DAX Measures Used in U.S. Financial Dashboard

This document contains all the DAX measures created and used to answer analytical questions in the project.

Age Grouping

Purpose: Categorize customers based on age into demographic groups.

```
Age Group =
    SWITCH(
        TRUE(),
        df[Age] >= 14 && df[Age] < 19, "Teen",
        df[Age] >= 19 && df[Age] < 25, "Young Adult",
        df[Age] >= 25 && df[Age] < 35, "Old Adult",
        df[Age] >= 35 && df[Age] < 45, "Old1",
        df[Age] >= 45, "Old2"
    )
```

Average Number of Credit Inquiries

```
AverageCreditInquries =
    AVERAGEX(
        FILTER(
            df,
            NOT(ISERROR(VALUE(df[Num Credit Inquries])))
        ),
        VALUE(df[Num Credit Inquries])
    )
```

LTV Score Calculation

```
LTV Score =
    VAR avg_annual_income = AVERAGE(df[Annual Income])
    VAR avg_delay_payment = AVERAGE(df[Delay from due date])
    VAR avg_amount_invested = AVERAGE(df[Amount invested monthly])
    VAR avg_monthly_balance = AVERAGE(df[Monthly Balance])
    VAR credit_score =
        CALCULATE(
            AVERAGEX(
                VALUES(df[CreditAbove StandardMix]),
                SWITCH(
                    TRUE(),
                    df[CreditAbove StandardMix] = "Good", 3,
                    df[CreditAbove StandardMix] = "Above Standard", 2,
                    df[CreditAbove StandardMix] = "Standard", 1,
                    df[CreditAbove StandardMix] = "Bad", 0
                )
            )
        )
    RETURN
        (0.3 * avg_annual_income)
        - (0.15 * avg_delay_payment)
        + (0.4 * credit_score)
        + (0.075 * avg_amount_invested)
        + (0.075 * avg_monthly_balance)
```

Promotion Assignment Based on LTV

```
Promotion =
    SWITCH(
        TRUE(),
        [LTV Score] >= 80000,
            "30% off on online purchases + home loan at 4% interest",
        [LTV Score] > 60000 && [LTV Score] < 80000,
            "15% off on online purchases + 10000 worth gift hampers",
        [LTV Score] > 50000 && [LTV Score] < 60000,
            "Any loan at 5% interest rate",
        BLANK()
    )
```

Average Loans by Age Group

Purpose: Calculate the average number of loans customer hold in each age segment.

```
Average Loans by Age =
    CALCULATE(
        AVERAGE(df[Num Bank Accounts]),
        ALLEXCEPT(df, df[Age Group])
    )
```

Credit Score Distribution by Age Group

Purpose: Analyze variation in credit score across age groups.

```
Credit Score Dist =
    CALCULATE(
        AVERAGE(df[Credit Score]),
        ALLEXCEPT(df, df[Age Group])
    )
```

Payment Behaviour Count by Credit Mix

Purpose: Count occurrences of payment behaviour per credit mix category.

```
Payment Behaviour Count =
    CALCULATE(
        COUNT(df[Payment Behaviour]),
        ALLEXCEPT(df, df[Credit Mix])
    )
```

Summary of DAX Usage

- **Age Group** → demographic segmentation
- **AverageCreditInquries** → inquiry & customer potential
- **LTV Score** → customer financial valuation
- **Promotion** → targeted offers
- **Average Loans by Age** → credit/loan trend analysis
- **Credit Score Dist** → age vs score comparison
- **Payment Behaviour Count** → risk/behaviour insights
