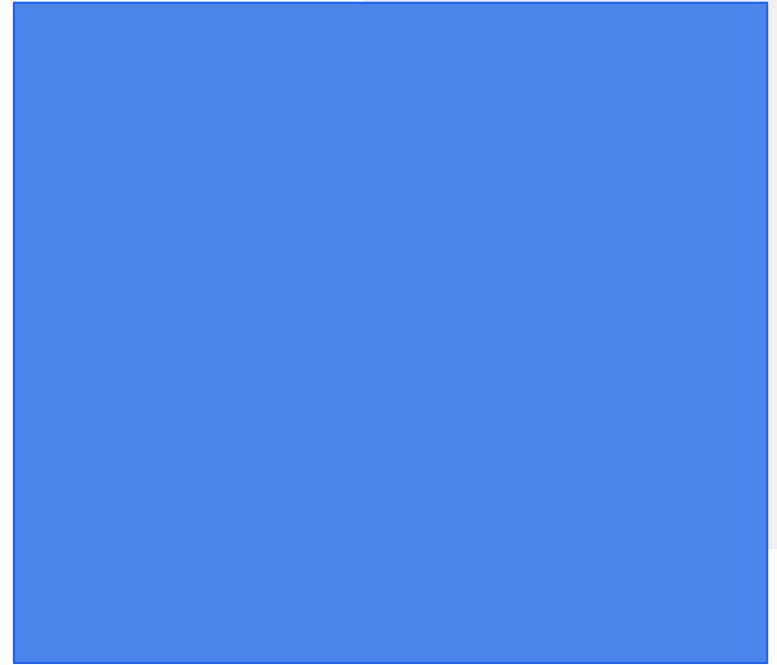# Big Data Analytics

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Graph Analytics

Graph Analytics Implementation

- Import Libraries:

  - SparkSession

  - GraphFrame from graphframes

  - desc, col, and lit from pyspark.sql.functions

Graph Analytics Implementation

- Create SparkSession

- Read data from airline_routes.csv

- Show the Dataframe

- Create the vertice Dataframe using withColumnRenamed() and use the source_airport as the id column

- Create the edge Dataframe using withColumnRenamed() and use the source_airport as the src and destination_airport as the dst

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Graph Analytics Implementation

- Show vertice Dataframe

- Show edge Dataframe

- Create graphframe using the created vertice and edge

- Show the number of vertices using graph.vertices.count()

- Show the number of edges using graph.edges.count()

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Graph Analytics Implementation

- Group the edges based on the src and dst where the count must be more than 5 and ordered in descending order, also add the column source_color with the value lit('#3358FF') and the column destination_color with the value lit('#FF3F33')

- Show data

- Write data into the CSV file using the overwrite mode and set the header to True

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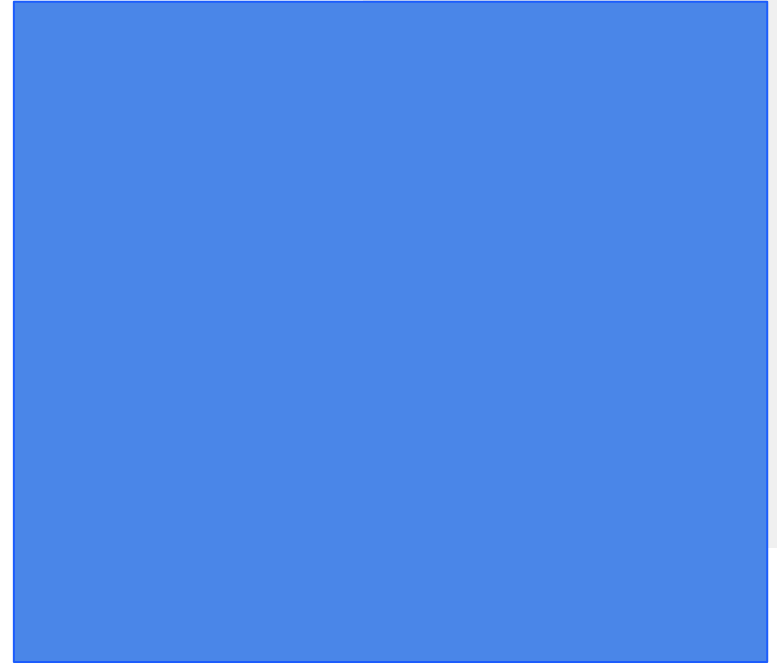
PowerBI Desktop

PowerBI Desktop

- PowerBI is one of the Microsoft platforms.

- It is used to visualise data.

- Download PowerBI Desktop from Microsoft Store

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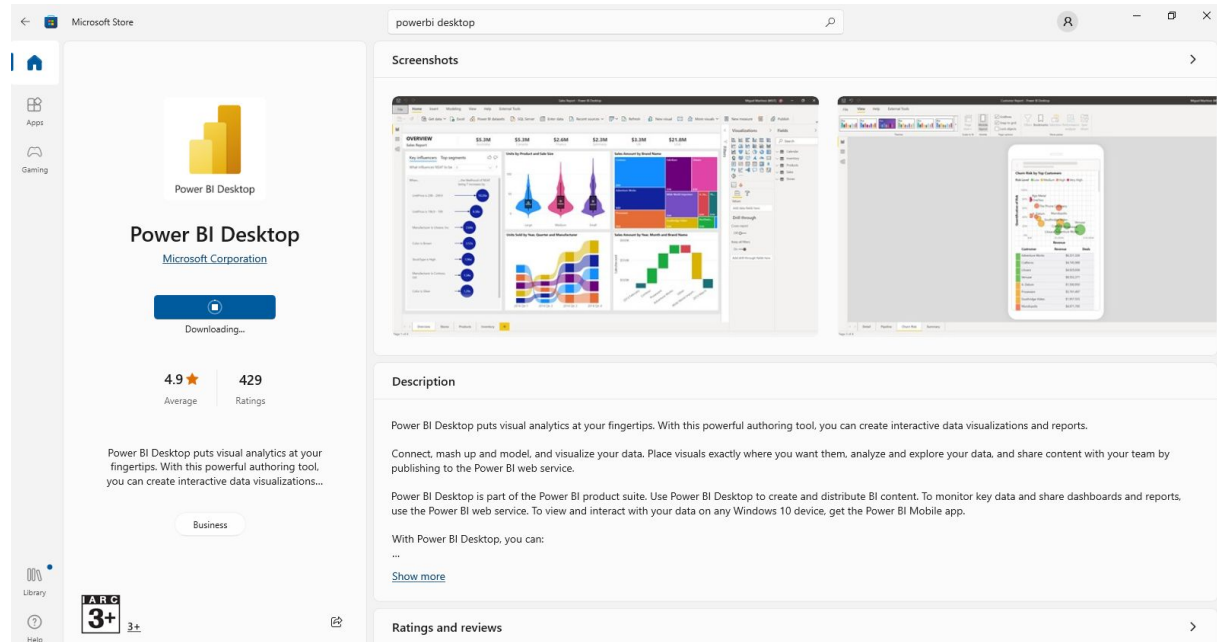
PowerBI Desktop

- Once the installation is finished, open PowerBI Desktop

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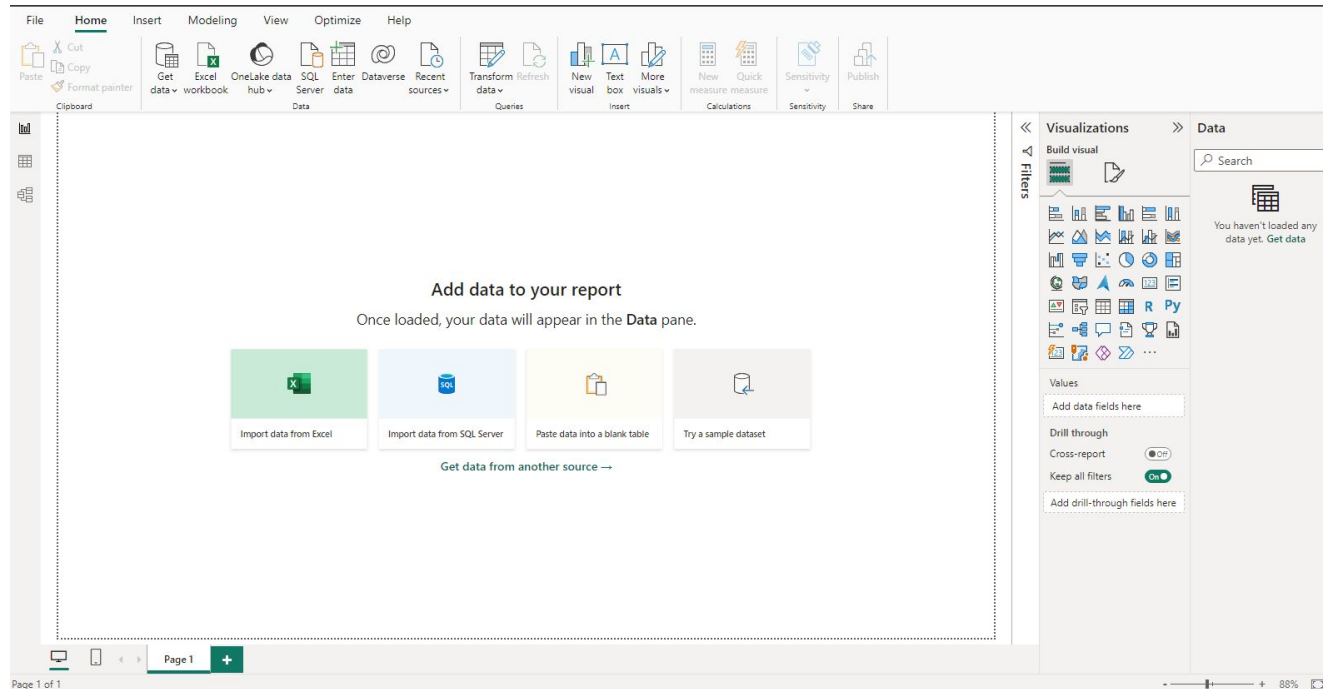
PowerBI Desktop

- Get Data is used to import data into PowerBI
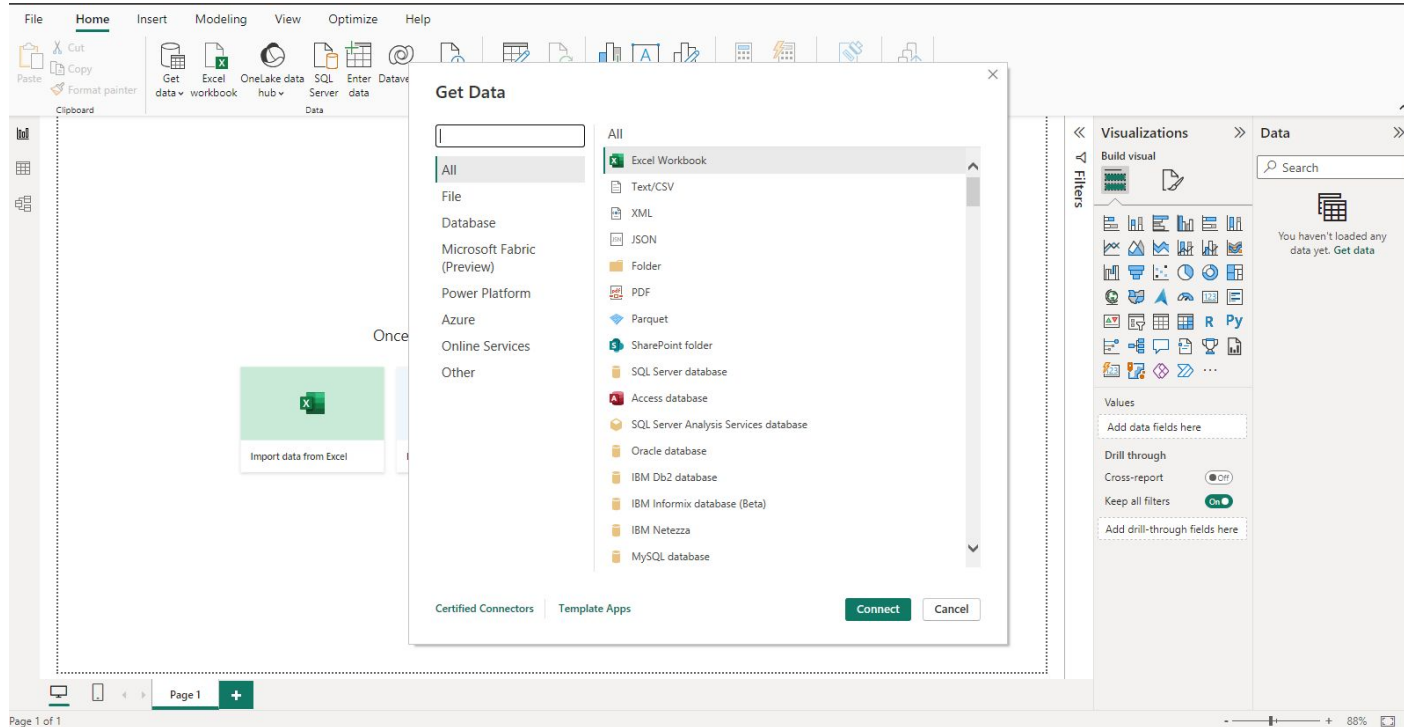
PowerBI Desktop

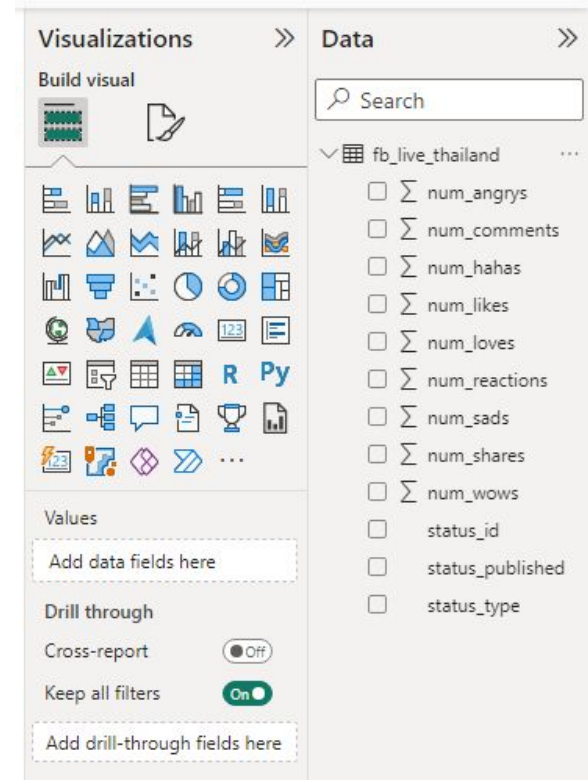- Upload data to PowerBI, for example, airline_routes.csv file

PowerBI Desktop

- If the import succeeds, you will see your data on the right.

- By default, the column with numbers will be summarised.

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PowerBI Desktop

- Get more visuals by clicking …

- Sign in using your KMUTNB email
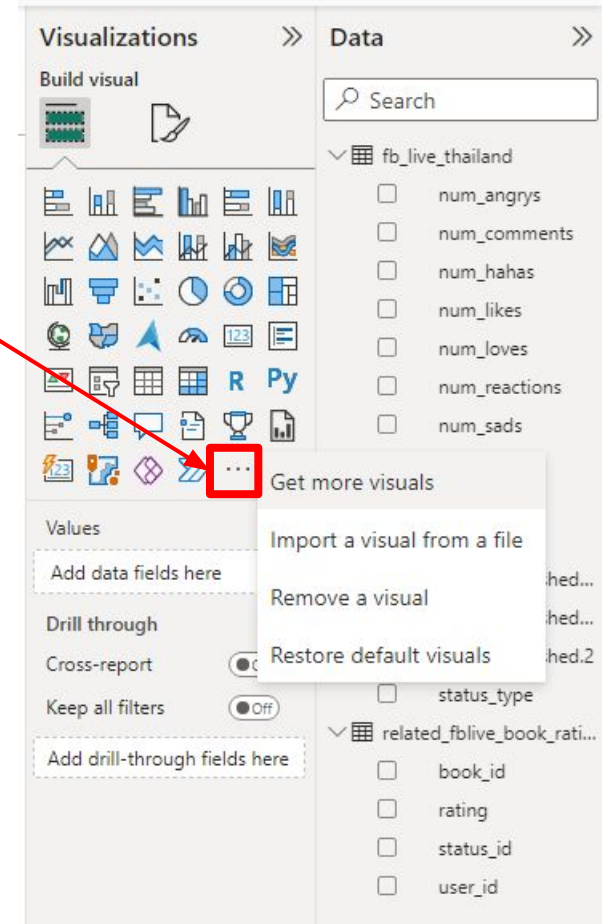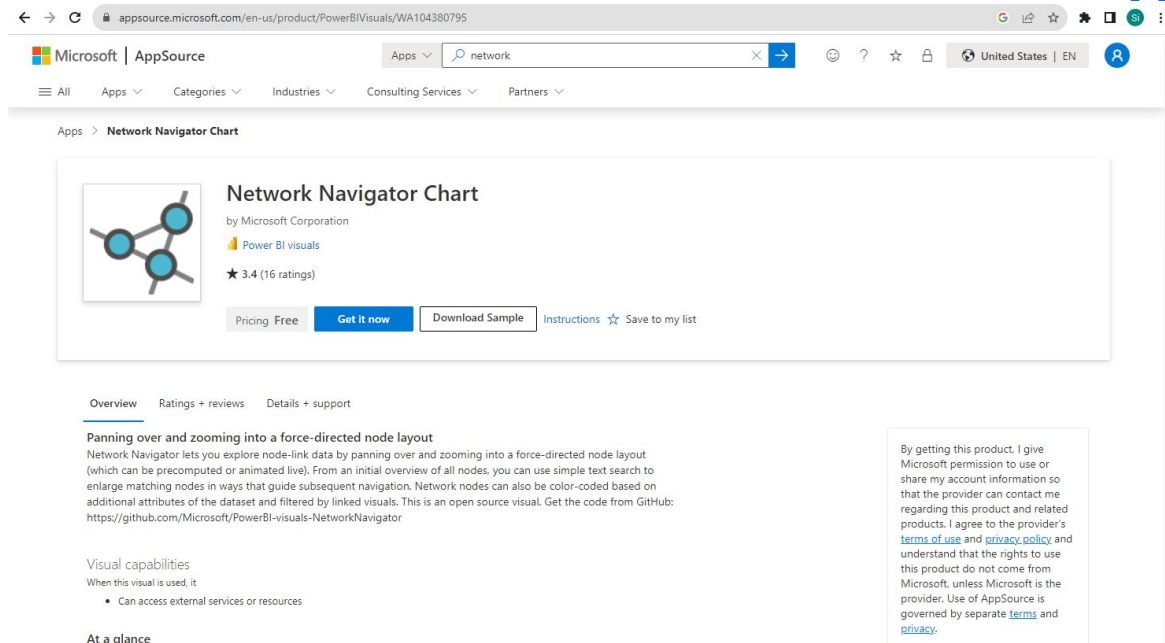
PowerBI Desktop

- Download a new visual from Microsoft AppSource.

- For example, search for Network Navigator Chart

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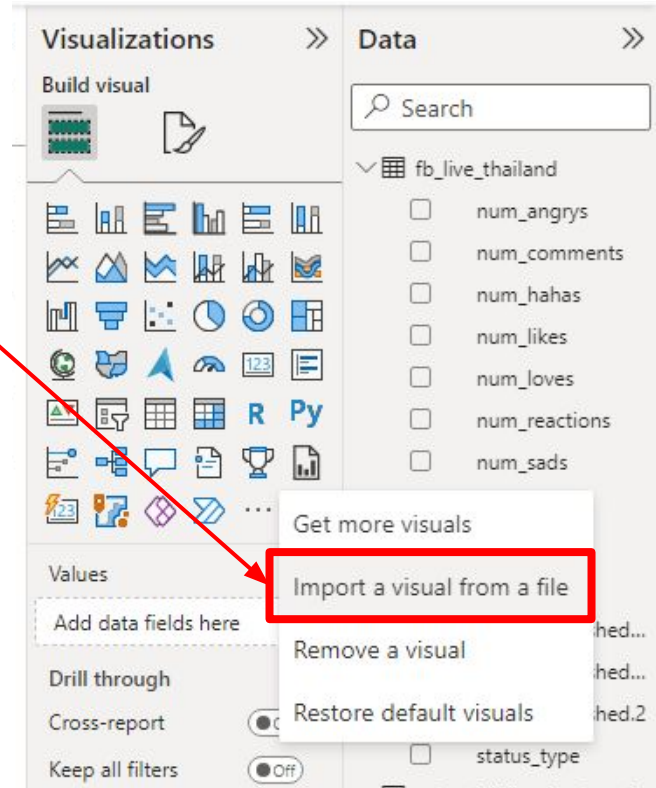
PowerBI Desktop

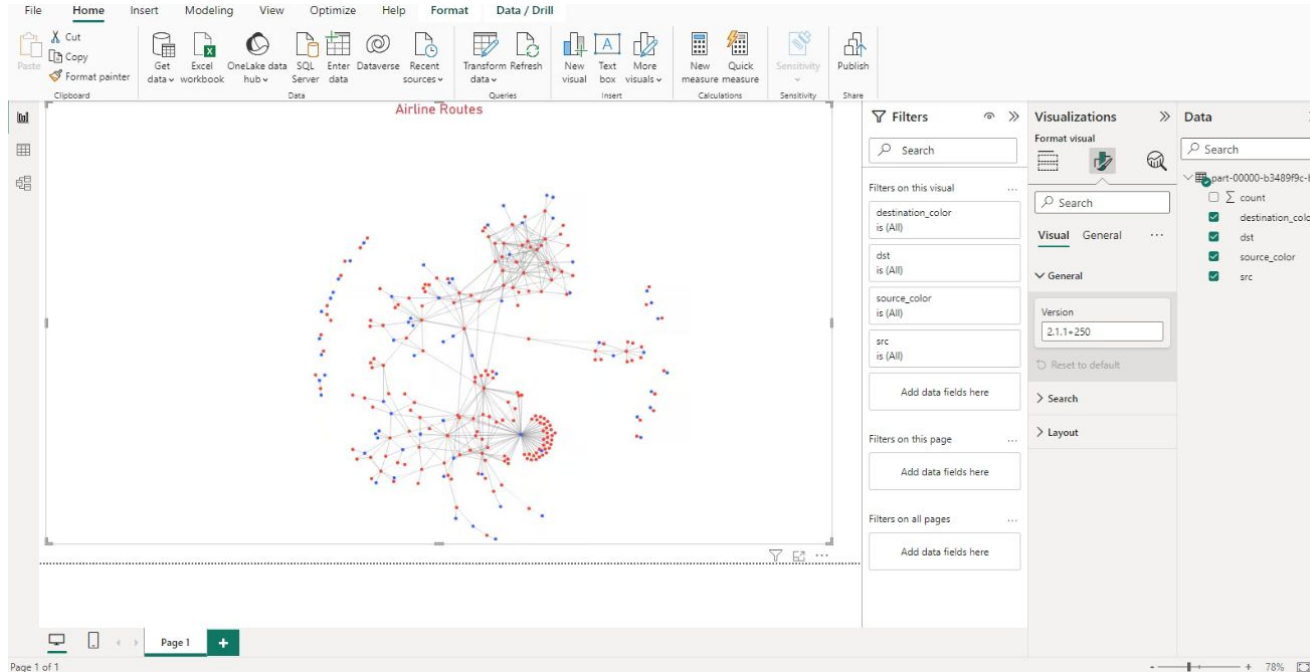- Import the downloaded file to PowerBI

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PowerBI Desktop

- New visual imported
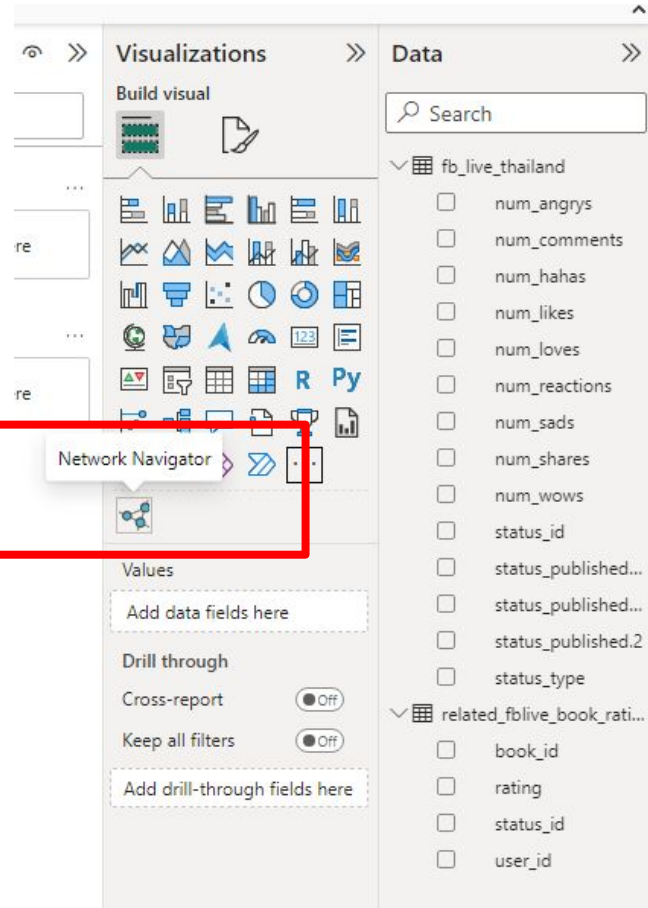
PowerBI Desktop

- Generate graph

Assignment (2 points)

- Please implement the graph analytics following slides 3-6.
- Please use the file you created to visualise the graph in PowerBI.

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