# BRANCH PERFORMANCE ANALYSIS

## Aim

The Branch Performance Analysis dashboard aims to evaluate the performance of different branch locations. It provides insights into total transactions, deposits, withdrawals, customer complaints, ATM usage, and net profit to support data-driven decision-making and enhance branch operations.

## Features

* **Branch ID**: Unique identifier for each branch.
* **Branch Location**: Name of the branch location.
* **Branch Manager**: Manager of the branch.
* **Total Transactions**: Total number of transactions conducted at the branch.
* **Total Deposits**: Total amount of deposits made at the branch.
* **Total Withdrawals**: Total amount of withdrawals made at the branch.
* **Number of New Accounts**: Number of new accounts opened at the branch.
* **Customer Complaints**: Number of complaints received from customers.
* **Average Customer Wait Time**: Average waiting time for customers at the branch.
* **Employee Satisfaction Score**: Satisfaction score of branch employees.
* **Monthly Operating Costs**: Operating costs of the branch per month.
* **Net Profit**: Net profit earned by the branch.
* **Loan Approval Rate**: Percentage of loan applications approved.
* **Credit Card Applications**: Number of credit card applications received.
* **ATM Usage**: Frequency of ATM usage at the branch.

## Methodology

1. **Data Collection and Preparation**:
   * Collected raw data from various branch locations.
   * Handled missing values by filling or removing them.
   * Removed outliers that could skew the analysis.
   * Recoded values for consistency and accuracy.
2. **Data Modeling in SQL**:
   * Created a database schema and imported the data.
   * Executed SQL queries to model the data for analysis.
3. **Data Summary**:
   * Calculated descriptive statistics like mean, median, standard deviation.
   * Generated frequency tables to understand the distribution of data.
4. **Dashboard Creation**:
   * Used the cleaned and modeled data to create a dashboard.
   * Visualized key metrics and insights using various types of charts.

## Output:

* **Dashboard**: The dashboard includes various charts and visualizations to represent branch performance effectively.
  + **Sum of Total Transactions by Branch Location**: A pie chart showing the distribution of transactions across different branches.
  + **Sum of Customer Complaints by Branch Location**: A bar chart depicting the number of customer complaints for each branch.
  + **Sum of ATM Usage by Branch Location**: A radar chart illustrating the usage of ATMs in different locations.
  + **Sum of Total Withdrawals by Branch Location**: A bar chart representing the total withdrawals from each branch.
  + **Sum of Total Deposits by Branch Location**: A pie chart showing the deposits made in each branch.
  + **Sum of Net Profit by Branch Location**: A bar chart illustrating the net profit of each branch.

## Result Analysis

1. **Sum of Total Transactions by Branch Location**:
   * **Insights**: Branches with the highest transaction volumes are highlighted, with Los Angeles leading at 20.49%. This indicates a high level of customer activity and business operations at this branch.
2. **Sum of Customer Complaints by Branch Location**:
   * **Insights**: Los Angeles has the highest number of customer complaints, suggesting areas for improvement in customer service. This can guide management to investigate the root causes and implement solutions to enhance customer satisfaction.
3. **Sum of ATM Usage by Branch Location**:
   * **Insights**: The radar chart shows which branches have the highest ATM usage, indicating higher customer traffic in those areas. Los Angeles and Houston show significant ATM usage, reflecting their high transaction volumes.
4. **Sum of Total Withdrawals by Branch Location**:
   * **Insights**: The bar chart highlights branches with the highest withdrawal volumes, indicating their popularity or the size of their customer base. Both Los Angeles and Houston lead in this metric.
5. **Sum of Total Deposits by Branch Location**:
   * **Insights**: The pie chart displays the branches that receive the most deposits, which can inform investment and resource allocation decisions. New York and Chicago are among the top branches for deposits.
6. **Sum of Net Profit by Branch Location**:
   * **Insights**: The bar chart identifies the most profitable branches, with Houston being the top performer. This metric is crucial for understanding the financial health and performance of each branch.

## Summary of Analysis

* **Overall Insights**: The dashboard provides a comprehensive overview of branch performance. Los Angeles, Houston, and New York are key branches with high transaction volumes and customer interactions.
* **Operational Efficiency**: The data suggests areas for improvement in customer service and operational efficiency, particularly in branches with high customer complaints.
* **Strategic Decision-Making**: The analysis supports strategic decisions to enhance branch performance, allocate resources effectively, and improve customer satisfaction.