**Banking Dashboard**

**Problem Statement**

Develop a basic understanding of risk analytics in banking and financial services and understand how data is used to minimize the risk of losing money while lending to customers.

**Solution**

With our dashboards created using the latest Power BI tools, HDFC Bank can make decisions based on the applicant’s profile, such as whether the applicant is likely to repay the loan and thus approve or reject the loan accordingly.

**About Dataset**

This dataset contains information about bank details and various client details, consisting of multiple interlinked tables through keys like primary key and foreign key.

The various tables include:

* Banking Relationship
* Client-Banking
* Gender
* Investment Advisor
* Period

**Data Cleaning**

* Created a new column **Engagement Timeframe** in the Client-Banking table to indicate the timeline of clients in the bank.
* Created a new column **Engagement Days** in Client-Banking table to show how many days a client has spent from the date of joining the bank.
* Created bins for **Estimated Income**: < 100,000 as "Low" and < 300,000 as "Mid" with a new column named **Income Band** in Client-Banking table.
* Created a new column named **Processing Fees** for the column Fee Structure: if fee structure is high, then processing fee is 0.05.

**Calculated Functions**

* **Sum**

Adds all numbers in a column.

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Sum = SUM(<column>)

Example:

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Bank Deposit = SUM('Clients - Banking'[Bank Deposits])

* **DistinctCount**

Counts the number of distinct values in a column.

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DISTINCTCOUNT(<column>)

Example:

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Total Clients = DISTINCTCOUNT('Clients - Banking'[Client ID])

* **SumX**

Returns the sum of an expression evaluated for each row in a table.

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SUMX(<table>, <expression>)

Example:

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Total Fees = SUMX('Clients - Banking', [Total Loan] \* 'Clients - Banking'[Processing Fees])

* **Switch**

Evaluates an expression against a list of values and returns one of multiple possible result expressions.

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SWITCH(<expression>, <value>, <result>[, <value>, <result>]…[, <else>])

* **DATEDIFF**

Returns the number of interval boundaries between two dates.

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DATEDIFF(<Date1>, <Date2>, <Interval>)

Example:

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Engagement Days = DATEDIFF('Clients - Banking'[Joined Bank], TODAY(), DAY)

**KPIs**

* **Total Clients**

Represents the total number of clients in banking.

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Total Clients = DISTINCTCOUNT('Clients - Banking'[Client ID])

* **Total Loan**

Total loan amount including bank loan, business lending, and credit card balance of a particular investor or gender.

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Total Loan = [Bank Loan] + [Business Lending] + [Credit Cards Balance]

* **Bank Loan**

Loan amount to be repaid by the client.

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Bank Loan = SUM('Clients - Banking'[Bank Loans])

* **Business Lending**

Loan amount given to small businesses.

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Business Lending = SUM('Clients - Banking'[Business Lending])

* **Total Deposit**

Amount deposited by particular investors in the bank.

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Total Deposit = [Bank Deposit] + [Savings Account] + [Foreign Currency Account] + [Checking Accounts]

* **Total Fees**

Amount charged by the bank for account setup, maintenance charges, etc.

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Total Fees = SUMX('Clients - Banking', [Total Loan] \* 'Clients - Banking'[Processing Fees])

* **Bank Deposit**

Money deposited in the bank.

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Bank Deposit = SUM('Clients - Banking'[Bank Deposits])

* **Checking Account Amount**

Amount available in checking accounts for daily transactions.

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Checking Accounts = SUM('Clients - Banking'[Checking Accounts])

* **Total Credit Card Amount**

Short-term source of financing for a company by a bank.

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Total CC Amount = SUM('Clients - Banking'[Amount of Credit Cards])

* **Savings Account Amount**

Interest-bearing deposit account held at a bank.

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Savings Account = SUM('Clients - Banking'[Saving Accounts])

* **Foreign Currency Amount**

Account held in a currency other than Indian, Bhutanese, or Nepalese currency.

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Foreign Currency Account = SUM('Clients - Banking'[Foreign Currency Account])

* **Engagement Account**

Represents customer engagement length in the bank.

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Engagement Length = SUM('Clients - Banking'[Engagement Days])

* **Credit Cards Balance**

Total amount owed by a cardholder to their credit card bank.

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Credit Cards Balance = SUM('Clients - Banking'[Credit Card Balance])

**Visualization and Result**

* Home
* Loan Analysis
* Deposit Analysis
* Summary Dashboard

**Conclusion**

Empowered by the latest data visualization techniques, Power BI dashboards are among the most effective tools in the banking sector. As outlined, a banking operations dashboard in Power BI can be developed with key banking-related metrics and KPIs.

**Future Work**

* With these dashboards, HDFC Bank can easily monitor total loan amounts and other financial details of particular investors.
* It helps identify which types of banks have more clients; for example, private banks have more clients, which can help other banks strategize to increase their client base.
* Provides insights about which nationality has the highest bank loans.
* Offers information about various types of amounts involved in different account types by investors.