**Bank Loan Portfolio Project Report**

**1. Introduction**

This report provides a comprehensive analysis of loan applications, funded amounts, repayment status, and borrower characteristics. It highlights key performance indicators (KPIs), trends across time, states, loan terms, purposes, and borrower profiles. The aim is to evaluate portfolio performance, distinguish between good and bad loans, and uncover actionable insights to improve credit strategies, risk management, and business growth.

**2. Project Statement**

The purpose of this project is to analyse loan application and repayment data to understand customer borrowing behaviour, portfolio performance, and lending risks. By examining overall applications, funded amounts, repayment collections, and loan statuses, this analysis seeks to provide a clear view of portfolio health.

The project specifically focuses on:

* **Assessing loan portfolio KPIs** including applications, funded amounts, and repayment trends.
* **Identifying loan quality distribution** (good vs. bad loans) and their financial impact.
* **Analysing loan status categories** (Current, Charged Off, Fully Paid) to measure repayment success and defaults.
* **Studying borrower demographics and attributes** such as state, loan term, employee length, loan purpose, and home ownership.
* **Evaluating profitability and risks** through average interest rate and average debt-to-income (DTI) ratios.

The ultimate goal is to transform raw loan performance data into actionable insights that support:

1. Optimized lending strategies to increase funded amounts while minimizing bad loans.
2. Risk mitigation policies for high default areas.
3. Enhanced borrower targeting based on purpose, term, and demographic patterns.
4. Sustainable growth with improved repayment collection and reduced charge-offs.

**3. KPI Requirements**

* **Total Loan Applications:** 38.6K
  + MTD: 4.3K | MoM: 6.9%
* **Total Funded Amount:** $435.8M
  + MTD: $54.0M | MoM: 13.0%
* **Total Amount Received:** $473.1M
  + MTD: $58.1M | MoM: 15.8%
* **Average Interest Rate:** 12.0%
  + MTD: 12.4% | MoM: 3.5%
* **Average DTI:** 13.3%
  + MTD: 13.7% | MoM: 2.7%

**4. Trends & Performance Analysis**

**Good vs. Bad Loans**

* **Good Loan Applications:** 33.2K
  + Funded: $370.2M | Received: $435.8M
* **Bad Loan Applications:** 5.3K
  + Funded: $65.5M | Received: $37.3M

Good loans form the majority of the portfolio, driving higher collections compared to bad loans.

**Loan Status Analysis**

1. **Current Loans**
   * Applications: 1,098
   * Funded: $18.9M | Received: $24.2M
   * Average Interest Rate: 15.1% | Average DTI: 14.72%
2. **Charged-Off Loans**
   * Applications: 5,333
   * Funded: $65.5M | Received: $37.3M
   * Average Interest Rate: 13.9% | Average DTI: 14.0%
3. **Fully Paid Loans**
   * Applications: 32,145
   * Funded: $351.4M | Received: $411.6M
   * Average Interest Rate: 11.6% | Average DTI: 13.2%

Fully paid loans dominate the portfolio, but charge-offs remain a risk segment with significant losses.

**Loan Applications Trends**

1. **By Month:** Highest in December, Lowest in January
2. **By State:** Highest in California (CA)
3. **By Term:** 36 months (73.2%) dominate over 60 months (26.8%)
4. **By Employee Length:** Highest in 10+ years, lowest in 7 years
5. **By Purpose:** Highest for Debt Consolidation, lowest for Medical
6. **By Home Ownership:** Rent (18K) slightly higher than Mortgage (17K)

**Funded Amount Trends**

1. **By Month:** Highest in December, lowest in January
2. **By State:** California leads
3. **By Term:** 36 months (62.7%) vs. 60 months (37.3%)
4. **By Employee Length:** Highest for 10+ years, lowest for 7 years
5. **By Purpose:** Debt Consolidation highest, Medical lowest
6. **By Home Ownership:** Mortgage ($219.3M) > Rent ($185.7M)

**Amount Received Trends**

1. **By Month:** Highest in December, lowest in January
2. **By State:** California leads
3. **By Term:** 36 months (62.3%) vs. 60 months (37.7%)
4. **By Employee Length:** Highest for 10+ years, lowest for 1 year
5. **By Purpose:** Debt Consolidation highest, Car loans lowest
6. **By Home Ownership:** Mortgage ($238.5M) > Rent ($201.8M)

**5. Software & Tools Used**

* **SQL** – Loan data extraction and aggregation.
* **Excel / Google Sheets** – Data cleaning and initial KPIs.
* **Power BI / Tableau** – Visualization of loan performance and repayment trends.
* **Python (Pandas, Matplotlib, Seaborn)** – Data modelling and advanced analysis.

**6. Findings & Insights**

1. **Good loans dominate** the portfolio, with far higher repayment success than bad loans.
2. **December** consistently records the highest loan activity, while **January** shows the lowest.
3. **Debt Consolidation loans** are the largest driver of applications, funding, and repayments.
4. **36-month loans** are far more popular than 60-month terms, possibly due to lower risk.
5. **Mortgage holders** contribute more in funded and received amounts compared to renters.
6. **Charge-offs** remain a key risk segment with high losses despite funded amounts.
7. Borrowers with **10+ years of employment** represent the strongest customer base.

**7. Key Findings & Recommendations**

**Key Findings**

* Loan portfolio growth is steady with strong repayments from good loans.
* Default rates (charged-off loans) need close monitoring.
* Debt consolidation and mortgage-backed loans are the strongest performing segments.

**Recommendations**

1. **Strengthen Risk Management:** Implement tighter credit checks for bad loan segments to reduce charge-offs.
2. **Target High-Value Borrowers:** Focus on customers with 10+ years employment and mortgage ownership.
3. **Seasonal Campaigns:** Push loan marketing during December while designing recovery strategies for low-demand January.
4. **Product Strategy:** Promote 36-month loans while reassessing pricing/eligibility for 60-month loans.
5. **Diversification:** Explore growth opportunities in underrepresented loan purposes (e.g., Medical, Car) to expand customer base.

**8. Conclusion**

The loan portfolio demonstrates strong performance in terms of funded amounts and repayments, particularly driven by good loans, debt consolidation purposes, and mortgage-backed borrowers. However, charge-offs highlight areas of risk requiring stronger monitoring and control. By optimizing borrower targeting, enhancing credit risk management, and capitalizing on high-demand trends, the business can ensure sustainable growth, improved profitability, and reduced default exposure.