

Bank Loan Analysis Report

Executive Summary

This Bank Loan Analysis project demonstrates the use of SQL for data extraction, Power BI for dashboard creation, and Python for data analysis and visualization. The objective is to analyze loan application trends, assess the bank's lending performance, and provide insights into customer demographics and loan characteristics.

Problem Statement

The bank needs to monitor and evaluate its loan portfolio to improve decision-making, identify risk patterns, and enhance profitability. This project delivers three dashboards: Summary, Overview, and Details - each serving a specific purpose to visualize KPIs, trends, and customer segmentation.

Data & Methodology

- Data Source: Financial loan dataset (38,576 records, 24 fields)
- Tools Used: SQL, Power BI, Python (Matplotlib, Pandas)
- Steps:
 1. SQL queries were executed to extract KPIs and validate dashboard metrics.
 2. Power BI dashboards were designed for interactive visual analysis.
 3. Python was used to recreate visuals and compile this portfolio-ready report.

Key Performance Indicators (KPIs)

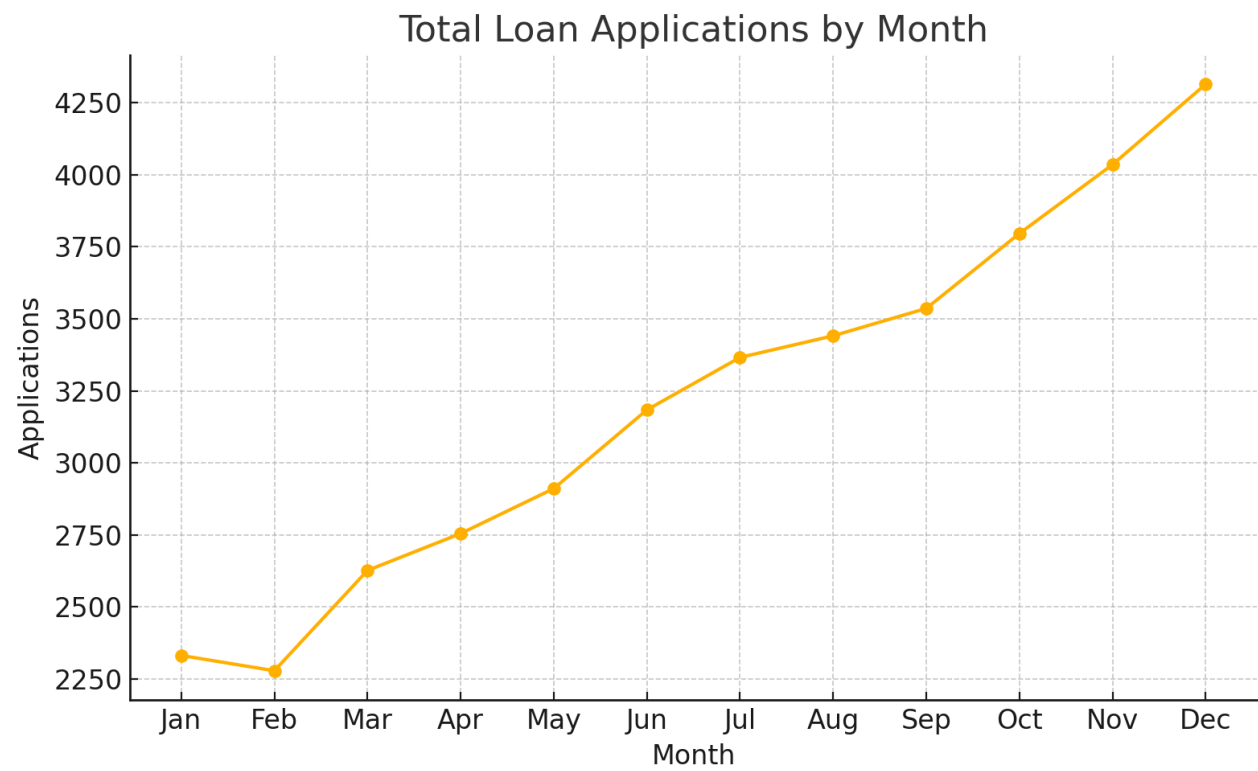
Metric	Value
Total Applications	38576.0
Total Funded Amount	435757075.0
Total Amount Received	473070933.0
Average Interest Rate (%)	12.05
Average DTI (%)	13.33
Good Loan Percentage (%)	86.18
Good Loan Funded Amount	370224850.0
Good Loan Amount Received	435786170.0
Bad Loan Percentage (%)	13.82
Bad Loan Funded Amount	65532225.0
Bad Loan Amount Received	37284763.0

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SQL Validation Results

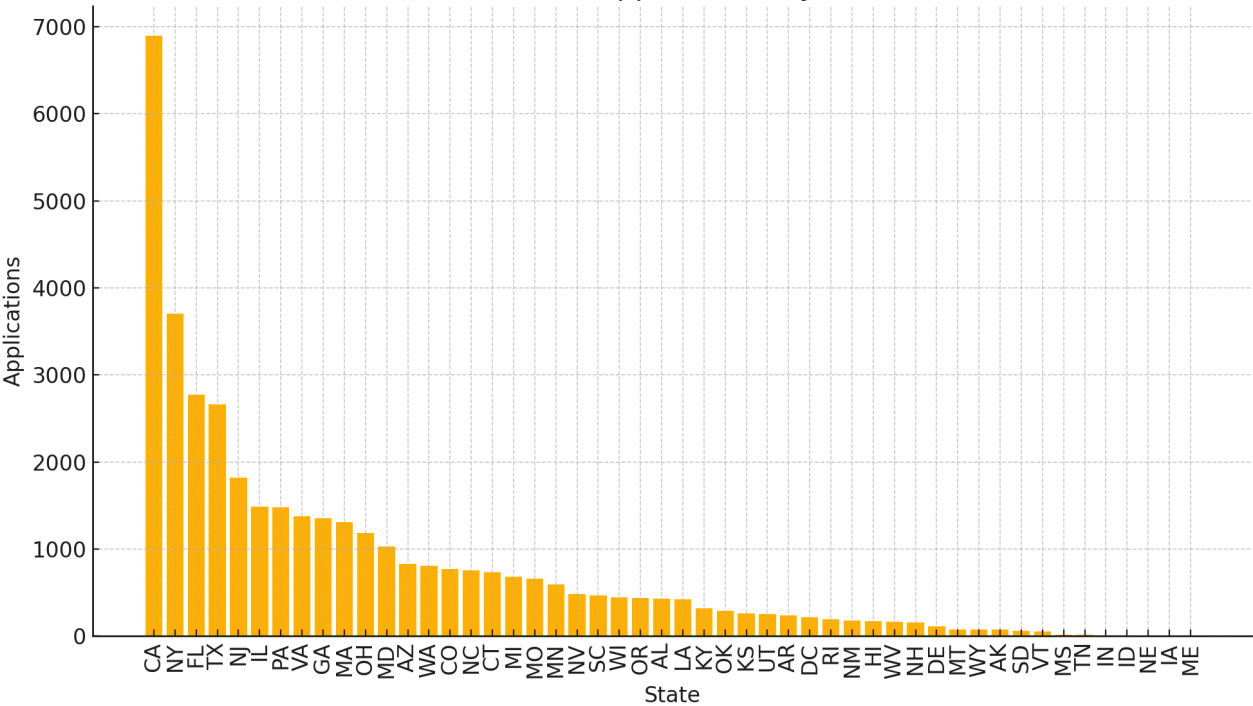
Metric	SQL Result	Matches Power BI?
Total Applications	38576.0	Yes
MTD Applications (Dec)	4314.0	Yes
PMTD Applications (Nov)	4035.0	Yes
Good Loan Percentage (%)	86.18	Yes
Bad Loan Percentage (%)	13.82	Yes

Visual Analysis



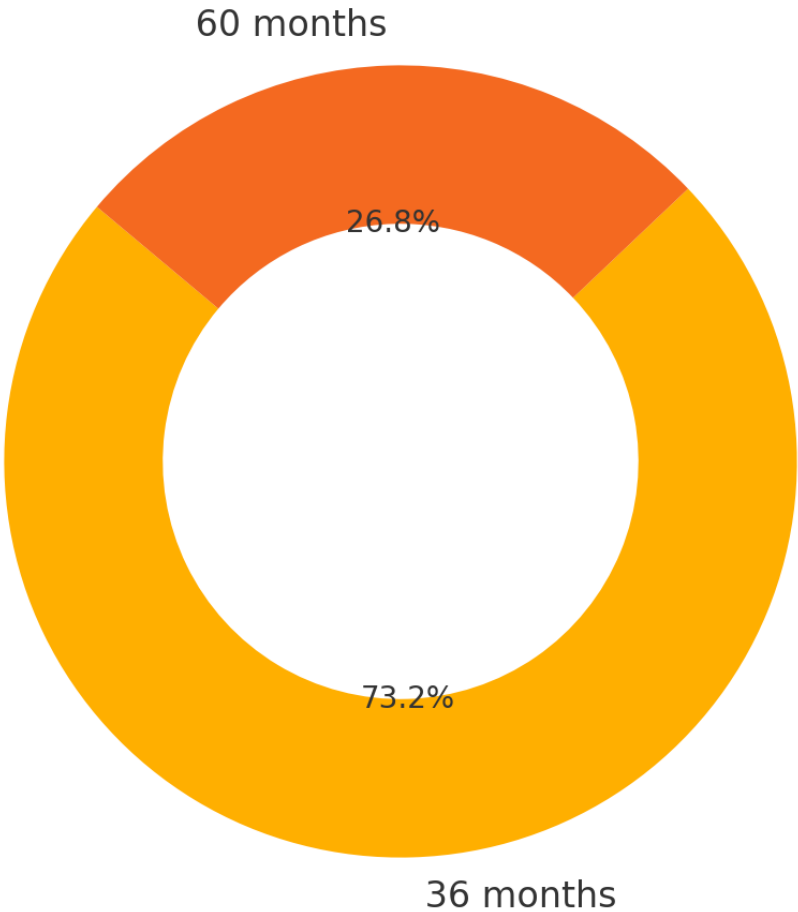
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Total Loan Applications by State



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Loan Term Distribution

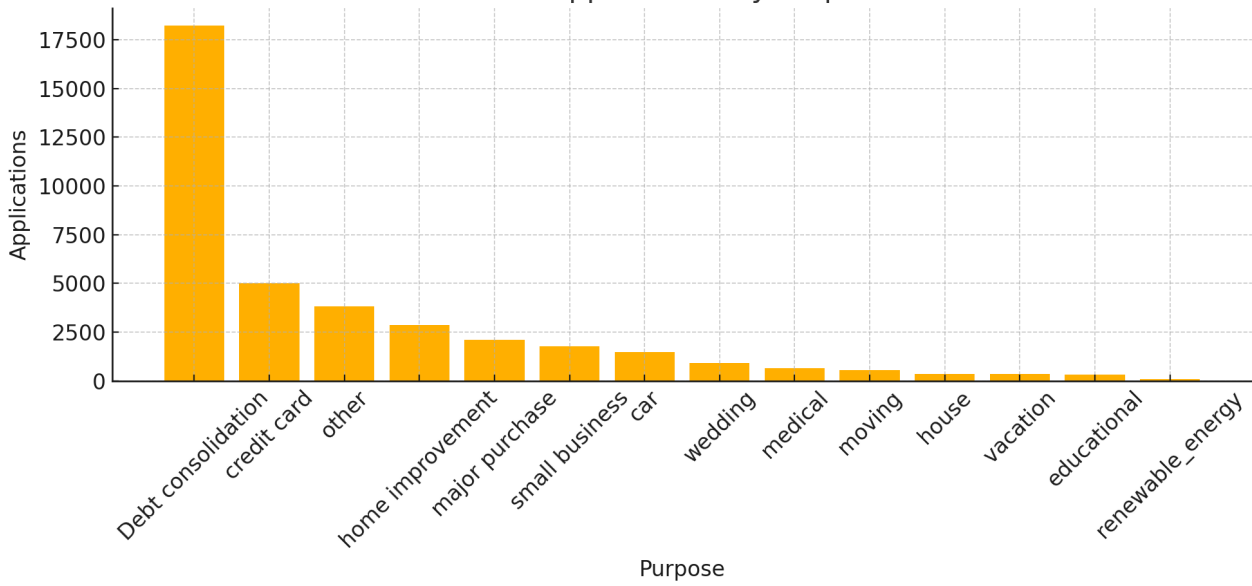


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Loan Applications by Employee Length



Loan Applications by Purpose



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