### A STRUCTURED PLAN FOR WUZZUF-JOBS-POSTING

## **✓ Step 1: Project Setup and Overview**

**Goal:** Understand what the project is about and prepare the environment.

## **OPPOSITE OF CONTRACT OF CONTR**

Build a one-page Power BI dashboard to explore job posting trends using Wuzzuf data.

#### **X** Tools Used:

- Excel (Power Query)
- Power BI Desktop
- Power BI Service (for publishing)

## **✓ Step 2: Data Preparation in Excel**

Starting with cleaning the data.



- 1. Open Excel.
- 2. Go to Data  $\rightarrow$  Get Data  $\rightarrow$  From File  $\rightarrow$  From Workbook (or CSV).
- 3. Load the Wuzzuf-Jobs-Posting.csv file.
- 4. Open **Power Query Editor**:
  - o Remove blank rows.
  - Split the "Skills" column if needed (Home → Split Column → By Delimiter).
  - o Create **Year** and **Month** columns from the **Posted Time**.

## **Detailed Walkthrough**

## **6** GOAL:

- Clean Wuzzuf job-posting data
- Extract Year/Month
- (Optionally) Split Skills

## Step 1: Open and Load the CSV File

- 1. Open Excel
- 2. Go to the **Data** tab
- 3. Click Get Data  $\rightarrow$  From File  $\rightarrow$  From Text/CSV
- 4. Select Wuzzuf-Jobs-Posting.csv and click Import
- 5. A preview will appear → Click **Transform Data** to open Power Query Editor

## **Step 2: Remove Blank Rows**

In Power Query:

- 1. Scroll through the data preview and look for rows where **most or all columns** are null
- 2. Go to Home tab  $\rightarrow$  Remove Rows  $\rightarrow$  Remove Blank Rows

### **Step 3: Split the "Skills" Column**

In order to analyze skills later:

- 1. Find the column named Skills
- 2. Click on the **Skills** column header
- 3. Go to Home  $\rightarrow$  Split Column  $\rightarrow$  By Delimiter
- 4. Choose Comma  $(,) \rightarrow \text{Click OK}$
- 5. This will create multiple columns like Skills.1, Skills.2, etc.

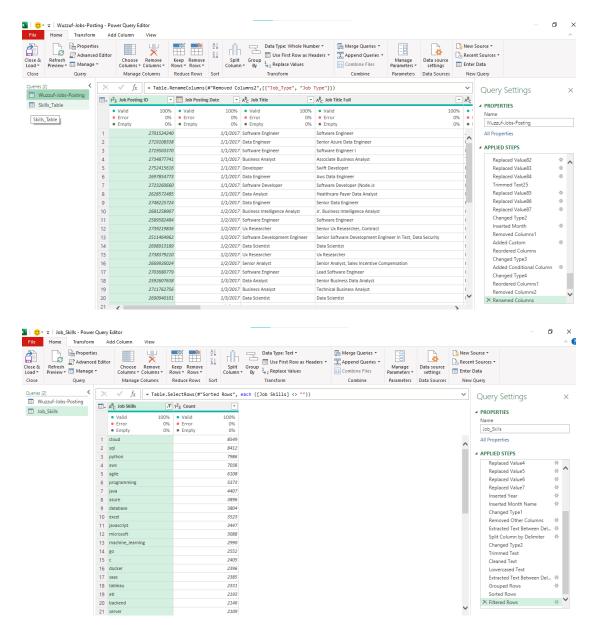
## ( Step 4: Extract Year and Month from Posted Time

- 1. Find the column named **Posted Time** (or similar)
- 2. Select the column
- 3. Go to Add Column  $\rightarrow$  Date  $\rightarrow$  Year  $\rightarrow$  Year
  - → This will create a new column called **Year**
- 4. Then go to Add Column  $\rightarrow$  Date  $\rightarrow$  Month  $\rightarrow$  Name of Month
  - → This will create a column called **Month Name**
- 5. Also, do **Month**  $\rightarrow$  **Month** to get the numeric month (1–12)

## Step 5: Load Cleaned Data

- 1. Once done, go to Home → Close & Load To...
- 2. Select:

- Only Create Connection
- Check the box: Add this data to the Data Model
- 3. Click OK



# **✓ FULL CLEANING PROCESS IN POWER QUERY (Step by Step)**

## Step 0: Check for Header Row Issue

- 1. Go to Home  $\rightarrow$  Use First Row as Headers
  - o If your headers already look good, skip this.
- 2. If the first column has no name (e.g., Column1), rename it to something meaningful like "Job Title"

## **Step 1: Remove Completely Blank Rows**

- 1. Go to Home  $\rightarrow$  Remove Rows  $\rightarrow$  Remove Blank Rows
- 2. This removes rows where *all* cells are empty.

## **Step 2: Remove Rows with Missing Critical Info**

#### 1. Job Title

- Click the filter icon in the **Job Title** column (or first column).
- Uncheck **null** and **blanks**
- Click OK

#### 2. Company Name

• Repeat same filter → uncheck **null** and blanks

#### 3. Company Industry

• Repeat same filter → uncheck **null** and blanks

#### 4. Company Size

• Repeat same filter → uncheck **null** and blanks

## **Step 3: Handle Salary Columns (Min/Max Pay)**

1. For **Min Salary**:

Right-click column → Replace Values → Replace null with "0"

2. For **Max Salary**:

Right-click column → Replace Values → Replace null with "0"

## Step 4: Handle "Pay Rate" and "No. of Applicants"

• Right-click column → Replace Values → Replace null with "Unknown"

## Step 5: Load Clean Data

- 1. Go to Home → Close & Load To...
- 2. Choose:
  - **o** Only Create Connection
  - Add this data to the Data Model
- 3. Click OK

# **Step-by-Step Guide: Build a Skills Table in Power Query**

## GOAL:

Create a **separate Skills Table** where each row = one skill for one job posting.

Assuming still in **Power Query Editor**, and the main table is loaded and cleaned:

## **Step 1: Duplicate the Main Query**

- 1. In the Queries pane (left side), right-click your cleaned main table
- 2. Select **Duplicate**
- 3. Rename the duplicated query to **Skills Table**

## **Step 2: Keep Only Needed Columns**

In the duplicated "Skills Table" query:

- 1. Select all columns **except**:
  - o Job Title (or another unique job identifier)
  - o Company Name
  - o Skills
- 2. Right-click the selected columns  $\rightarrow$  **Remove Columns**
- ✓ We should now have just:
  - Job Title
  - Company Name
  - Skills

## Step 3: Split Skills Column by Delimiter

- 1. Select the **Skills** column
- 2. Go to Home  $\rightarrow$  Split Column  $\rightarrow$  By Delimiter
- 3. Choose **Comma (,)** and select:
  - Split into Rows (very important!)
- 4. Click OK
- Now, each row contains one Skill per job posting.

## **Step 4: Clean Up**

- 1. Select the **Skills** column
- 2. Go to Transform  $\rightarrow$  Format  $\rightarrow$  Trim
  - o This removes leading/trailing spaces
- 3. (Optional) Remove any rows where Skill is null or blank
  - o Filter → Uncheck nulls or blanks

## **Step 5: Create a Unique Job ID**

To help relate this back to the main Jobs table later:

- 1. Go to Add Column → Custom Column
- 2. Name it JobID and use a formula like:

```
[Job Title] & "-" & [Company Name]
```

This will act as a key for relationships in Power BI.

## Step 6: Load the Skills Table

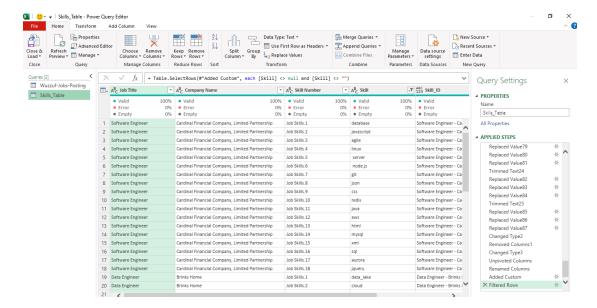
- 1. Go to Home → Close & Load To...
- 2. Select:
  - o Only Create Connection
  - **Add this data to the Data Model**
- 3. Click OK

## **Final Result:**

Now we have two clean tables:

- Wuzzuf-Jobs-Posting Table: Main data
- Skills Table: One skill per row, related by Job Title + Company

Later in Power BI, we'll create a relationship between these tables.



## **Step-by-Step:** Extract Year & Month from Posted Time

Let's move Extract Year and Month from the Posted Time column using Power Query in Excel.



Add two new columns:

- Year
- Month (either name or number)

Make sure we are in the **Power Query Editor**, and the Posted Time column is present and in **date format**.

## Step 1: Select the Posted Time Column

1. In Power Query, click on the Posted Time column

- o If it's not named clearly, rename it to Posted Time by double-clicking the header.
- 2. Make sure it is in **Date format**:
  - o Go to Transform  $\rightarrow$  Data Type  $\rightarrow$  Date

## Step 2: Add Year Column

- 1. With Posted Time selected, go to:
  - $\circ$  Add Column  $\rightarrow$  Date  $\rightarrow$  Year  $\rightarrow$  Year
- ✓ This creates a new column called Year.

## Step 3: Add Month Columns

You can choose to add either **Month Number** or **Month Name** — or both.

#### **Option A: Month Name**

- Add Column  $\rightarrow$  Date  $\rightarrow$  Month  $\rightarrow$  Name of Month
  - o Result: "January", "February", etc.

#### **Option B: Month Number**

- Add Column  $\rightarrow$  Date  $\rightarrow$  Month  $\rightarrow$  Month
  - o Result: 1–12

Rename the new column to Month Name or Month Number for clarity.

## **✓** Step 4: Optional – Extract Quarter or Day

If needed for later analysis:

- **Quarter**: Add Column → Date → Quarter → Quarter of Year
- **Day**: Add Column  $\rightarrow$  Date  $\rightarrow$  Day  $\rightarrow$  Day

## Step 5: Apply and Load

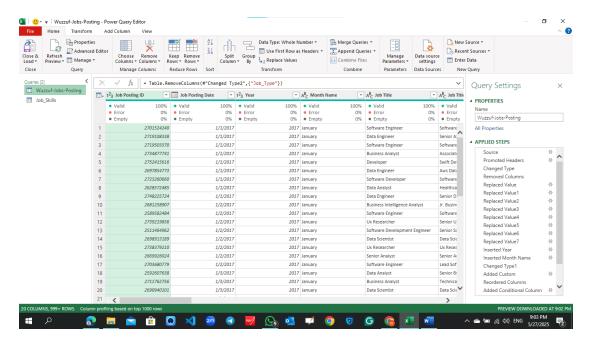
- 1. Click Home → Close & Load To...
- 2. Choose:
  - Only Create Connection

- 3. Click OK

## Final Result

The table now has:

- Year
- Month Name Or Month Number
- Clean Posted Time (in date format)



- **✓** Step 3: Load Data into Power BI
- **✓** Part 1: Save Your Cleaned Queries as an Excel File

Once data is cleaned and transformed:

- Step 1: Save Queries to Excel File
  - 1. In Power Query, click Home  $\rightarrow$  Close & Load To...
  - 2. In the pop-up:
    - Choose Only Create Connection
    - Check Add this data to the Data Model
  - 3. Repeat for both tables:
    - Main Table (e.g., Wuzzuf-Jobs-Posting)
    - Skills Table

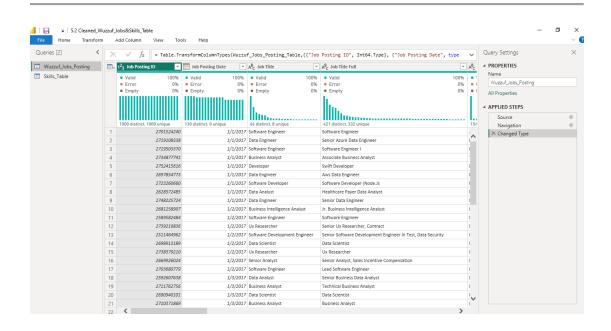
- 4. After this, you're back in Excel. Now:
  - o Save the Excel file (e.g., Cleaned\_Wuzzuf\_Data.xlsx) to a known location
- We now have a clean Excel file with your queries added to the **Data Model**.

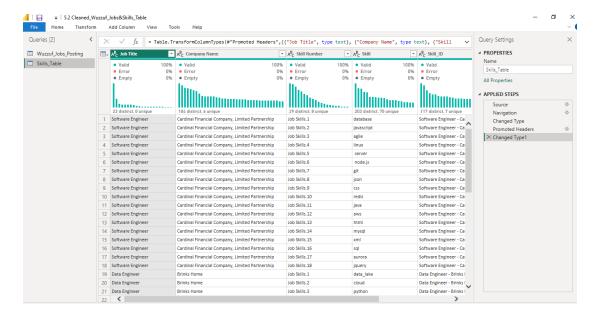
## **✓** Part 2: Load Cleaned Excel Data into Power BI

Now open Power BI Desktop:

## Step 1: Import Data

- 1. Click Home  $\rightarrow$  Get Data  $\rightarrow$  Excel
- 2. Select your cleaned Excel file (Cleaned Wuzzuf Data.xlsx)
- 3. In the **Navigator window**:
  - o All the **tables or named queries** are loaded to the Data Model
  - o Select:
    - Main Wuzzuf-Jobs-Posting table
    - Skills table
- 4. Click Load

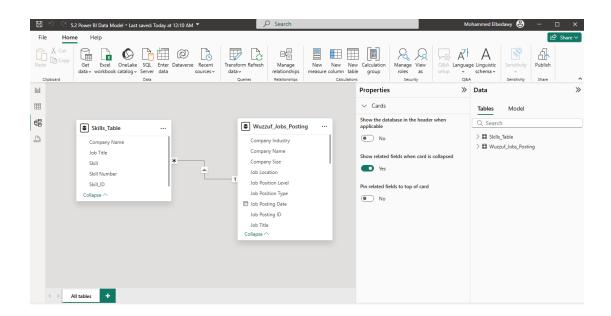




### Step 2: Create Relationships

If you loaded both **Wuzzuf-Jobs-Posting** and **Skills** tables:

- 1. Go to **Model View** (left-side panel with table icon)
- 2. Drag a line between:
  - o Job Title + Company Name from Wuzzuf-Jobs-Posting Table
  - o to Job Title + Company Name in Skills Table
- This connects both tables and enables interactive filtering across them.



## Step 4: Build the Dashboard (5 Visuals)

Create the following visuals on one Power BI page:

Visual Type	Shows	
KPI Card	Total Job Postings	
<b>Clustered Column</b>	Postings by Category	
Pie Chart	Breakdown by Job Type	
Map	Geo-distribution (Country/City)	
Line Chart	Postings over Time (Month)	

## STEP-BY-STEP: Create Measures in Power BI



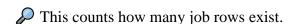
## **MEASURE 1: Total Postings**

## **✓** Steps:

- 1. In the Fields pane, right-click on Wuzzuf-Jobs-Posting table (the main one)
- 2. Choose New Measure
- 3. Paste this DAX formula:

```
DAX
Total Postings = COUNTROWS('Jobs')
```

4. Press Enter





## **MEASURE 2: Average Experience**

From the numeric column Years of Experience

## Steps:

- 1. Right-click on the Wuzzuf-Jobs-Posting table → New Measure
- 2. Paste:

```
Avg Experience = AVERAGE('Jobs'[Years of Experience Numeric])
```

3. Press Enter

 $\bigcirc$  Now format this to show 1 decimal (Modeling tab  $\rightarrow$  Format)



## **★** MEASURE 3: % Remote vs On\_Site

From column Job Type with values: "Remote", "On Site", "Not specified"

## **Use M Code (Power Query Formula Language)**

using a custom column with M code:

```
powerquery
= if Text.Contains([Job Title Additional Info], "Remote") then
"Remote"
  else if Text.Contains([Job Title Additional Info], "REMOTE") then
"Remote"
  else if Text.Contains([Job Title Additional Info], "Onsite") then
"On Site"
 else if Text.Contains([Job Title Additional Info], "Not Specified")
then "Not Specified"
 else "Others"
```

## Create 3 Measures:

#### A. Total Remote Jobs

```
DAX
Remote Jobs = CALCULATE(COUNTROWS('Jobs'), 'Jobs'[Job Type] =
"Remote")
```

#### B. % Remote

DAX

```
% Remote = DIVIDE([Remote Jobs], [Total Postings], 0)
```

#### C. We can repeat similarly for On\_Site or Not\_Specified

 $\bigcirc$  Tip: Format \( \) Remote as a percentage (Modeling  $\rightarrow$  Format  $\rightarrow$  Percentage)



## **★ VISUAL 1: KPI Card** − Total Job Postings

## **✓** Steps:

- 1. In **Report View**, click on a blank area
- 2. From the **Visualizations pane**, click the **Card** visual (big number display)
- 3. Drag this field into the **Values**:

- o Job Title
- 4. Power BI auto-summarizes as Count

## **Optional:**

• Rename the visual title: "Total Job Postings"

## **VISUAL 2: Clustered Column Chart – Postings** by Category

- Steps:
  - 1. Click a blank area → choose Clustered Column Chart
  - 2. Set:
    - o **Axis**: Job Title
      - o Values: Total Posting (Count)
- ✓ This shows how many jobs exist per category.

## WISUAL 3: Pie Chart – Breakdown by Job Type

- **✓** Steps:
  - 1. Click a blank area  $\rightarrow$  select **Pie Chart**
  - 2. Set:
    - o Legend: Job Position Type
    - o Values: Total Posting (Count)
- Shows proportions of each job position type.

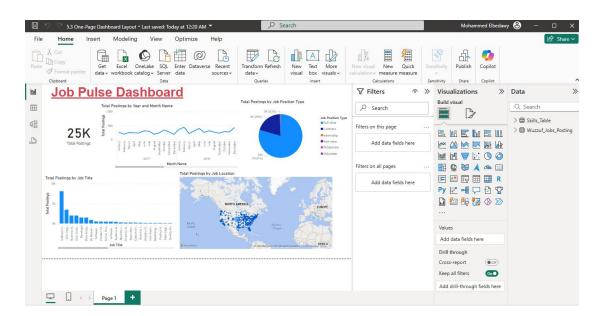
## **◯** VISUAL 4: Map – Geo-distribution by Country or City

- Steps:
  - 1. Click a blank area  $\rightarrow$  select **Map** visual (or Filled Map)
  - 2. Set:
    - o **Location**: Country (or City)
    - o Size: Total Posting (Count)

- 3. As the map doesn't render, go to:
  - o Model View → Data Category → set Country as Country
- Displays job posting concentration on a map.

## **VISUAL 5: Line Chart – Postings Over Time**

- Steps:
  - 1. Click a blank area → select Line Chart
  - 2. Set:
    - Axis: Month or Posted Time (or use both Year + Month in a hierarchy)
    - o Values: Total Posting (Count)
- ✓ This shows how job postings trend over time.



- **✓ Step 5: Add Filters & Slicers**
- **©** GOAL: Add Interactive Slicers and a Date Filter to Dashboard

## **✓** STEP-BY-STEP: ADD SLICERS IN POWER BI

## Step 1: Add a Slicer for Career Level

- 1. Go to **Report View**
- 2. Click an empty space on the report
- 3. In the **Visualizations** pane, click the **Slicer** visual (looks like a filter icon )
- 4. From the **Fields pane**, drag in Career Level (e.g., Entry Level, Senior, etc.)
- 5. Power BI will create a slicer with a list of career levels
- 6. We can:
  - o Resize the slicer
  - Use the dropdown arrow in top-right to switch between List,
     Dropdown, etc.
- Tip: Rename the slicer title to "Filter by Career Level"
   Go to Format → Slicer header → Title: On

## Step 2: Add a Slicer for Work Mode

#### Repeat the same steps:

- 1. Click a blank area on your report
- 2. Insert another **Slicer** visual
- 3. Drag in the Work Mode field (e.g., Remote, On\_Site, Not\_Specified)
- 4. Customize the title: "Filter by Work Mode"

## Step 3: Add a Time Filter (Month-Year Slicer)

#### We can use:

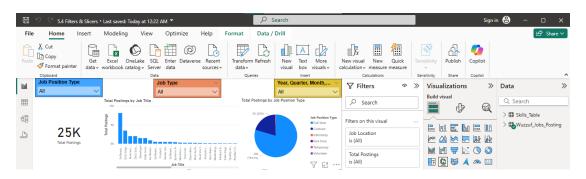
- A **slicer visual** if you want it to be visible on the report
- The **filter pane** for a cleaner UI

#### **Option A: Visible Slicer for Month-Year**

- 1. Click a blank area  $\rightarrow$  insert a **Slicer**
- 2. Drag in Posted Time (or a combined Month-Year column if you created one)
- 3. Power BI automatically treats it as a date hierarchy
- 4. To simplify it:
  - o Click the dropdown in the slicer → choose **Between** for a range selector
  - o OR use **Relative Date** for "Last 1 month", "Last 12 months", etc.

### **Option B: Use Filter Pane (Sidebar)**

- 1. Click on the **empty space** (nothing selected)
- 2. On the **right pane** (Filters on this page):
  - Click "Add data field here"
  - o Drag in Posted Time
- 3. Change filter type to:
  - Relative date
  - Advanced filter
  - Between two dates
- Now users can filter by time using the side panel without taking up dashboard space.



## **✓ Step 6: Evaluation (Optional/Bonus)**

Track user interaction metrics like:

- Number of actions per minute
- Session duration

(We'll build simple DAX measures for this.)

- This part simulates tracking **user interactions** with your dashboard and calculating performance metrics like:
  - Total Interactions
  - Session Duration
  - Actions Per Minute

## **✓** Step-by-Step Plan to Simulate Dashboard Evaluation

Note: Power BI doesn't automatically track user clicks unless you use Power BI Service with audit logs or external tools. So we'll simulate user activity manually in a clean and structured way, then visualize it.

# **STEP 1:** Create a Table of Simulated User Interaction Logs

We'll create a manual table to simulate 3 users interacting with the dashboard.

## 🔁 A. Create it in Power BI

- 1. Go to Home  $\rightarrow$  Enter Data
- 2. Name the table: UserInteractionLog
- 3. Add the following **columns and rows**:

UserID	StartTime	EndTime	TotalInteractions
U001	21/05/2025 18:00	21/05/2025 18:10	25
U002	21/05/2025 18:05	21/05/2025 18:20	30
U003	21/05/2025 18:15	21/05/2025 18:35	40

Format StartTime and EndTime as Date/Time

Click **Load** to add it to your model.

## STEP-BY-STEP: Build a User Session Table Visual in Power BI

## Step 1: Create Calculated Columns and Measures

#### A. Session Duration in Minutes

Go to **Model view**, select your table, and click **New column**:

DAX

SessionDurationMinutes = DATEDIFF('UserInteractionLog'[StartTime],
'UserInteractionLog'[EndTime], MINUTE)

#### **B.** Actions Per Minute

Now create a measure:

- 1. Right-click your table  $\rightarrow$  **New Measure**
- 2. Paste:

DAX

Now we're ready to build the visual.

## Step 2: Add a Table Visual to the Dashboard

- 1. In **Report view**, click a blank space on the canvas
- 2. Click the **Table** visual ( in the Visualizations pane

## Step 3: Add Fields to the Table

From the **Fields pane**, drag into the **Values** section of the Table visual:

- UserID
- StartTime
- EndTime
- TotalInteractions
- SessionDurationMinutes
- ActionsPerMinute
- We'll now see a row for each user with complete session metrics.

# **STEP-BY-STEP:** Create a Bar Chart for APM per User



Create a bar chart where:

- X-axis = UserID
- **Y-axis** = ActionsPerMinute (APM)

## Step 1: Add a Clustered Bar Chart

- 1. In **Report view**, click on a blank space
- 2. From the **Visualizations pane**, click the **Clustered Bar Chart** icon (horizontal bars)

## Step 2: Assign the Data Fields

- Drag UserID to the **Y-axis** (or "Category")
- Drag ActionsPerMinute to the X-axis (or "Values")
- Now we'll see bars for each user showing how many actions per minute they performed.

## Step 4: Format the Chart

Click the chart  $\rightarrow$  open the **Format pane** (paint roller icon)  $\rightarrow$  and adjust:

- **Title** → On → Title text: "Actions Per Minute by User"
- **Data labels**  $\rightarrow$  On (to show the actual APM numbers on bars)
- Axis font sizes → Adjust for readability

## **STEP-BY-STEP:** Create a Card Visual for Avg APM



Create a Card that shows:

**Average Actions Per Minute** 

## Step 1: Create a Measure for Average APM

Assuming each row in UserInteractionLog table is one user session:

- 1. Go to the **Model or Report View**
- 2. Click on the UserInteractionLog table
- 3. Click New Measure
- 4. Paste the following DAX formula:

```
DAX
```

```
AverageAPM =
AVERAGEX(
    'UserInteractionLog',
    DIVIDE('UserInteractionLog'[TotalInteractions],
'UserInteractionLog'[SessionDurationMinutes], 0)
)
```

This calculates the APM for each user session, then returns the average across all sessions.

## Step 2: Insert a Card Visual

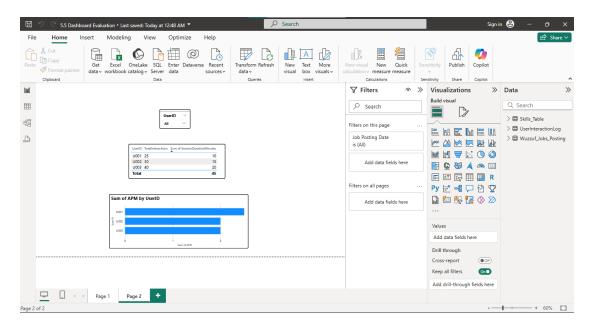
- 1. In **Report View**, click a blank space on the canvas
- 2. From the **Visualizations pane**, click the **Card** visual ( )
- 3. In the Fields pane, drag in the new measure: AverageAPM

## Step 3: Format the Card

- 1. Click the Card  $\rightarrow$  go to the **Format pane** (paint roller icon)
- 2. Set:
  - **Title**: On  $\rightarrow$  "Average APM"
  - Font Size: Increase value text for visibility
  - Category Label: On or Off as needed

## **Optional Formatting Tips**

- Round to 1 decimal:
  - Select the measure  $\rightarrow$  go to **Modeling tab**  $\rightarrow$  Format  $\rightarrow$  1 decimal place
- Add a border or background color to help the card stand out



## **STEP-BY-STEP: DESIGN A CLEAN CANVAS LAYOUT**

## **✓** GOAL: Attractive Dashboard Layout (One-Page Design)

We'll organize and format our visuals using layout best practices so everything feels aligned, grouped, and easy to read.

## Step 1: Set the Page Size

Let's make sure canvas fits everything well.

- 1. Click on a **blank space** on the canvas
- 2. Go to the Visualizations pane  $\rightarrow$  Format pane (paint roller icon)
- 3. Under Page Information, click  $\rightarrow$  Canvas settings
- 4. Set:
  - o **Page size**  $\rightarrow$  16:9
  - o Background color  $\rightarrow$  light gray (#F4F4F4) to make visuals pop

## Step 2: Add a Header or Title

1. Click Insert  $\rightarrow$  Text box

- 2. Type the dashboard title:
  - " Job Pulse Dashboard"
- 3. Style it:
  - o Font size: 20–28
  - o Font: Segoe UI
  - o Align left
  - Add underline or background if desired

## Step 3: Align & Resize Visuals

- 1. Select visuals  $\rightarrow$  Use **Align** and **Distribute** tools:
  - o Hold Ctrl to select multiple
  - o Go to Format tab → Align → Align Top / Distribute Horizontally
- 2. Make sure all visuals are:
  - o Same height/width if grouped
  - Even spacing between them
  - o Charts don't overlap

## Step 4: Theme & Colors

- 1. Go to View tab  $\rightarrow$  Themes
- Creating a Light/Dark Mode toggle using Bookmarks + the Selection Pane
   — all on a single page in Power BI.

## **GOAL:**

Build a Light/Dark Mode toggle on one page using:

- **Bookmarks**: to save which visuals are visible
- Selection pane: to control visibility

## **STEP-BY-STEP GUIDE**

## **STEP 1: Duplicate Visuals for Both Themes**

- 1. **Select all visuals** on your page (Ctrl + click)
- 2. Copy  $\rightarrow$  Paste

- 3. Now we have **two copies** of each visual
  - o One group will be for Light Mode
  - o One group will be for **Dark Mode**

## **STEP 2: Style the Visual Groups**

#### A. Group 1: Light Mode Visuals

- Set:
  - o Background: White
  - o Text: **Dark** (e.g., #333)
  - o Borders: Light gray

### **B. Group 2: Dark Mode Visuals**

- Set:
  - o Background: **Dark** (e.g., #2B2B2B)
  - o Text: **Light** (e.g., White or #E9E9E9)
  - o Borders: Dark gray or none

## STEP 3: Rename and Organize with the Selection Pane

- 1. Go to View  $\rightarrow$  Selection Pane
- 2. Rename visuals clearly:
  - o KPI Card Light
  - o KPI Card Dark
  - o Line Chart Light
  - o Line Chart Dark
- 3. Hide all Dark visuals for now (click the icon)

## **STEP 4: Create Bookmarks**

- 1. Go to View → Bookmarks Pane
- 2. Add a bookmark for Light Mode:
  - o Click "Add"  $\rightarrow$  Rename: Light Mode
  - Ensure only Light visuals are visible
  - In bookmark options (··· menu):
    - **Data**: Unchecked
    - **Display**: Checked
    - Current page: Checked
- 3. Add a bookmark for Dark Mode:
  - First, in **Selection Pane**, hide all Light visuals and show all Dark visuals

- o Click "Add" → Rename: Dark Mode
- o Bookmark options: Same as above

## Step 7: Publish to Power BI Service

- 1. Click File  $\rightarrow$  Publish  $\rightarrow$  To Power BI
- 2. Sign in to your **Power BI account** (use Microsoft 365/student email)
- 3. Choose your workspace (e.g., "My Workspace")
- 4. After upload, go to https://app.powerbi.com
- 5. Open your dashboard and:
  - o Use **Full Screen** mode (button top-right)
  - o Interact live: slicers, drilldowns, filters all work

https://app.powerbi.com/view?r=eyJrIjoiMTVlYmRiYTgtM2M5MC00Njg0LWI1ZDYtYTE3MDRkMTU2MTBmIiwidCI6Ijk3NjE2YzAzLTZkZDAtNDBhNS04NGVlLWJmZTdmZjdiMjcwNyJ9

