

Premier Logistics Solutions (PLS) manages a complex supply chain network, coordinating suppliers, manufacturing facilities, and distribution centers across the globe. At the last management strategy meeting, multiple executives expressed frustration that they do not have timely access to the required information to support effective decision-making for inventory management, timely shipments, and overall operational inefficiencies.

After a long, and sometimes heated discussion, Tina Williams, the CEO, said that she has to leave for another meeting and she had the following comments on this issue:

- 1) PLS has access to all of the data that we need. We are practically drowning in data but it is not available to the people who need it, when they need it, and in a format that generates insights and supports sound decision-making.
- 2) This cannot continue. It is causing inefficiencies throughout the organization and is negatively impacting our profitability and competitiveness.
- 3) Her final words before leaving were that she wants to see a detailed proposal to address this issue at the next meeting.

Dashboard Requirements

After Tina left the meeting, the management team worked to determine how they would provide the detailed proposal that she asked for. Considerable back-end work has already been done in Power BI including gathering and transforming the required data using Power Query, organizing the data into a data model, and creating DAX formulas for important KPI's. The team worked to identify requirements for the dashboard (listed below). At the next meeting, they would provide a demo to show that the Power BI visualization tools could be used to meet these requirements.

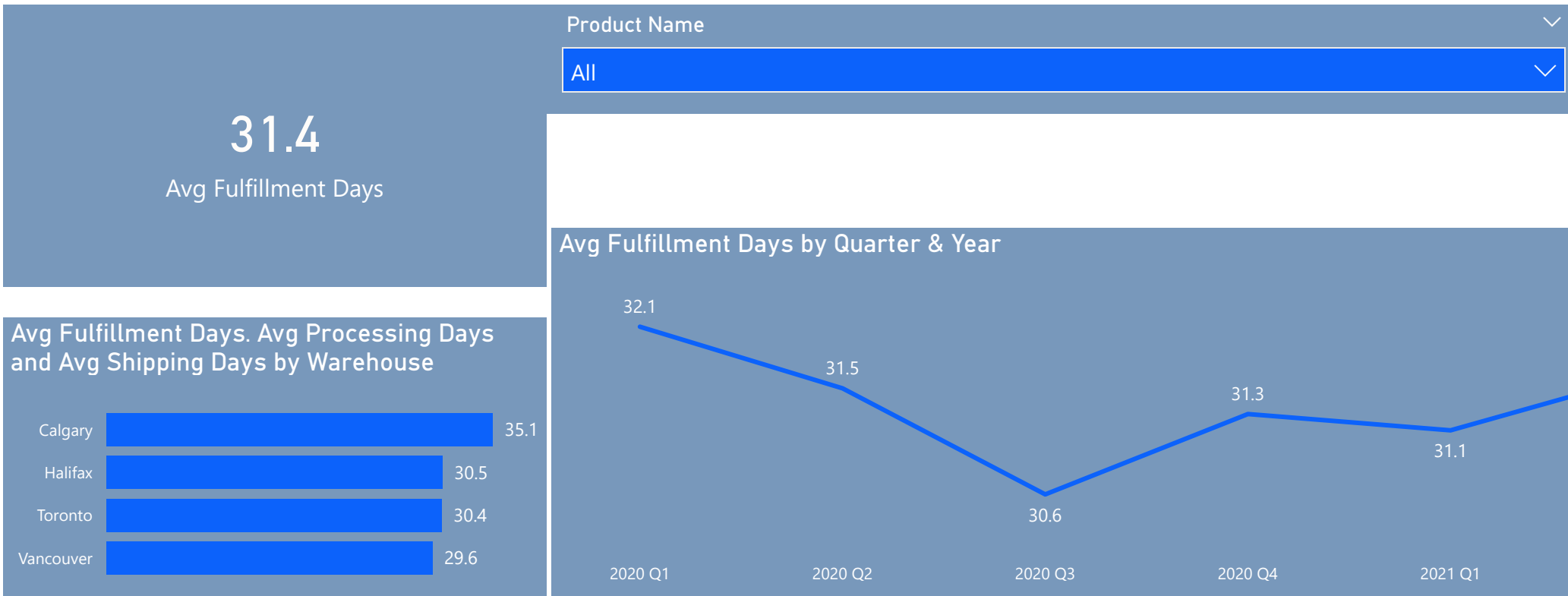
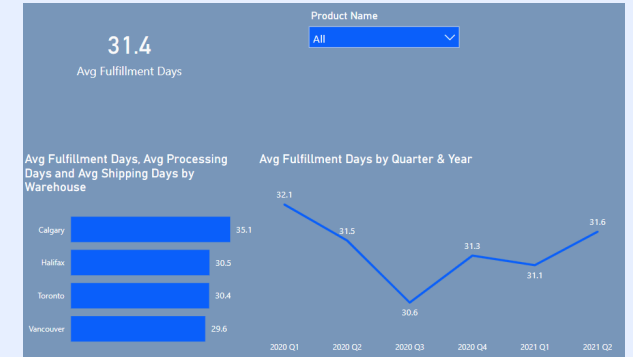
- 1) Simple, flexible interface to empower users to explore data
- 2) Drill through capability (e.g. high-level overview of shipments down to individual shipments)
- 3) Highlight critical data points based on predefined thresholds (conditional formatting)
- 4) Dynamic report content (e.g. hover over data points to see additional details)
- 5) Dynamically change charts based on user preference
- 6) Provide advanced filtering capabilities
- 7) Map data to easily identify geographical insights based on locations of suppliers, distribution centers, and customers
- 8) Automated support, using AI-based technology, to help identify factors influencing supply chain performance

Your Assignment - Part 1

As the lead supply-chain analyst for PLS, you have been assigned to create a proof-of-concept dashboard in Power BI to present at the next management meeting. The first iteration of the proof-of-concept dashboard must address requirements 1-7.

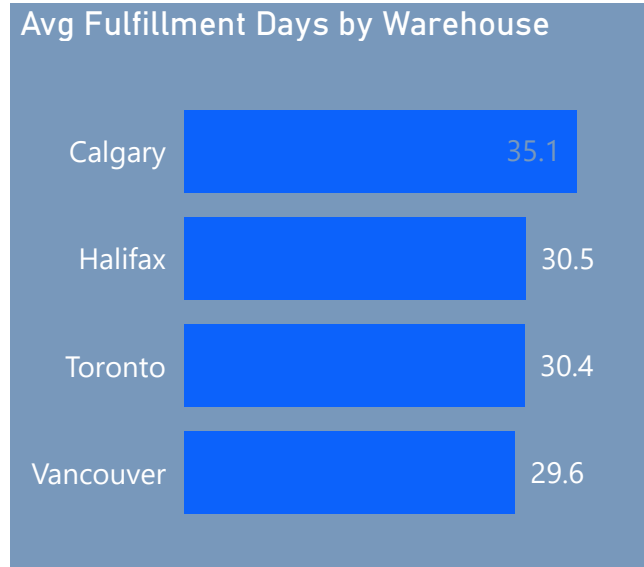
1) Create multiple visuals from a single measure: **Average Fulfillment Days**

- 1) Card visual
- 2) Bar chart: **Avg Fulfillment Days by Warehouse**
(add tool tips for Average Processing Days and Average Shipping Days)
- 3) Line chart: **Avg Fulfillment Days by Quarter and Year**
- 4) Slicer: **Product Name** (in Slicer settings, set Style to Drop down)
- 5) Demonstrate cross-filtering by selecting a warehouse in the bar chart



2) Demonstrate drill-through capability

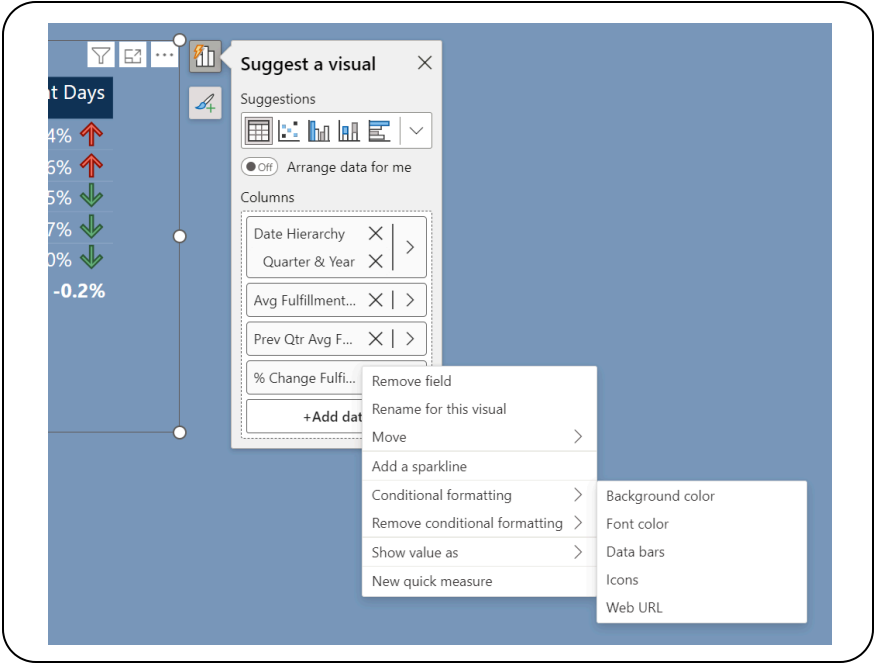
- 1) Set up the report page (2 - Details) to be a drill down report that accepts Warehouse as the drill-down field.
- 2) Right-click on a bar in the bar chart and drill-down to see details for a specific warehouse.



3) Use Conditional Formatting to highlight critical data points based on pre-defined thresholds

Use conditional formatting to add icons beside the % Change Fulfillment Days.
An increase in the number of days should be shown in red and a decrease should be shown in green.

Average Order Fulfillment Days			
Quarter & Year	Avg Fulfillment Days	Prev Qtr Avg Fulfillment Days	% Change Fulfillment Days
2020 Q4	31.3	30.6	2.4% ↓
2021 Q2	31.6	31.1	1.6% ↓
2021 Q1	31.1	31.3	-0.5% ↑
2020 Q2	31.5	32.1	-1.7% ↑
2020 Q3	30.6	31.5	-3.0% ↑
Total	31.2	31.3	-0.2%



Icons - % Change Fulfillment Days

Format style

Rules

Apply to

Values only

What field should we base this on?

% Change Fulfillment Days

Icon layout

Right of data

Icon alignment

Top

Style

Custom

Rules

Reverse icon order

New rule

If value

>=

0

Number

and

<=

100

Percent

then

↑

↑

↓

×

If value

=

0

Number

then

→

↑

↓

×

If value

>=

-100

Number

and

<

0

Number

then

↓

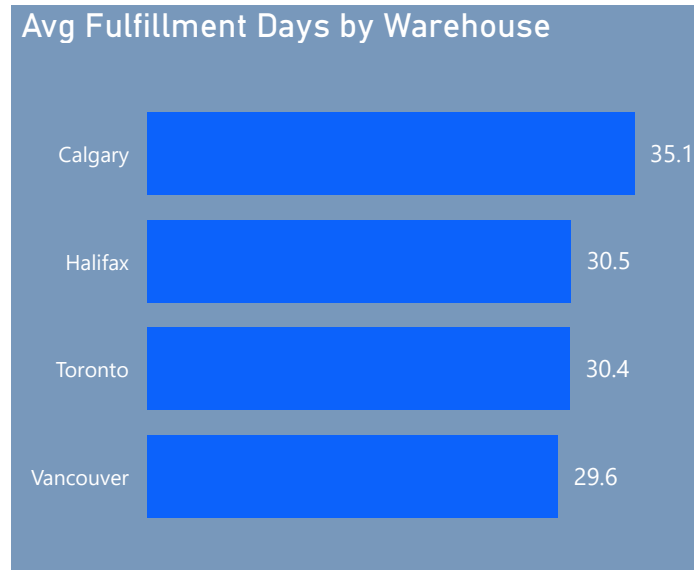
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↓

×

4) Provide additional context (hover over objects to see advanced tool tips)

- 1) Set up the report page (4 - Tool Tips) to be a Tool Tips type report page that accepts Warehouse as the Tool Tips value .
- 2) On the bar chart below, set the Tool Tips type to Report Page that displays the page: 4 - Tool Tips.



5) Modify charts below to make the y-axis change dynamically based on a dropdown

1) Create parameter and add slicer to report page

Parameters

Add parameters to visuals and DAX expressions so people can use slicers to adjust the inputs and see different outcomes. [Learn more](#)

What will your variable adjust?

Fields

Name

Group By Fields

Add and reorder fields

- Warehouse
- Vendor Name
- Product Name

Fields

- Measures Table
- Order Fulfillment Measures
- Customers
- Dates
- Inventory
- Products
 - Product ID
 - ☒ Product Name
- Sales
- Vendors
 - ID
 - Sort Order

☒ Add slicer to this page

Create Cancel

2) Format slicer

Format

Search

Visual Properties

Size and style

Title

Slicer settings

Options

Style

Dropdown

Selection

Single select

On

3) Replace the y-axis value with the Group by Fields

Y-axis

Group By Fields

+Add data

X-axis

of Orders

Measures Table

Order Fulfillment Mea...

Customers

Dates

Group By Fields

Group By Fields

Inventory

4) Use dropdown to change y-axis of all charts to Vendor Name.

Group By Fields

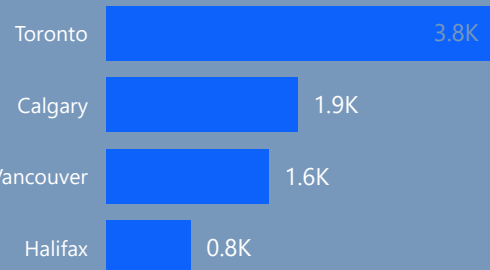
Vendor Name

- Warehouse
- ☒ Vendor Name
- Product Name

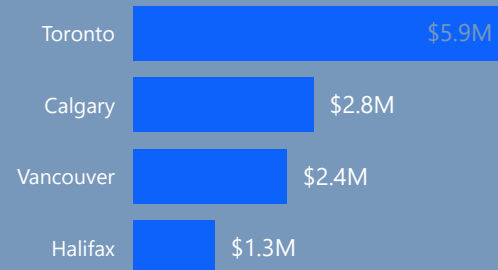
Group By Fields

Warehouse

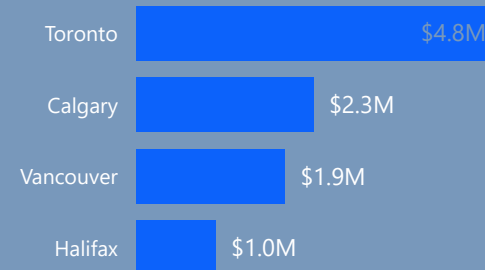
of Orders by Warehouse



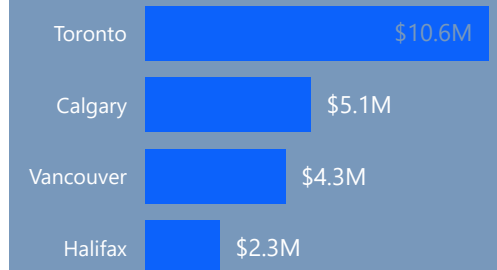
Cost of Goods Sold by Warehouse



Profit by Warehouse

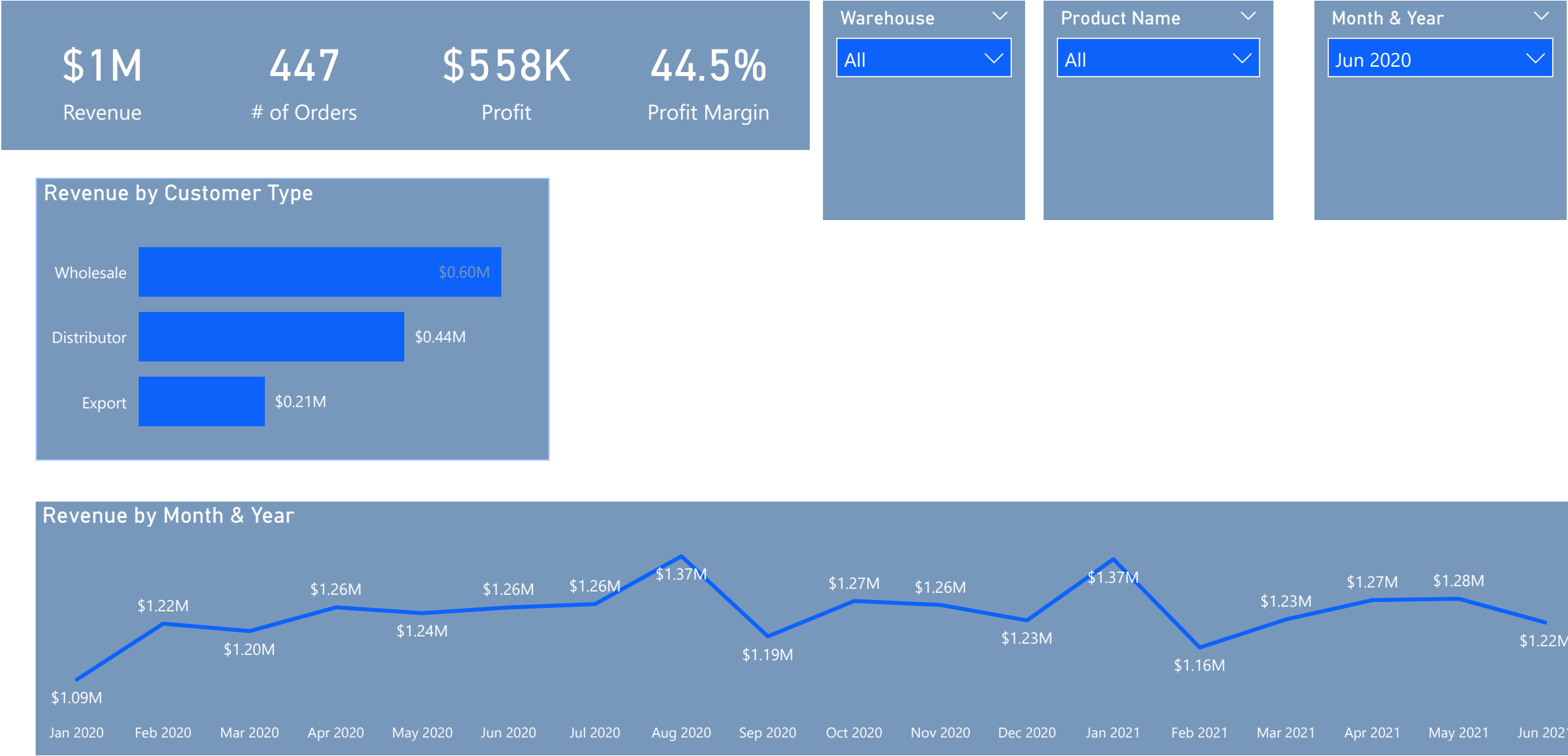


Revenue by Warehouse



6) Provide advanced filtering capabilities

- 1) Demonstrate filtering using slicers and cross-filtering.
- 2) Create a button to clear all filters on this page.
- 3) Use the *Edit Interactions* option on the *Format* menu to stop the *Month & Year* filter from affecting the *Revenue by Month & Year* line chart.



7(a) Mapping - Set data type for location columns (Country, Province, City)

Visualizations - Assignment 1 • Last saved: Yesterday at 4:33 PM

File Home Help External tools **Table tools** **Column tools**

Name Province Format Text Summarization Don't summarize

Data type Text Data category State or Province

Structure Formatting

Sort by column Data groups Manage relationships New column

Sort Groups Relationships Calculations

Customer ID	Customer Name	Customer Type	City	Province
C1	New Ltd	Distributor	Vancouver	British Columbia
C2	Winthrop	Wholesale	Calgary	Alberta
C3	Apollo Ltd	Export	Saskatoon	Saskatchewan
C4	Eminence Corp	Export	Toronto	Ontario
C5	E. Ltd	Wholesale	Oshawa	Ontario
C6	Weimei Corp	Wholesale	Victoria	British Columbia
C7	Victory Ltd	Distributor	London	Ontario
C8	O.E. Ltd	Distributor	Burnaby	British Columbia

Uncategorized

Address

Place

City

County

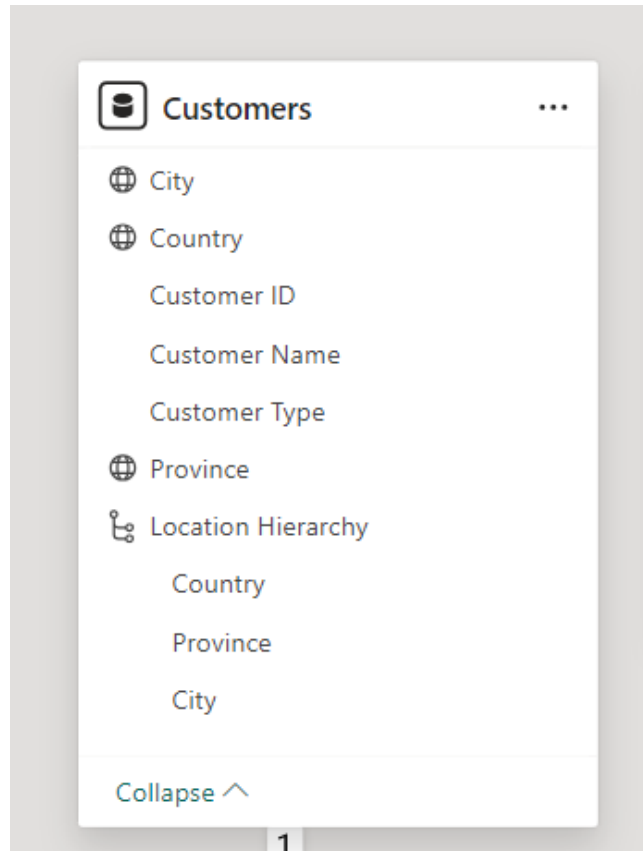
State or Province

Postal code

Country

Continent

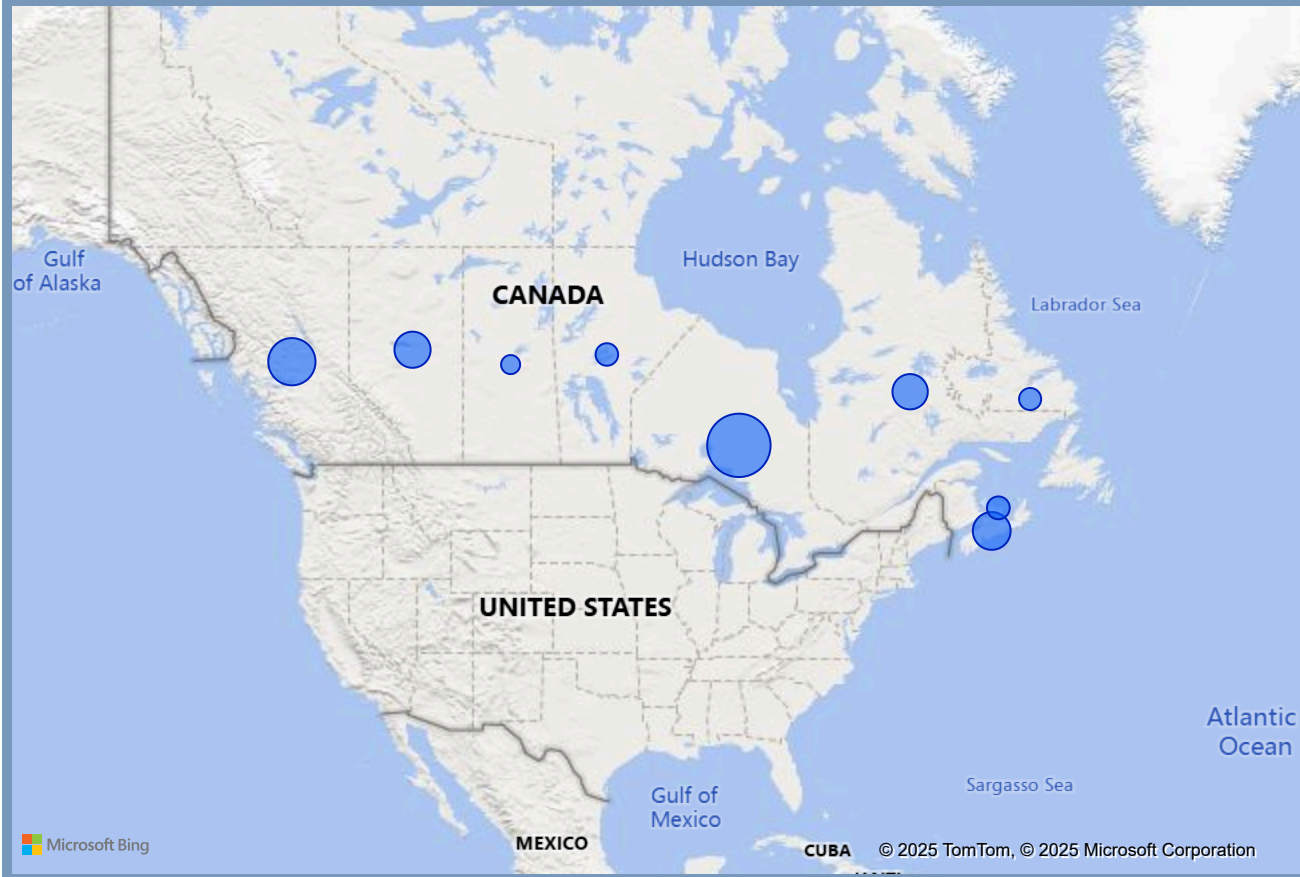
7(b) Mapping - Create a location hierarchy (Country, Province, City)



🔗 Mapping - Create a map showing the number of orders by customer location

- 1) Use visual type: Map (see image for details)
- 2) Explore drill down options (note which options retain context of higher level)
- 3) Add Zoom buttons (Map settings - Controls)
- 4) Add tool tips for the other Core Measures

of Orders, # of Products Sold, Cost of Goods Sold, Profit, Profit Margin and Revenue by Province



Suggest a visual

Suggestions

📍

Off Arrange data for me

Location

Location Hierarchy	X	>
Country	X	
Province	X	
City	X	

+Add data

Legend

+Add data

Latitude

+Add data

Longitude

+Add data

Bubble size

# of Orders	X	>
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Requirement # 2 - Details: Drill down page

- 1) Create the report shown in the image below.
- 2) Designate this page as a drill-through report, using the page-level format settings as shown in the image on the right.

Warehouse	Year	Avg Processing Days	Avg Shipping Days	Avg Fulfillment Days
Calgary	2021	25.1	9.4	34.5
	2020	25.9	9.5	35.4
	2020 Q4	25.6	9.4	35.0
	2020 Q3	25.3	9.6	34.9
	2020 Q2	26.3	9.5	35.8

Warehouse
Halifax

Year	Avg Processing Days	Avg Shipping Days	Avg Fulfillment Days
2020	23.6	6.6	30.3
2020 Q1	25.9	6.8	32.7
2020 Q2	20.9	6.5	27.4
2020 Q3	24.2	6.6	30.8
2020 Q4	23.5	6.6	30.1
2021	24.8	6.2	31.0
Total	24.0	6.5	30.5

Format ... >>

Page information

Name

Page type

Drillthrough

Keep all filters ☒

Cross-report ☐

Drill through from

Warehouse

+Add data

Drill through when

Warehouse is

Used as category

Calgary

Quarter & Year ▲	# of Orders	# of Products Sold	Revenue
2020 Q1	1,288	10,655	\$3,508,018
2020 Q2	1,336	11,356	\$3,754,392
2020 Q3	1,361	11,550	\$3,826,819
2020 Q4	1,335	11,364	\$3,758,075
2021 Q1	1,350	11,428	\$3,758,804
2021 Q2	1,330	11,306	\$3,769,698
Total	8,000	67,659	\$22,375,805

of Orders by Product Name

Product 33	138
Product 37	138
Product 64	134
Product 60	132
Product 54	131
Product 3	129
Product 5	129
Product 27	129