PROBLEM STATEMENT

This project aims to analyse bank loan data to better understand the bank's lending activities and overall loan performance. To achieve this, we will build a Bank Loan Report using dashboards that summarise key metrics, track changes over time, and highlight important trends. The report will support data-driven decision-making, help monitor portfolio health, and improve lending strategies.

I. DASHBOARD 1: SUMMARY

The Summary Dashboard provides a high-level view of the bank's loan performance. It focuses on key performance indicators (KPIs) that help measure lending activity, repayment behaviour, and borrower risk.

1. Key Performance Indicators (KPIs)

- **Total Loan Applications:** Total number of loan applications received in a selected period, including Month-to-Date (MTD) values and Month-over-Month (MoM) changes.
- **Total Funded Amount:** Total amount of money disbursed as loans. This metric is tracked for MTD performance and MoM growth or decline.
- **Total Amount Received:** Total repayments collected from borrowers. MTD and MoM analysis helps assess cash flow and repayment trends.
- **Average Interest Rate:** Average interest rate across all loans, including MTD values and MoM changes, to understand pricing trends.
- **Average Debt-to-Income Ratio (DTI):** Average borrower DTI, used to evaluate borrower financial health and risk exposure over time.

2. Good Loan v Bad Loan KPI's

To assess loan quality, loans are classified into Good Loans and Bad Loans based on loan status. This comparison helps evaluate portfolio quality and identify potential credit risk.

- **Good Loan KPIs:** Good Loans include loans with status Fully Paid or Current.
    + Good Loan Application Percentage
    + Total Good Loan Applications
    + Total Good Loan Funded Amount
    + Total Amount Received from Good Loans
- **Bad Loan KPIs:** Bad Loans include loans with status Charged Off.
    + Bad Loan Application Percentage
    + Total Bad Loan Applications
    + Total Bad Loan Funded Amount
    + Total Amount Received from Bad Loans

3. Loan Status Grid View

To gain a detailed overview of loan performance, a Loan Status Grid View is created. This view helps quickly assess how different loan statuses contribute to overall portfolio health. The grid groups loans by status and displays key metrics such as:

- Total Loan Applications
- Total Funded Amount
- Total Amount Received
- MTD Funded Amount
- MTD Amount Received

- Average Interest Rate
- Average DTI

II. **DASHBOARD 2: OVERVIEW**

The Overview Dashboard uses visual charts to show trends and patterns in lending activity. These visuals make it easier to identify insights and compare loan performance across different dimensions.

1. **Monthly Trends by Issue Date (Line Chart):** Shows changes in loan applications, funded amount, and received amount over time to identify trends and seasonality.
2. **Regional Analysis by State (Filled Map):** Displays lending activity by state to highlight regional differences and high-activity areas.
3. **Loan Term Analysis (Donut Chart):** Shows how loans are distributed across different terms (such as 36 vs 60 months).
4. **Employment Length Analysis (Bar Chart):** Compares loan metrics across different employment length categories to assess stability impact.
5. **Loan Purpose Breakdown (Bar Chart):** Displays loan metrics by loan purpose to understand why borrowers seek loans.
6. **Home Ownership Analysis (Tree Map):** Shows loan distribution based on home ownership status, providing a hierarchical view of borrower stability.

III. **DASHBOARD 3: DETAILS**

The Details Dashboard provides a complete and detailed view of all loan records. It combines borrower information, loan characteristics, and performance metrics in one place. The main objective of the Details Dashboard is to give users quick access to detailed loan data. It serves as a single view for analysing individual loans, borrower profiles, and overall loan performance, supporting deeper analysis and validation.