Bank Loan Analysis Project (Excel & SQL)

Project Overview

This project focuses on analyzing bank loan data to understand loan approval trends, borrower risk profiles, repayment behavior, and overall portfolio health using Excel and SQL.

Business Problem

Banks must evaluate borrower credit risk, reduce loan defaults, and improve approval accuracy while managing large volumes of loan data. This project supports data-driven lending decisions.

Tools & Technologies

Microsoft Excel (Data cleaning, Pivot Tables, Dashboards) and SQL (Data querying, transformation, and analysis).

Dataset Description

The dataset includes Loan ID, Address State, Employee Length, Employee Title, Grade, Sub Grade, Home Ownership, Issue Date, Loan Status, Annual Income, DTI, Interest Rate, Loan Amount, and Installment.

Domain Knowledge

The analysis follows real-world banking processes such as loan application review, credit checks, income verification, risk assessment, approval, repayment, and portfolio monitoring.

Key Analysis Performed

Loan approval analysis, default risk evaluation, DTI impact, income vs loan amount trends, interest rate distribution, geographic insights, and employment stability analysis.

SQL Concepts Used

Aggregate functions, CASE statements, CTEs, subqueries, date functions, filtering, and grouping.

Excel Features Used

Pivot Tables, Pivot Charts, KPI metrics, conditional formatting, and interactive dashboards.

Key Insights

Lower DTI borrowers show lower default risk. Higher credit grades receive better loan terms. Stable employment correlates with better repayment behavior.

Business Impact

Supports risk reduction, better loan decisions, improved portfolio management, regulatory compliance, and profitability optimization.

Conclusion

This project demonstrates practical use of Excel and SQL for bank loan analytics and credit risk management.

Author

Suleiman Razzack | Data Analysis | SQL | Excel