Bank Loan Risk Analysis – Q&A

1. Dataset Understanding

Q: What was the size of the dataset (number of rows & columns)?
A: The dataset contained **38,623 loan applications** with features such as applicant demographics, loan amount, tenure, loan purpose, property ownership, and loan status.

Q: How did you handle missing or inconsistent data?
A: I used **Python (Pandas & NumPy)** for cleaning: dropped duplicate records, handled missing values, and ensured categorical data (e.g., loan purpose, home ownership) was consistent.

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2. KPIs (Key Performance Indicators)

Q: What KPIs did you define to measure loan performance?
A:

- **Total Funded Amount:** $436M
- **Total Amount Received** from borrowers
- **Average Interest Rate** across loans
- **Good Loan % vs Risky Loan %**
- **Loan Performance by Tenure** (36 vs 60 months)
- **Loan Performance by Home Ownership** (Own, Mortgage, Rent)

Q: Which KPI gave the most important insight?
A: The **Good vs Risky Loan % (86.2% vs 13.8%)** highlighted portfolio health and was the foundation for risk analysis.

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3. Loan Performance Insights

Q: What was the proportion of good loans vs risky loans?
A: Good Loans: 86.2% ($370M) vs **Risky Loans:** 13.8% ($65.5M).

Q: Which loan tenure performed better?
A: 36-month loans performed significantly better (73% success rate) than 60-month loans.

Q: Did home ownership affect loan default risk?
A: Yes, **renters** had a higher probability of default compared to homeowners and mortgage holders.

Q: How does loan purpose affect repayment?
A: Certain purposes like **small business loans** showed higher default rates compared to personal loans or debt consolidation.

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4. Dashboard Design

Q: How many dashboards did you design and what were their focus areas?
A:

1. **Summary Dashboard** – Portfolio KPIs (funded, good vs risky loans).
2. **Overview Dashboard** – Loan tenure, demographics, repayment trends.
3. **Details Dashboard** – Loan purposes, borrower segments, home ownership.

Q: What visualizations did you use?
A: KPI cards, bar charts, pie charts, line graphs, and slicers for interactivity.

Q: How did you ensure interactivity?
A: Added **filters, slicers, and drilldowns** to analyze performance across categories (e.g., by loan purpose or ownership).

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5. Tools & Techniques

Q: Which tools did you use for analysis and visualization?
A:

- **Python & Pandas** – Data cleaning and preprocessing
- **SQL** – Querying and extracting insights
- **Power BI** – Interactive dashboards
- **Excel** – Initial data exploration

Q: Why did you choose Power BI over Tableau/Excel?
A: Power BI offers **better integration with SQL, easy DAX calculations, and highly interactive dashboards** suitable for business reporting.

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6. Key Insights & Recommendations

Q: What were the top 3 insights?
A:

1. **Shorter tenure (36 months) loans** are safer and have higher repayment success.

2. **Renters** show higher risk compared to homeowners.
3. **Loan purpose** significantly affects repayment; small business loans are riskier.

Q: What recommendations would you give to the bank?
A:

- Encourage **36-month loans** for higher repayment reliability.
- Apply **stricter risk assessment for renters**.
- Closely monitor **loan purposes with higher default history**.
- Use **real-time dashboards** to track portfolio health.

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7. Project Impact

Q: How does this project help in real-world banking decisions?
A: It allows banks to **reduce defaults, improve loan approval strategies, and monitor portfolio performance** effectively.

Q: Can this project be extended into predictive modeling?
A: Yes, by applying **machine learning models** (e.g., Logistic Regression, Random Forest), we can predict whether a new applicant is likely to default.