Visual Analytics with Power BI

- Pravin Khatake

Course Deliverables

- This course will help you learn to visualize data using one of the most widely used tool – Power BI
  - Get data
  - Explore Data
  - Prepare Data
  - Visualize Data
  - Publish Reports
- Learn DAX to create advanced Measures in reports
- Similarities and Differences in Tableau and Power BI
- Resume and Interview questions

Day 1

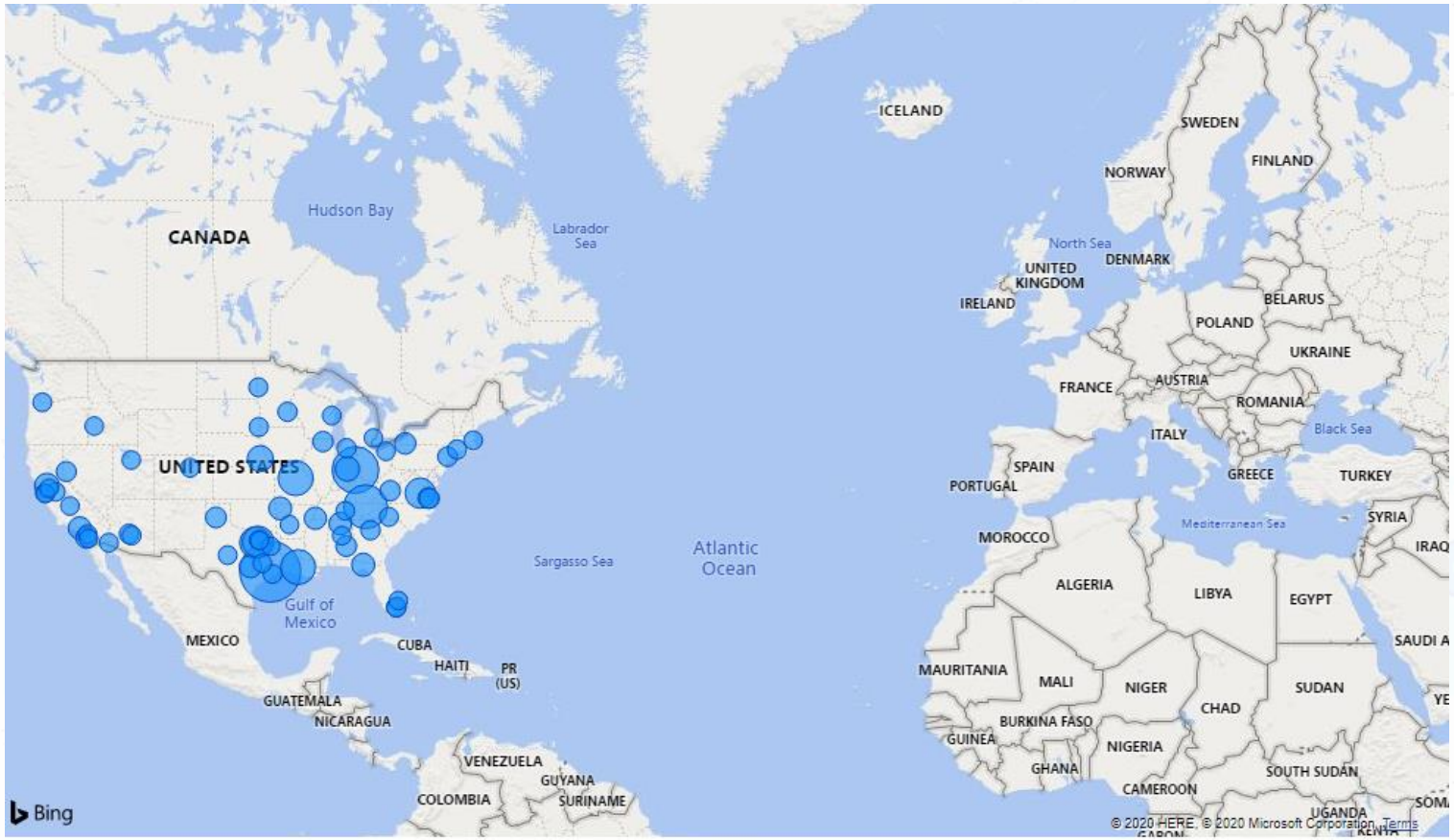
Get Data	Transform/Clean Data	Analyse Data	Report/Visualization
• Large options for connecting to different data sources • Refresh data with every load or periodic refresh • Use data from different sources simultaneously	• Applied steps • Rename table, columns • Column Headers, Data types • Null values, unique values • Split columns • Replace values	• Model Relations • Fields, Visualization and Filter Pane • Geo location analysis • Measures and Calculated Columns	• Charts – Fields and formatting • Text boxes • Sorting, Tooltips, • Drop downs • Drill up, Drill down • Visual interactions • Slicing, buttons • Hierarchy

Challenge - 01

- Instructions –
  - Data Set – SuperStore
  - Display sales for different cities on map
  - Size of the city marker should be proportional to the total sales in the city

  Note that the data consists of cities only in US and map should display accordingly.
  (https://www.latlong.net/category/cities-236-15.html)

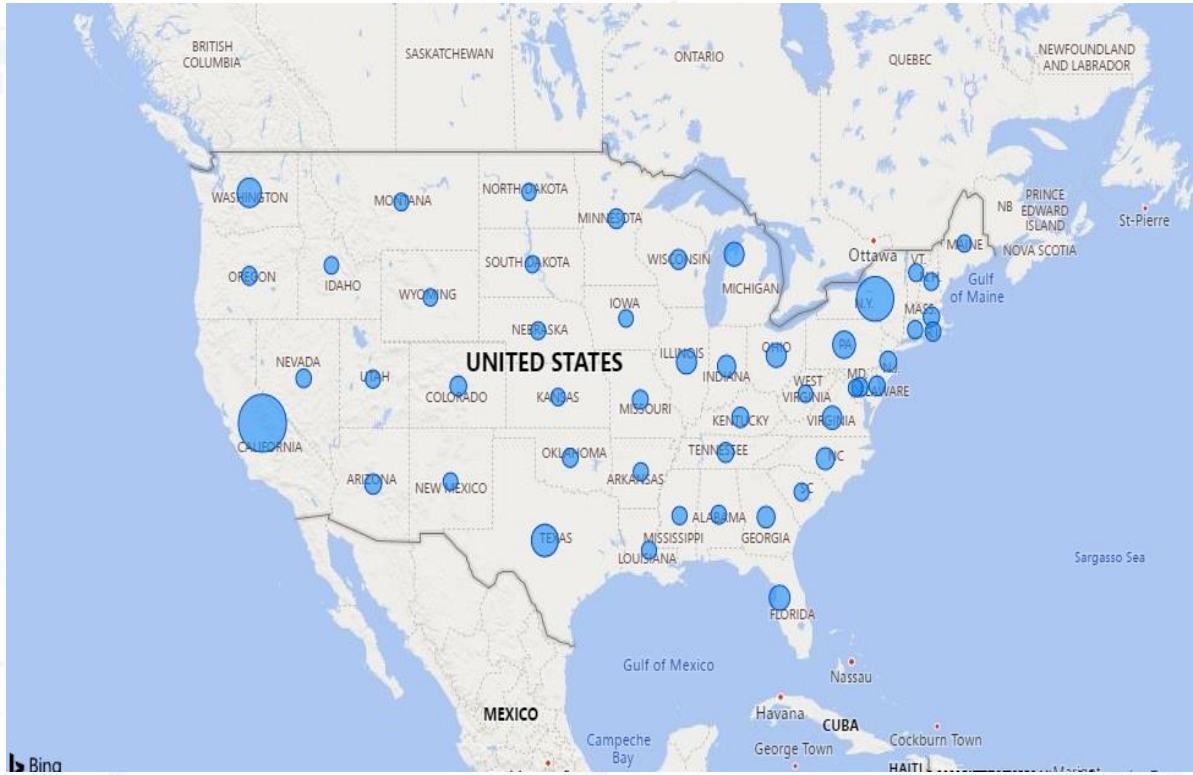
Desired Report



Challenge - 02

- Instructions –
  - Data Set – SuperStore
  - Display sales for country on map. There should be drill down and drill up option to view state and city sales

Desired Report



Challenge - 03

- Instructions –
  - Data Set – SuperStore
  - A Select Month parameter to choose the month
  - A Select Year parameter to choose the year
  - Total Sales for that selected month and year
  - The delta from the previous month expressed as a KPI

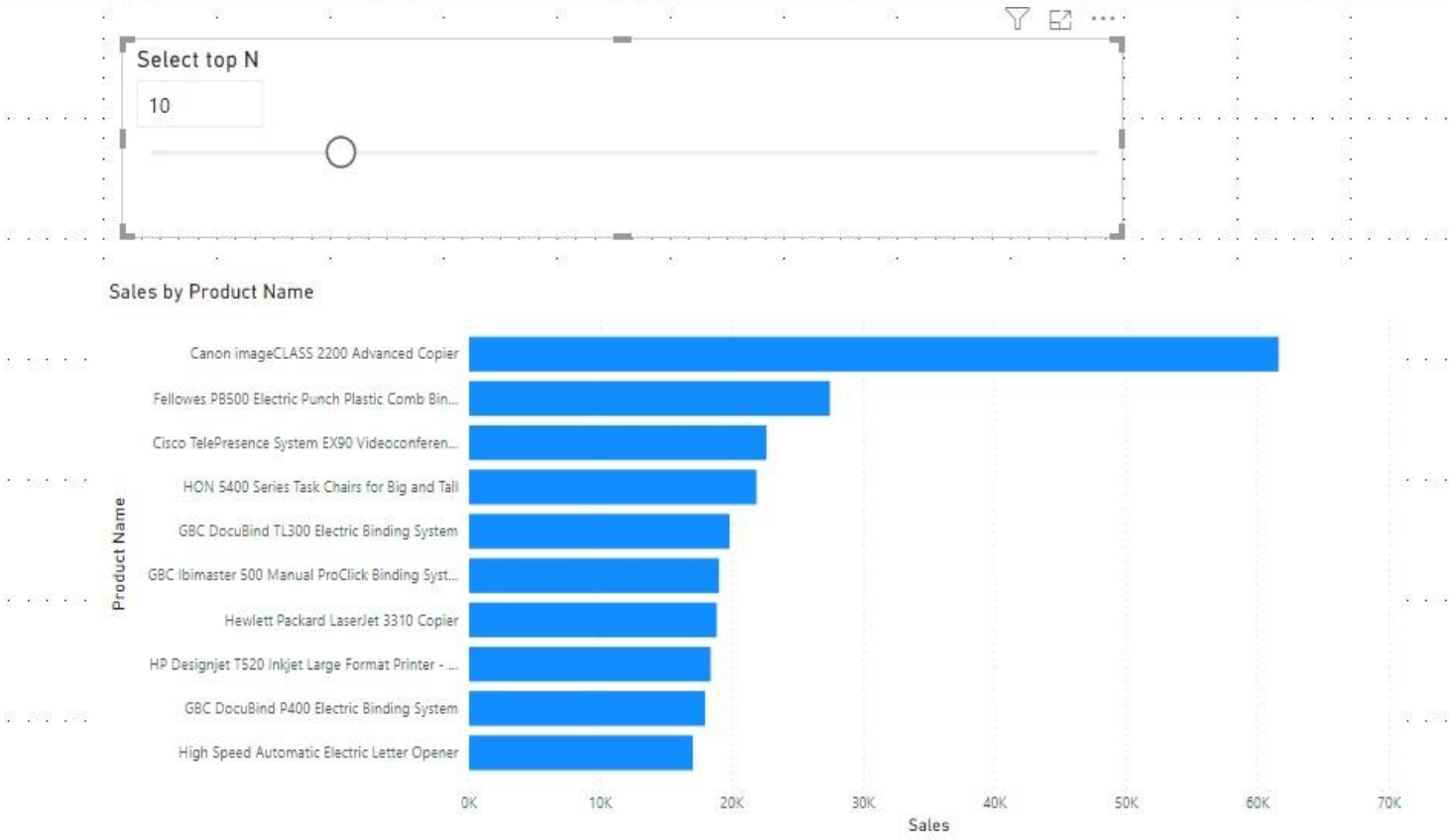
  hint: the downward arrow is a UTF-8 character and not a shape or image

Desired Report

Challenge - 04

- Instructions –
  - Data Set – SuperStore
  - Create a parameter called Top N
  - Create a bar chart to rank the top selling Product Names by sales
  - Rank them in descending order
  - The dynamic Top N parameter should filter the visualization dynamically, whether I toggle between Top 1 to 30

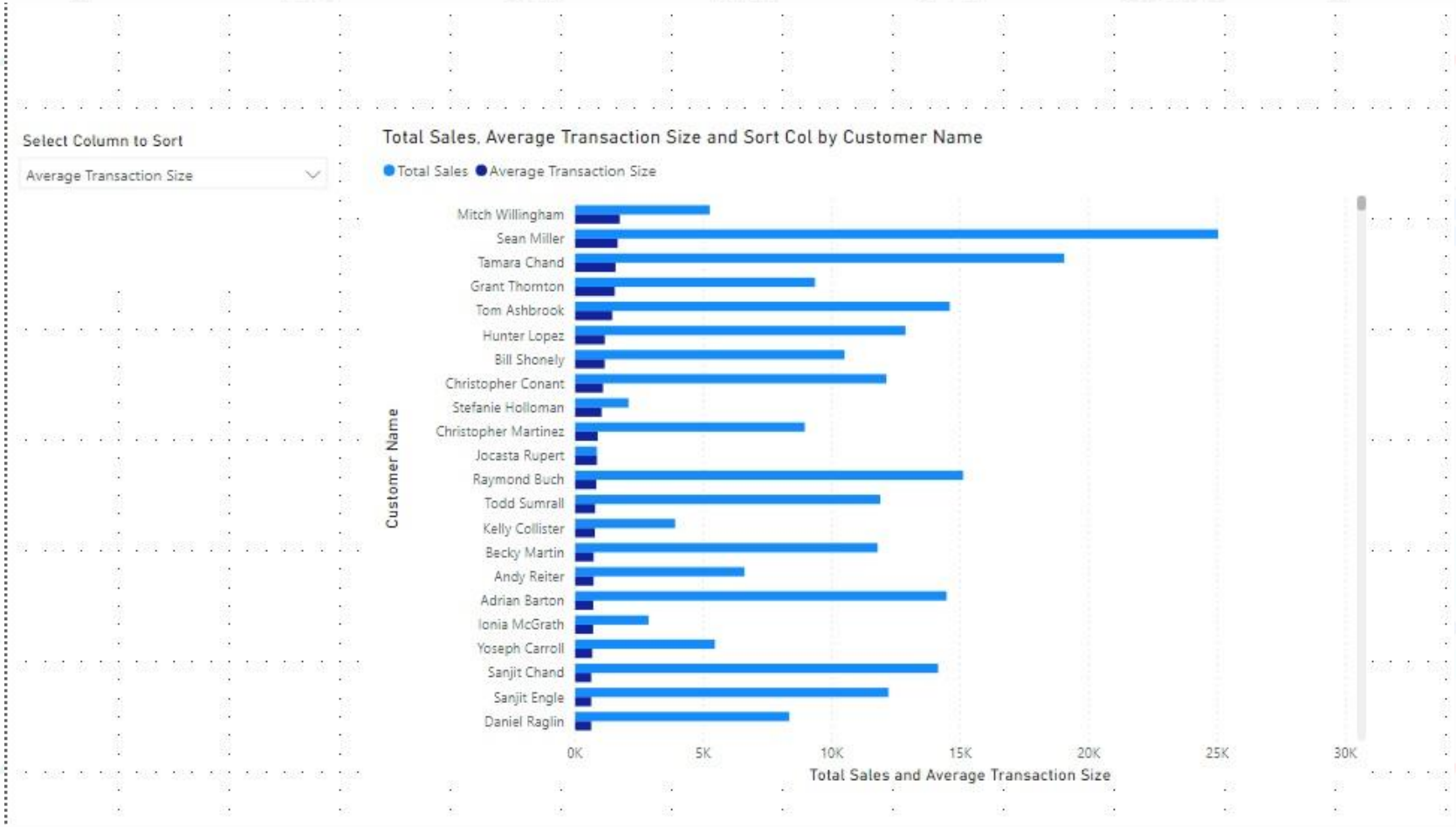
Desired Report



Challenge - 05

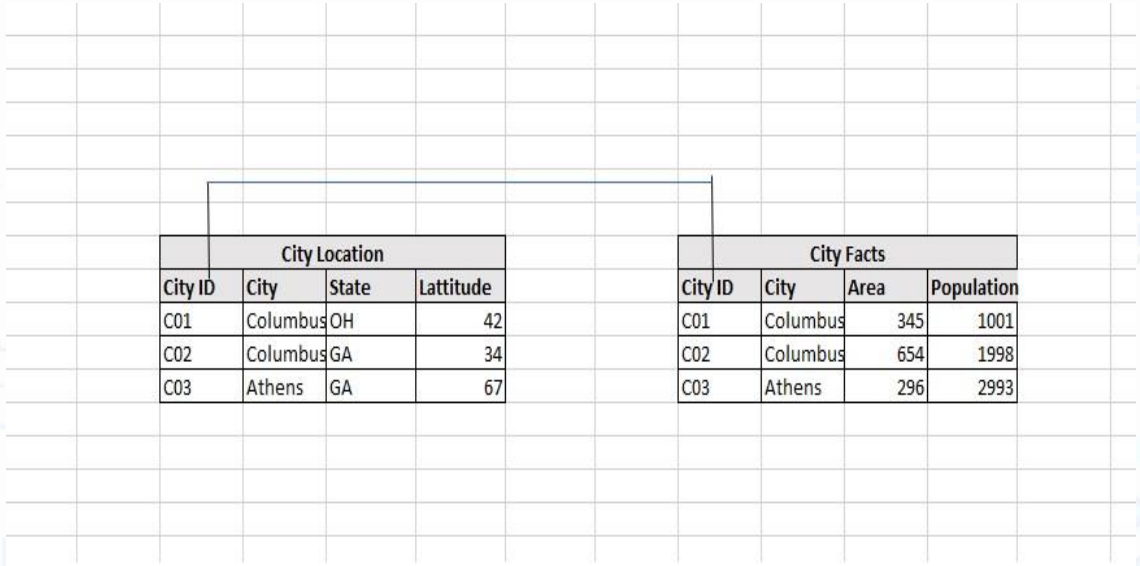
- Instructions –
  - Data Set – SuperStore
  - Create 2 measures (Total Sales and Average Transaction Size per Order)
  - Create a parameter so I can dynamically sort in descending order the customers based on either of the 2 measures (the screenshots shows that average transaction size is selected and so report is sorted by Average Transaction Size)

Desired Report



Model, Relations, Cardinality

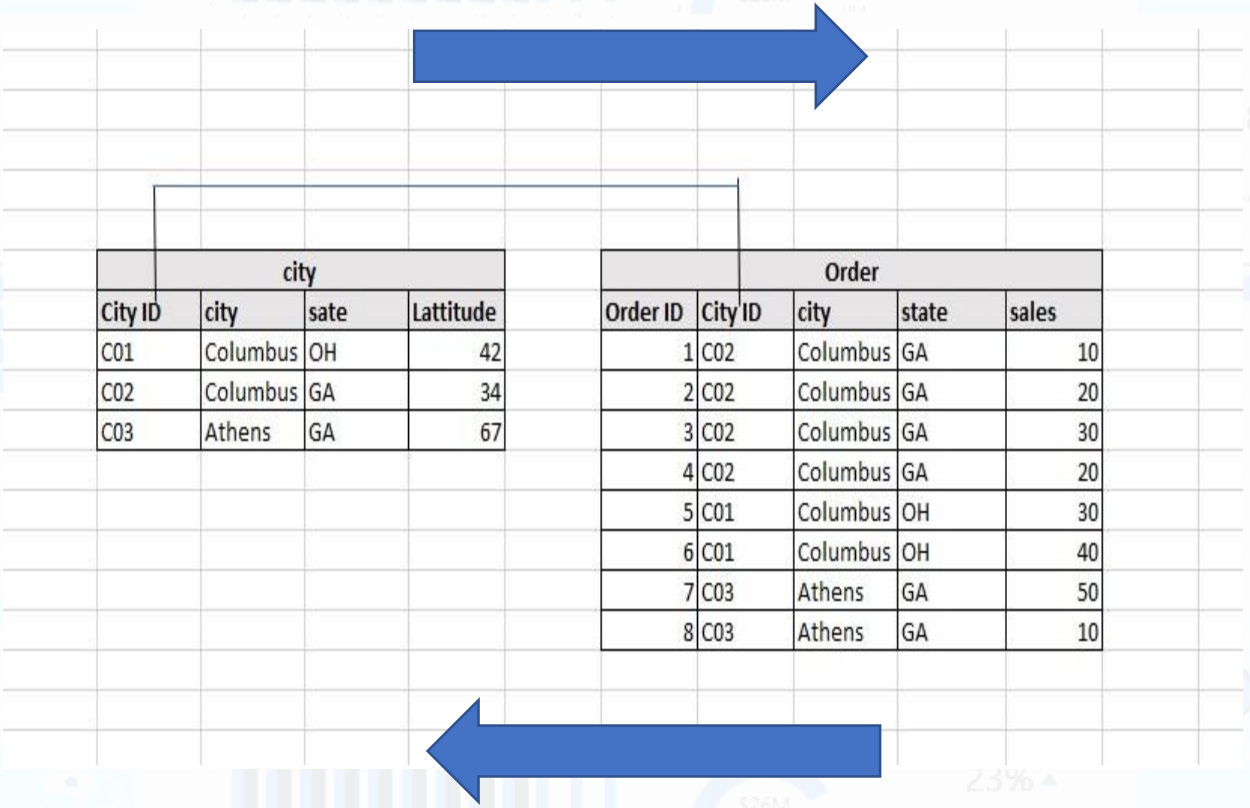
One to One (1:1)



City Location			
City ID	City	State	Lattitude
C01	Columbus	OH	42
C02	Columbus	GA	34
C03	Athens	GA	67

City Facts			
City ID	City	Area	Population
C01	Columbus	345	1001
C02	Columbus	654	1998
C03	Athens	296	2993

One to Many (1:*)



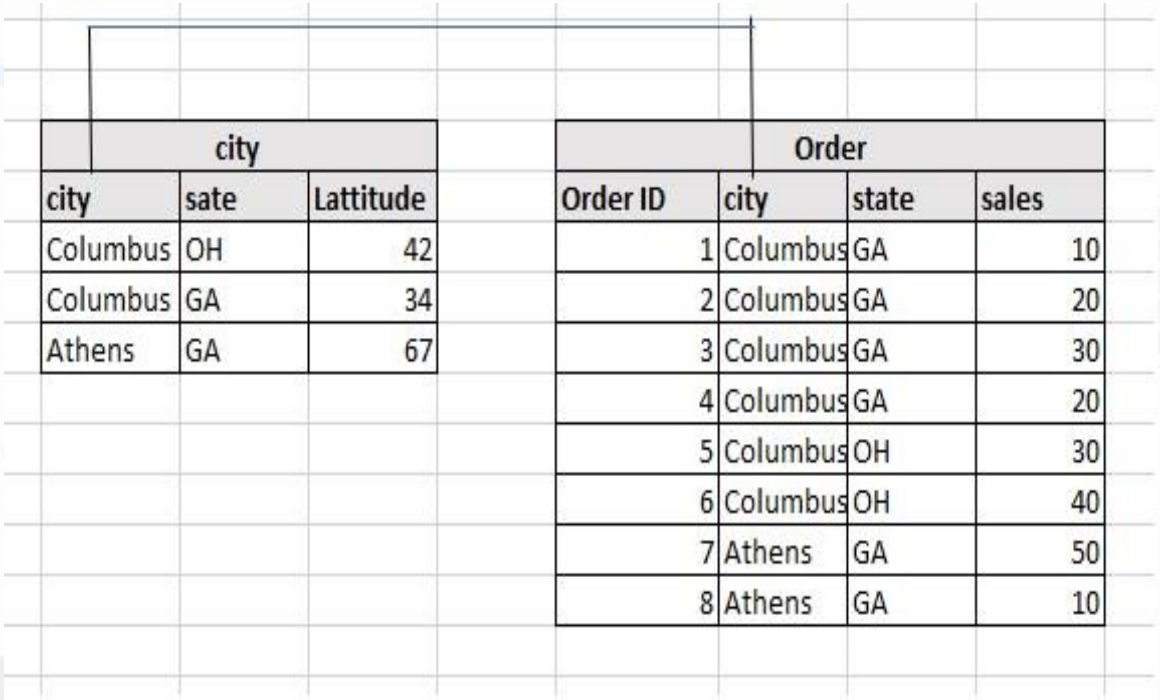
city			
City ID	city	sate	Lattitude
C01	Columbus	OH	42
C02	Columbus	GA	34
C03	Athens	GA	67

Order				
Order ID	City ID	city	state	sales
1	C02	Columbus	GA	10
2	C02	Columbus	GA	20
3	C02	Columbus	GA	30
4	C02	Columbus	GA	20
5	C01	Columbus	OH	30
6	C01	Columbus	OH	40
7	C03	Athens	GA	50
8	C03	Athens	GA	10

Many to One (*:1)

Model, Relations, Cardinality

Many to Many (*:*)



city		
city	sate	Lattitude
Columbus	OH	42
Columbus	GA	34
Athens	GA	67

Order			
Order ID	city	state	sales
1	Columbus	GA	10
2	Columbus	GA	20
3	Columbus	GA	30
4	Columbus	GA	20
5	Columbus	OH	30
6	Columbus	OH	40
7	Athens	GA	50
8	Athens	GA	10

Warning:

Total sales by city

City	Sum (Sales)
Columbus	150
Columbus	150
Athens	60

Solution – Try converting it to one to many.

Challenge - 06

- Instructions –
  - Data Set – Restaurant Chain (Application Generated Messy Data)
  - Build a dashboard to understand various trends and insights (use "Indic Sales" as Sales; use "# Trans" as Traffic)
    - Provide Sales and Traffic summary for regions and drill down options to explore Locations and store
    - Provide a monthly summary of sales and traffic for each store
    - Provide a week over week Traffic trend chart and dropdown filter for Region
    - Provide Sales and Traffic summary for regions and drill down options to explore Locations and store
    - Provide a 7 Days (Monday to Sunday) Traffic Analysis for Ontario Stores
    - Identify the top 3 restaurants that sold the most Jarritos as a percentage of their restaurant sales during this period (use "Total Mtn" as Menu Item Daily Sales; "use "Indic Sales" as Sales)
    - How many Jarritos by traffic were sold for the top 3 restaurants? (use "# Trans" as Traffic)