BANK FINANCIALS POWER BI DASHBOARD

PROJECT DOCUMENTATION

- **Original Work of Aditya Mishra**

Project Overview

This project presents a comprehensive financial analysis dashboard for HDFC using a sample dataset in Power BI. The dashboard analyzes income, expenses, profit trends, budget forecasts, and key expense drivers using interactive visuals and DAX measures.

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1. Dataset Description

- **File Used**: Financials Sample Data _ Randomized.xlsx
- **Source Columns**:
    - Account
    - Business Unit *(note: typo retained as per source)*
    - Currency
    - Scenario *(Actual, Budget, Forecast)*
    - Year
    - Monthly Columns: Jan to Dec (financial values)

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2. Data Cleaning & Validation

- Checked for null or missing values in critical columns.
- Verified that each month column contained numeric values.
- Corrected column types:
    - Year → String
    - Amount → Numeric
- Corrected potential typos in column names:

- e.g. Business Unit is used throughout as-is to match data source.

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3. Data Transformation (Power Query Editor)

- **Unpivoted Columns**: Transformed Jan–Dec month columns into rows to create a long-format structure.
  - Columns before: Jan, Feb, ..., Dec
  - Columns after:
    - Month (text)
    - Amount (numeric)

```
let
  Source = Excel.Workbook(File.Contents("Financials Sample Data _
Randomized.xlsx"), null, true),
  Sheet = Source{[Item="Financials",Kind="Sheet"]}[Data],
  PromotedHeaders = Table.PromoteHeaders(Sheet),
  UnpivotedMonths = Table.UnpivotOtherColumns(PromotedHeaders, {"Account",
"Businees Unit", "Currency", "Scenario", "Year"}, "Month", "Amount")
in
  UnpivotedMonths
```

- Ensured all month names were properly ordered using categorical sorting (e.g., Jan to Dec).

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4. Data Model Structure

- **Single Table Model** used (Financials)
- No external relationships or lookup tables used in this analysis.

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5. Visualizations Built

A. KPI Cards

- **Total Income**: Sum of positive Amount for Revenue accounts
- **Total Expenses**: Sum of negative Amount for Expense accounts

- **Net Profit**: Income – Expenses
- **Profit Margin %**: (Net Profit / Income) * 100

B. Top Expense Types

- Bar chart of highest expense accounts sorted descending

C. Actuals vs Budget vs Forecast

- Clustered column chart
- X-axis: Year
- Legend: Scenario
- Y-axis: Sum of Amount

D. Profit Trend

- Line chart showing Net Profit over the years

E. Decomposition Tree

- Interactive breakdown of Net Profit
- Explain by: Year → Month → Business Unit
- Metric: % of Net Profit *(contextual DAX used)*

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6. DAX Measures Used

Net Profit:

```
Net Profit =

CALCULATE(SUM(Financials[Amount]))
```

Total Income:

```
Total Income =

CALCULATE(SUM(Financials[Amount]), FILTER(Financials, Financials[Account] =
"Revenue"))
```

Total Expenses:

```
Total Expenses =

CALCULATE(SUM(Financials[Amount]), FILTER(Financials, Financials[Account] =
"Expense"))
```

Profit Margin %:

```
Profit Margin % =

DIVIDE([Net Profit], [Total Income])
```

% of Net Profit by Year:

```
% of Net Profit by Year =

DIVIDE([Net Profit], CALCULATE([Net Profit], ALLEXCEPT(Financials, Financials[Year])))
```

% of Net Profit by Month:

```
% of Net Profit by Month =

DIVIDE([Net Profit], CALCULATE([Net Profit], ALLEXCEPT(Financials, Financials[Year],
Financials[Month])))
```

% of Net Profit by Business Unit:

```
% of Net Profit by BU =

DIVIDE([Net Profit], CALCULATE([Net Profit], ALLEXCEPT(Financials, Financials[Year],
Financials[Month], Financials[Businees Unit])))
```

Contextual Metric (for Decomposition Tree):

```
% Contextual Net Profit =

VAR YearSelected = HASONEVALUE(Financials[Year])
```

```
VAR MonthSelected = HASONEVALUE(Financials[Month])
RETURN
SWITCH(
   TRUE(),
   NOT YearSelected, [% of Net Profit by Year],
   NOT MonthSelected, [% of Net Profit by Month],
   [% of Net Profit by BU]
)
```

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7. Key Insights from Dashboard

- **Total Income**: $18.85 bn
- **Total Expenses**: $15.47 bn
- **Net Profit**: $3.38 bn
- **Profit Margin**: 17.92%
- **Top Expense Driver**: Cost of Goods Sold (~$8.5 bn)
- **Profitable Year**: 2023 (highest Net Profit and margin)

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