# Canadian Disaster Database

# Power BI - Visual

# Event Frequency:

## Task 1: Create event frequency decomposition tree graph

* Double click on “Page 1” tab and type “Frequency”
* Under “Frequency” tab, click on “Decomposition Tree” under Visualization
  + Drag “EVENT ID” from “Lookup\_disaster” into “Analyze” field (more on this later)
  + Drag the following column names from “Lookup\_disaster” to “Explain by” field, and make sure they are in the right sequence
    - “EVENT CATEGORY”
    - “EVENT GROUP”
    - “EVENT SUBGROUP”
    - “EVENT TYPE”
  + Go to the chart and click on “+” sign, then click on “High value”
* Adjust the chart size and location in the page

## Task 2: Create event frequency VS year trend graph

* Click on any blank space in “Frequency” tab, then click on “Line chart” under Visualization
* Drag “EVENT START DATE” from “Fact\_table” to the “Axis” field
* Drag “EVENT ID” from “Fact\_table” to the “Values” field
* Click on the downward arrow right to “Count of EVENT ID” and select “Count (Distinct)”
* If the data is too sparse on the date level, change the aggregation to year level
  + Remove “EVENT START DATE” from the “Axis” field
  + Drag “Year” from “DimDate”
* Adjust the chart size and location in the page

## Task 3: Create event frequency VS seasonality graph

* Click on any blank space in “Frequency” tab, then click on “Stacked column chart” under Visualization
* Drag “Quarter” and “MonthNo” from “DimDate” to the “Axis” field
* Drag “EVENT ID” from “Fact\_table” to the “Values” field
* Click on the downward arrow right to “Count of EVENT ID” and select “Count (Distinct)”
* Click on “…” above the chart
  + Select “Sort ascending”
  + Select “Sort by” “Quarter”
* Adjust the chart size and location in the page

## Task 4: Create event frequency VS province graph

* Click on any blank space in “Frequency” tab, then click on “Filled map” under Visualization
* Drag “Province Name” from “Lookup\_province” to the “Axis” field (“Affected\_Province\_ID” from “Fact\_table” cannot be identified for all provinces)
* Add color for each province
  + Click “Format” under “Data Colors”, then click on “fx” icon
    - “Format by”: “Color scale”
    - “Based on field”: “EVENT ID” under “Fact\_table”
    - “Summarization”: “Count (Distinct)”
    - Click “OK”

## Task 5: Create Period over Period comparison

* Click on any blank space in “Frequency” tab, then click on “Slicer” under Visualization
  + Drag “Decade” from “DimDate” to the “Field”
* Click on any blank space in “Frequency” tab, then click on “Card” under Visualization
  + Drag “EVENT ID” from “Lookup\_disaster” to the “Field”
  + Click on the downward arrow right to “First EVENT ID” and select “Count”
* Select any value in the “Decade” slicer, you should observe that the line chart, bar chart and map chat are dynamically loaded, but the numbers in card and decomposition tree stay the same.
  + Solution 1: Use “EVENT ID” from “Fact\_table” and make sure using “Count (Distinct)” for the card and decomposition tree
  + Solution 2: Create a new measure and use it in all charts (Use this approach for period over period comparison as well)
    - Under “Home” click on “New measure”
    - Enter “Event Count CP = DISTINCTCOUNT(Fact\_table[EVENT ID])”
    - Change all the graphs using “EVENT Count CP”
* Copy and paste the “Event Count CP” card
  + Under “Home” click on “New measure”
  + Enter “Event Count PP = CALCULATE(DISTINCTCOUNT(Fact\_table[EVENT ID]), DATEADD(DimDate[Date],-10 ,YEAR))”
  + Replace “Field” with “Event Count PP”
* Copy and paste the “Event Count CP” card
  + Under “Home” click on “New measure”
  + Enter “Event Count P/P = ([Event Count CP]-[Event Count PP])/[Event Count PP]”
  + Select “Percentage” and set to 1 digit after decimal place
  + Replace “Field” with “Event Count P/P”
* Repeat the above steps for “Affected Province Count” for CP, PP and P/P
  + when creating measures, use “Affetced\_Province\_ID” instead of “EVENT ID”
    - Province Count CP = DISTINCTCOUNT(Fact\_table[Affected\_Province\_ID])
    - Province Count PP = CALCULATE(DISTINCTCOUNT(Fact\_table[Affected\_Province\_ID]), DATEADD(DimDate[Date],-10,YEAR))
    - Province Count P/P = ([Province Count CP]-[Province Count PP])/[Province Count PP]

# Event Fatality:

## Task 6: Create dashboard which allows switching metrics

* Right click “Frequency” tab and select “Duplicate page”
  + Double click on the copied page and rename it as “Combined”
* Follow Task 5 to create “Fatality Sum” for CP, PP and P/P
  + Fatality Sum CP = CALCULATE(SUM(Fact\_table[Fatalities\_by\_Province]))
  + Fatality Sum PP = CALCULATE(SUM(Fact\_table[Fatalities\_by\_Province]), DATEADD(DimDate[Date],-10 ,YEAR))
  + Fatality Sum P/P = ([Fatality Sum CP] - [Fatality Sum PP]) / [Fatality Sum PP]
* Follow Task 5 to create “Fatality Avg” for CP, PP and P/P
  + Fatality Avg CP = [Fatality Sum CP]/[Event Count CP]
  + Fatality Avg PP = [Fatality Sum PP]/[Event Count PP]
  + Fatality Avg P/P = ([Fatality Avg CP] - [Fatality Avg PP])/[Fatality Avg PP]
* Under “Home” window, click on “Enter data”
  + Double click on “Column 1” and rename it to “Measure”
  + Click on blank column, double click on “Column 2” and rename it to “Index”
  + Enter “Event Count” “1” to the first row
  + Enter “Fatality Sum” “2” to the second row
  + Enter “Fatality Avg” “3” to the second row
  + Put “Measure Selection” as “Name”
  + Click “Load”
* Click on any black space in the canvas, then select “slicer” in the “Visualizations” window
  + Drag “Measure” from “Measure Selection” table to “Field”
* Link measure slicer to all the other graphs
  + Follow Task 5 to create “Measure Selection” for CP, PP and P/P

Measure Selection CP = IF(ISCROSSFILTERED('Measure Selection'[Measure]),

SWITCH(TRUE(),

VALUES('Measure Selection'[Index]) = 1, [Event Count CP],

VALUES('Measure Selection'[Index]) = 2, [Fatality Sum CP],

VALUES('Measure Selection'[Index]) = 3, [Fatality Avg CP],

BLANK()),BLANK())

Measure Selection PP = IF(ISCROSSFILTERED('Measure Selection'[Measure]),

SWITCH(TRUE(),

VALUES('Measure Selection'[Index]) = 1, [Event Count PP],

VALUES('Measure Selection'[Index]) = 2, [Fatality Sum PP],

VALUES('Measure Selection'[Index]) = 3, [Fatality Avg PP],

BLANK()),BLANK())

Measure Selection P/P = IF(ISCROSSFILTERED('Measure Selection'[Measure]),

SWITCH(TRUE(),

VALUES('Measure Selection'[Index]) = 1, [Event Count P/P],

VALUES('Measure Selection'[Index]) = 2, [Fatality Sum P/P],

VALUES('Measure Selection'[Index]) = 3, [Fatality Avg P/P],

BLANK()),BLANK())

* + Change all the graphs using “Measure Selection” for CP, PP and P/P