableau - Bank Loan Project  The loaded data source file  Preview of the Data  Meta Data  **BUILDING INDIVIDUAL SHEETS**  The KPIs and different representations are designed in individual sheets with the help of inbuilt of charts, custom charts, calculated fields, groups and parameters.  **MAKING DASHBOARDS:**  Lastly, the dashboards are worked upon by dragging the sheets on the empty dashboard and arranging them accordingly.  Tableau - Bank Loan Project |
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