SYNOPSIS

PROJECT - CHASE BANK LOAN ANALYSIS

Project Overview:

This project focuses on Analyzing key performance indicators (KPIs) related to loan management for a banking institution. The goal is to provide insights into the bank's loan portfolio performance by calculating critical KPIs and visualizing them using Excel, Power BI, and SQL.

DataSet:

By giving the dataset financial_loan , we have to analyse the performance and give the overview of the bank loan report to give all the summary of the KPI and basic Indicators.

Problem Statement:

Key Performance Indicators (KPIs) Requirements:

1. Total Loan Applications: We need to calculate the total number of loan applications received during a specified period. Additionally, it is essential to monitor the Month-to-Date (MTD) Loan Applications and track changes Month-over-Month (MoM).

2. Total Funded Amount: Understanding the total amount of funds disbursed as loans is crucial. We also want to keep an eye on the MTD Total Funded Amount and analyse the Month-over-Month (MoM) changes in this metric.
3. Total Amount Received: Tracking the total amount received from borrowers is essential for assessing the bank's cash flow and loan repayment. We should analyse the Month-to-Date (MTD) Total Amount Received and observe the Month-over-Month (MoM) changes.
4. Average Interest Rate: Calculating the average interest rate across all loans, MTD, and monitoring the Month-over-Month (MoM) variations in interest rates will provide insights into our lending portfolio's overall cost.

Average Debt-to-Income Ratio (DTI): Evaluating the average DTI for our borrowers helps us gauge their financial health. We need to compute the average DTI for all loans, MTD, and track Month-over-Month (MoM) fluctuations

CHARTS

1. Monthly Trends by Issue Date (Line Chart): To identify seasonality and long-term trends in lending activities
2. Regional Analysis by State (Filled Map): To identify regions with significant lending activity and assess regional disparities
3. Loan Term Analysis (Donut Chart): To allow the client to understand the distribution of loans across various term lengths.
4. Employee Length Analysis (Bar Chart): How lending metrics are distributed among borrowers with different employment

lengths, helping us assess the impact of employment history on loan applications.

5. Loan Purpose Breakdown (Bar Chart): Will provide a visual breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.
6. Home Ownership Analysis (Tree Map): For a hierarchical view of how home ownership impacts loan applications and disbursements.

Methodology:

1. Data Collection & Processing: Loan data is collected from the bank's database using SQL, cleaned, and transformed for analysis in Excel. Key metrics are calculated and prepared for visualization.
2. Excel Analysis: Initial data exploration, calculation of KPIs, and trend analysis is done using Excel functions. Pivot tables and charts are utilized to present key statistics.
3. Power BI Dashboard: A comprehensive dashboard is created using Power BI, offering interactive visualizations and real-time insights into loan metrics. The dashboard includes filters for MTD, MoM, and detailed comparisons between different metrics to track loan performance.
4. SQL Querying: SQL queries are used to extract relevant loan data from the database. These queries form the backbone for the data analysis and are integrated into the Power BI reports.

Technologies:

- SQL: For Data Management and Analysis.
- Power BI: For Interactive Dashboards and Reports.
- MS Excel: For Data Cleaning and Pre Processing

Software Requirements:

- Operating Systems: Windows, Linux, macOS.
- IDE: MySQL Database (for SQL) Or Power BI (for Visualizations).

Hardware Requirements:

- RAM: Minimum 8GB , Recommended 16GB.
- Processor: Minimum Intel i5/ AMD Ryzen 3, Recommended Intel i7 / AMD Ryzen 5
- Storage: SSD 256GB / 1TB Hard Drive Storage.