### ****Overview of the Data Analysis Process****

### ****Methodology and Strategy Used****

The data analysis process followed a structured approach to understand loan default trends, identify risk factors, and provide actionable recommendations. Below is a brief outline of the methodology used.

1. **Data Understanding & Preparation**

* The dataset was examined to understand key variables: Loan Amount, Interest Rate, Debt-to-Income Ratio (DTI), and Loan Status (Defaulted/Paid Off).
* Missing values and inconsistencies were checked and addressed if necessary.
* Data was structured into Pivot Tables to allow for dynamic analysis.

1. **Exploratory Data Analysis (EDA)**

**Key Metrics Identified**:

* Default Rate Calculation: Default Rate = (Defaulted Loans / Total Loans) × 100
* Loan Default Distribution based on Loan Amount, Interest Rate, and DTI.

Pivot Tables & Charts were created to analyze patterns and trends.

1. **Key Analysis Areas**

* Interest Rate vs. Default Rate
* Identified that loans with interest rates above 10% have higher default rates.
* Loan Amount vs. Default Rate
* Found that loans between $10K - $15K have the highest risk.
* Debt-to-Income Ratio vs. Default
* Observed that borrowers with DTI between 10-20% show the highest defaults.

1. **Insights & Recommendations**

* Adjust interest rates to reduce defaults.
* Tighten lending criteria for high-risk loan ranges ($10K - $15K).
* Monitor borrowers with 10-20% DTI closely and offer financial literacy support.

1. **Dashboard Development**

* Interactive visualizations, including Bar Charts, Line Graphs, and KPI Cards, were created to make insights easy to understand.
* Slicers & Filters were incorporated for dynamic analysis.
* A dedicated insights & recommendations section was added to support decision-making.

**Summary**

This analysis successfully identified key risk factors contributing to loan defaults and provided data-driven recommendations to improve loan performance. The dashboard serves as a comprehensive tool for monitoring and decision-making.