**Documentation: Calculating Q1, Q2, Q3, Q4, and Week Number-Based Counts for Birthdays in Power BI**

**Objective:**

This guide explains how to create DAX columns and measures in Power BI to categorize birthdays into quarters (Q1, Q2, Q3, Q4) and calculate the week number based on the birthday date. It also covers how to calculate counts based on these categories.

**Assumptions:**

* Your dataset contains a **Birthday** column with the member’s date of birth.
* The table is named **dataset\_with\_data**.
* We will create a new column for **Quarter** and a new measure to count birthdays for each quarter and week number.

**Step 1: Categorizing Birthdays into Quarters (Q1, Q2, Q3, Q4)**

To categorize birthdays based on the month into **Q1**, **Q2**, **Q3**, and **Q4**, create a new column using the SWITCH function in DAX.

1. Go to the **Modeling** tab in Power BI.
2. Click on **New Column**.
3. Enter the following DAX formula:

Quarter =

SWITCH(

TRUE(),

MONTH('dataset\_with\_data'[Birthday]) IN {1, 2, 3}, "Q1",

MONTH('dataset\_with\_data'[Birthday]) IN {4, 5, 6}, "Q2",

MONTH('dataset\_with\_data'[Birthday]) IN {7, 8, 9}, "Q3",

MONTH('dataset\_with\_data'[Birthday]) IN {10, 11, 12}, "Q4",

"Unknown"

)

**Explanation:**

* The MONTH() function extracts the month from the **Birthday** column.
* The SWITCH() function assigns a quarter label (Q1, Q2, Q3, or Q4) based on the month number.
* "Unknown" is the default value in case no condition is met, though it should not occur for valid dates.

**Step 2: Calculating the Week Number for Each Birthday**

To calculate the week number for each birthday, create another new column using the WEEKNUM() function.

1. Go to the **Modeling** tab in Power BI.
2. Click on **New Column**.
3. Enter the following DAX formula:

Week Number = WEEKNUM('dataset\_with\_data'[Birthday], 2)

**Explanation:**

* The WEEKNUM() function returns the week number of the given date. The 2 argument specifies that the week starts on Monday.
* This calculation will give you the week number for each member's birthday.

**Step 3: Counting Birthdays in Each Quarter**

To count the number of birthdays in each quarter, create a **measure** that aggregates the data by the newly created **Quarter** column.

1. Go to the **Modeling** tab in Power BI.
2. Click on **New Measure**.
3. Enter the following DAX formula:

Count by Quarter =

COUNTROWS(

FILTER(

'dataset\_with\_data',

'dataset\_with\_data'[Quarter] = "Q1"

)

)

**Explanation:**

* The COUNTROWS() function counts the number of rows in the filtered dataset.
* The FILTER() function filters the data to include only rows where the **Quarter** column is "Q1".
* You can replicate this formula for **Q2**, **Q3**, and **Q4** by replacing "Q1" with the respective quarter.

**Step 4: Counting Birthdays for Each Week Number**

To count the number of birthdays that fall into each week number, create another **measure** using the **Week Number** column.

1. Go to the **Modeling** tab in Power BI.
2. Click on **New Measure**.
3. Enter the following DAX formula:

Count by Week Number =

COUNTROWS(

FILTER(

'dataset\_with\_data',

'dataset\_with\_data'[Week Number] = 15 -- Replace with desired week number

)

)

**Explanation:**

* The COUNTROWS() function counts the number of rows for the given **Week Number**.
* The FILTER() function filters the dataset to include only rows with the specified **Week Number**.
* In this example, the formula filters by **Week 15**. You can replace 15 with any week number as required.

**Step 5: Visualizing the Results in Power BI**

To display the results:

1. **Drag and drop the Quarter or Week Number column** to your report canvas.
2. **Add the Count by Quarter or Count by Week Number measure** to the **Values** section of your visual (e.g., table, bar chart, etc.).
3. Apply **filters** or **slicers** to dynamically analyze the counts for specific quarters or weeks.

**Example Visualizations:**

* **Bar Chart**: Show the number of birthdays per quarter or per week.
* **Table**: Display the count of birthdays for each quarter or week in tabular form.
* **Slicer**: Allow users to filter and see birthdays for specific quarters or weeks.

**Conclusion**

By using the above steps, you can categorize birthdays into **quarters (Q1, Q2, Q3, Q4)** and calculate the **week number** for each birthday in Power BI. You can also use DAX to dynamically count birthdays based on the quarter or week number, and visualize this data in various ways.