**Bank Loan Analytics Project Overview:**

**Objective:**The primary goal of this project is to analyze and present key metrics related to bank loan applications, funding, and repayments. This dashboard provides a comprehensive overview to help stakeholders make informed decisions regarding loan distribution, regional trends, borrower characteristics, and the overall health of the loan portfolio.

Tools Used:

* Database & Analysis: MySQL
* Data Visualization: Power BI

**SUMMARY DASHBOARD:**

**Key Performance Indicators (KPIs):**This section provides a high-level overview of the bank's loan activities with essential metrics:

1. Total Loan Applications: Represents the total count of loan applications in the dataset. Month-to-Date (MTD) and Month-over-Month (MoM) figures highlight recent application trends.
2. Total Funded Amount: Shows the cumulative amount disbursed as loans. MTD and MoM metrics enable monitoring of recent funding trends.
3. Total Received Amount: Reflects the amount collected from borrowers, an indicator of cash flow and repayment efficiency.
4. Average Interest Rate: Calculates the average interest rate applied to loans, showing trends in lending costs over time (MTD and MoM).
5. Average Debt-to-Income (DTI) Ratio: Assesses the financial health of borrowers, with MTD and MoM data for ongoing trend analysis.

**Good vs. Bad Loans:**This comparison divides loans into categories based on performance, helping identify trends in default rates or repayment reliability. Key metrics include:

* Good Loan Percentage: Proportion of loans performing well.
* Good Loan Applications: Count of successful loans.
* Bad Loan Percentage: Proportion of loans that are likely to default.
* Bad Loan Applications: Count of underperforming loans.

**Loan Status Grid:**A table view to break down each loan by status (e.g., fully paid, charged off), providing insights on total loan applications, funded amounts, received amounts, and average financial metrics like interest rate and DTI.

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**OVERVIEW DASHBOARD:**

**This dashboard expands on the summary data with visualizations for deeper analysis:**

1. Monthly Trends: A line chart showing the trend of loan applications over time, helping identify seasonal peaks.
2. Regional Analysis (State Map): A filled map visualization that shows the distribution of loan applications by state, highlighting areas with the most lending activity.
3. Loan Term Distribution: A donut chart to show the proportion of loans by term length (e.g., 36 vs. 60 months), allowing easy identification of preferred term durations.
4. Employment Length Analysis: Bar chart displaying loan applications by borrower employment length, analyzing how employment stability impacts loan approval rates.
5. Purpose of Loan Breakdown: A bar chart that categorizes loans by purpose (e.g., debt consolidation, home improvement), providing insight into why borrowers seek loans.
6. Home Ownership: A treemap visualization that categorizes loan applications based on homeownership status (e.g., rent, mortgage), analyzing the effect of ownership on loan characteristics.

Each visualization in this section uses metrics such as Total Loan Applications, Total Funded Amount, and Total Amount Received to add context.

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**DETAILS DASHBOARD:**

**Comprehensive View of Loan Details:**This dashboard serves as a granular view for users needing specific loan data. It includes detailed information on:

* Loan ID and Purpose: The purpose of each loan, allowing for insights into individual loan motivations.
* Home Ownership and Grade: Details on the borrower’s homeownership status and loan grade, providing a sense of loan risk levels.
* Dates and Financials: Loan issue date, funded amount, interest rate, installment, and total amount received, enabling a complete profile for each loan.

Objective of the Details Dashboard:  
To provide users with an easy-to-access, comprehensive view of each loan, facilitating in-depth analysis and offering a single reference for critical loan metrics.

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