

Banking Data Analysis Project

Abstract:

This project focuses on analyzing customer-related data from a bank to understand the demographics, financial behavior, and account preferences of clients. The ultimate aim is to extract key insights that help in strategic decision-making and enhancing customer experience through visualization and data querying.

Tools Used:

- * *Microsoft Excel* – For initial data cleaning and preprocessing.
- * *SQL (Structured Query Language)* – For querying and manipulating the data.
- * *Power BI* – For creating interactive visual dashboards.

Introduction:

With an increase in digital banking, institutions collect vast volumes of customer information. Properly analyzing this data can reveal trends such as preferred account types, customer age groups, gender distribution, loyalty classifications, and income levels. Our project uses a banking dataset to perform a comprehensive analysis by cleaning the data in Excel, writing queries in SQL, and visualizing it in Power BI.

Steps Involved:

1. *Data Cleaning in Excel:*

- * Removed null or missing values.
- * Standardized column names and formats.
- * Validated categorical values (e.g., gender, nationality).

2. *Importing Cleaned Data into SQL:*

- * Created a database and relevant tables.
- * Imported the cleaned Excel data into SQL.
- * Wrote SQL queries to extract insights such as:
 - * Count by gender, nationality, occupation.
 - * Distribution by age group.
 - * Average income by account type.

3. *Data Import into Power BI:*

- * Connected Power BI to the SQL database.
- * Imported tables and views created through SQL queries.
- * Designed visualizations such as:
 - * Pie charts for gender and nationality.
 - * Bar charts for income ranges.
 - * Line charts for fee structure across age groups.
 - * Tree maps for occupational distribution.

Conclusion:

Using Excel for cleaning, SQL for querying, and Power BI for visualization, we transformed raw banking data into meaningful insights. The visual dashboards enabled easy interpretation of customer behavior, supporting informed decision-making for customer engagement and product strategies.