Lesson 15

Topic: Movies Analyses Dashboard with DAX
Prerequisites: All data is provided in Movies.xlsx

1. Load Movies.xls into Power BI desktop

- Open Power BI Desktop → Click **Home > Get Data > Excel**
- Browse and select Movies.xls
- Choose the appropriate sheet(s) → Click **Load**

2. Remove or impute missing values in Budget and Box Office (e.g., replace with 0 or median)

- Go to **Transform Data** (Power Query)
- Select Budget column → use **Transform > Replace Values**
    - Replace null with 0 (or use **Transform > Statistics > Median** if imputing)
- Repeat for Box Office column
- Click **Close & Apply**

3. Ensure all columns are in appropriate format

- In Power Query or Data view:
    - Set Release Date to **Date** type
    - Set Budget, Box Office, OscarWins to **Whole Number** or **Decimal Number**
    - Set Director, Genre, etc. to **Text**
- Review and adjust formats as needed
- Apply changes

4. Create a separate DATE table by using Release Date column, use Addcolumns, Calendarauto, filter functions and make sure a relationship exist in the data model view between two tables.

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

```
    "MonthNum", MONTH([Date]),
    "Quarter", "Q" & FORMAT([Date], "Q")
)
```

5. Create the following DAX measures and calculated columns to practice filter contexts, aggregations, and time intelligence.

*** Create a calculated column called profit by using Budget and Box Office column**

```
Profit = 'Movies'[Box Office] - 'Movies'[Budget]
```

***Create a calculated column to categorize movies by run time for segmentation. (Run Time < 90, Short. Run Time > 90 and < 120, Medium. Run Time > 120, Long)**

```
RunTimeCategory =
SWITCH(TRUE(),
    'Movies'[Run Time] < 90, "Short",
    'Movies'[Run Time] >= 90 && 'Movies'[Run Time] < 120, "Medium",
    'Movies'[Run Time] >= 120, "Long",
    "Unknown"
)
```

***Create measure: Total Box Office**

```
Total Box Office = SUM('Movies'[Box Office])
```

***Create measure: Average Budget**

```
Average Budget = AVERAGE('Movies'[Budget])
```

***Create measure: Average Margin**

```
Average Margin = AVERAGEX('Movies', DIVIDE('Movies'[Profit], 'Movies'[Budget]))
```

***Create measure: Total movies with Oscars**

```
Total Movies with Oscars =
CALCULATE(
    COUNTROWS('Movies'),
    'Movies'[OscarWins] <> 0
)
```

***Create measure: Top Genre by Box Office**

Top Genre by Box Office =

```
CALCULATE(
    MAXX(
        VALUES('Movies'[Genre]),
        CALCULATE(SUM('Movies'[Box Office]))
    )
)
```

***Create measure: Year-over-Year Box Office Growth**

```
YoY Box Office Growth =
VAR CurrentYear = SUM('Movies'[Box Office])
VAR PreviousYear = CALCULATE(
    SUM('Movies'[Box Office]),
    SAMEPERIODLASTYEAR('DateTable'[Date])
)
RETURN
DIVIDE(CurrentYear - PreviousYear, PreviousYear)
```

***Create measure: Average Nominations per Director**

```
Average Nominations per Director =
AVERAGEX(
    VALUES('Movies'[Director]),
    CALCULATE(AVERAGE('Movies'[Nominations]))
)
```

6. Visualization Requirements: Create an interactive dashboard with the following visuals to practice Power BI's visualization features.

Page 1: Overview Dashboard. Recommended Visuals:

Card: Total Box Office, Profit Margin, Movies with Oscars.

- **Add a Card visual**

- **Drag these measures into separate cards:**
    - **Total Box Office**
    - **Average Margin (or create a new measure Profit Margin)**
    - **Total Movies with Oscars**

Bar Chart: Total Box Office by Genre (stacked by Certificate).

- **Use a Stacked Bar Chart**
- **Axis: Genre**
- **Legend: Certificate**
- **Values: Total Box Office**

Line Chart: Box Office trend by Release Year.

- **Use a Line Chart**
- **Axis: Release Year (from your Date table)**
- **Values: Total Box Office**
- **Ensure Date table has a relationship with Release Date**

Slicer: Filter by Country and Release Date (range).

- **Add two slicers:**
    1. **Slicer for Country (set it as dropdown or list)**
    2. **Slicer for Release Date (use Between slider mode)**

KPI: YoY Box Office Growth (target: >0%).

- **Use KPI visual**
- **Indicator: YoY Box Office Growth**
- **Target: 0**
- **Trend axis: Release Year (from Date table)**

Page 2: Director Analysis. Recommended Visuals:

Treemap: Budget by Director (size by Budget, color by Oscar Wins).

- **Use Treemap visual**
- **Group: Director**
- **Values: Budget**
- **Color saturation: OscarWins**

Table: List Directors, Total Nominations, Total Oscars, Avg Nominations per Director.

- **Use Table visual**
- **Fields:**
    - **Director**
    - **Measure: Total Nominations = SUM('Movies'[Nominations])**
    - **Measure: Total Oscars = SUM('Movies'[OscarWins])**
    - **Measure: Average Nominations per Director (from earlier)**

Slicer: Filter by Genre.

- **Add Slicer visual**
- **Field: Genre**

Donut Chart: Run Time Category distribution for selected Director.

- **Use Donut Chart**
- **Legend: RunTimeCategory**
- **Values: Count of Movies or any measure**
- **Apply page filter by selected Director**

Page 3: Genre and Country Insights. Recommended Visuals:

Matrix: Genre vs. Country with Total Box Office as values.

- **Use Matrix visual**
- **Rows: Genre**

- **Columns: Country**
- **Values: Total Box Office**

Pie Chart: Share of Box Office by Certificate.

- **Use Pie Chart**
- **Legend: Certificate**
- **Values: Total Box Office**

Custom Visual: Word Cloud for Genre (requires marketplace visual).

- **Go to Visualizations pane > ... > Get more visuals**
- **Search and import Word Cloud**
- **Field: Genre**

Slicer: Filter by Run Time Category.

- **Add Slicer visual**
- **Field: RunTimeCategory (from earlier calculated column)**

Use conditional formatting in the matrix (e.g., color scale for Box Office).

- **Click on Matrix → Values dropdown (for Total Box Office)**
- **Click: Conditional formatting > Background color**
- **Choose Color scale → Adjust Min/Max colors → Click OK**