Power BI - lesson 16

Lesson 16: Advanced Charting Techniques

Step 1. Date Table

```
DateTable =
ADDCOLUMNS (
    CALENDARAUTO(),
    "Year", YEAR([Date]),
    "Month", FORMAT([Date], "MMM"),
    "Month Number", MONTH([Date])
)
```

Part A. Total Card Limit by Brand & Type

- Chart: **Stacked Column Chart**
- **X-Axis** → `card_brand`
- **Y-Axis** → `SUM(card_limit)`
- **Legend** → `card_type`
- **Tooltip** → `Client Count = DISTINCTCOUNT(cards_data[client_id])`

Part B. Drill-down into Monthly Trends

Create measure for **Card Count**:

```
Card Count = COUNT(cards_data[card_number])
```

- Chart: **Stacked Column Chart**
- **Axis** → Date Hierarchy (`Year → Month`) from `account_opened_date`
- **Values** → `Card Count`
- Enable **Drill Down/Up**.

Part C. Top 10 Clients by Card Limit

```
Total Card Limit = SUM(cards_data[card_limit])
```

- Chart: **Bar Chart**
- **Axis** → `client_id`
- **Values** → `[Total Card Limit]`
- **Filter** → Top 10 by `[Total Card Limit]`
- **Sort** → Descending.

Part D. Client Drill-through

1. Create a new page → add **Table visual** with fields: `client_id, card_type, card_brand, card_limit, expire_dates`.
2. In **Page Properties**, enable **Drill-through on client_id**.
3. Add slicers for **card_type** and **expire_dates (Year)**.

Part E. Expiry Heatmap

- **Matrix Visual**
  - Rows → `card_brand`
  - Columns → `Year(expire_dates)`
  - Values → `COUNT(cards_data[card_number])`

- Apply **Conditional Formatting → Background color scale** (green → yellow → red).

Part F. Dynamic Top N Card Brands

1. Create a **What-If parameter**:
   - Name: `TopN Brands`
   - Range: 1–20
   - Default: 5
2. Create measure:

```
TopN Card Limit =
VAR TopNValue = SELECTEDVALUE('TopN Brands'[TopN Brands Value], 5)
VAR TopBrands =
    TOPN (
        TopNValue,
        SUMMARIZE(cards_data, cards_data[card_brand], "TotalLimit", SUM(cards_data[card_limit])),
        [TotalLimit], DESC
    )
RETURN
IF (
    MAX(cards_data[card_brand]) IN SELECTCOLUMNS(TopBrands, "card_brand", [card_brand]),
    SUM(cards_data[card_limit])
)
```

1. Use a **Column Chart**:
   - **X-Axis** → `card_brand`
   - **Y-Axis** → `[TopN Card Limit]`.

Part G. Sales.csv Task (Average Days Between Sales)

When you import `sales.csv`, create this measure:

```
Avg Days Between Sales =
AVERAGEX (
    VALUES(sales[customer_id]),
    VAR CustomerSales =
        FILTER (
            sales,
            sales[customer_id] = EARLIER(sales[customer_id])
        )
    VAR OrderedSales =
        ADDCOLUMNS (
            CustomerSales,
            "PrevDate", CALCULATE (MAX(sales[sales_date]), sales[sales_date] <
EARLIER(sales[sales_date]))
        )
    VAR DateDiffs =
        ADDCOLUMNS (
            OrderedSales,
            "Diff", DATEDIFF([PrevDate], sales[sales_date], DAY)
        )
    RETURN AVERAGEX (FILTER(DateDiffs, NOT ISBLANK([Diff])), [Diff])
)
```