

# **Week 6 – Business Analytics Fundamentals – Sydney Campus**



- 1. Review of Lecture 5**
- 2. Mastering Concepts for Tutorial Week 6**
- 3. Tutorial Week 6 – step-by-step instruction**
- 4. Attendance & Tutorial Questions - Recognising student participation and engagement specifically identifying those who are most actively involved!**

**Lecturer/Tutor: Dr. Farshid Keivanian**

FarshidKeivanian/Sessions\_Busine X +

https://github.com/FarshidKeivan...

FarshidKeivanian / Sessions\_BusinessAnalytics\_PowerBI

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About

Business Analytics Fundamentals using Power BI

business analytics excel

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## **1. Summary of Lecture 5**

The lecture 5 focuses on the intricacies of the reporting process, decision making, and optimization. The lecture outlines the structured approach to creating impactful business reports that support decision-making and optimization. Key points include understanding the business process and associated decisions, identifying crucial information objects, and evaluating report functionality and impact. Best practices emphasize the importance of clear and actionable reports that are aligned with corporate strategy and decision workflows.

# 1. Summary of Lecture 5

To apply these concepts practically in an Australian context, consider a scenario involving a retail chain looking to optimize its inventory across multiple locations. The company could implement a reporting system that uses data analytics to identify sales patterns and inventory levels, triggering restocking decisions. This system could reduce decision latency by providing real-time data, enabling quicker responses to stock shortages or surpluses. By integrating contextual information like local events or weather forecasts, the company could further refine its inventory management, ensuring optimal stock levels that meet consumer demand while minimizing excess inventory. This would not only improve operational efficiency but also enhance customer satisfaction and profitability.

## **2. Mastering Concepts for tutorial week 6**

To effectively understand and utilize the tutorial document for Week 6 on Microsoft Power BI Geo Mapping, we should be familiar with several key concepts:

- 1. Basic Data Visualization:** Understanding how to represent data visually, including charts, graphs, and maps, to make data easier to understand and analyze.
- 2. Geospatial Analysis:** Knowledge of handling geographic data, understanding geographic relationships, and interpreting patterns based on location.
- 3. Power BI Interface and Functionalities:** Familiarity with Microsoft Power BI, including navigating the interface, utilizing its tools, and creating reports.
- 4. Data Aggregation and Analysis:** Ability to aggregate data for visualization, analyze it to find trends and patterns, and adjust data granularity.

## **2. Mastering Concepts for tutorial week 6**

**5. Mapping and Layering in Visualizations:** Understanding how to use mapping tools in Power BI, including adding layers, adjusting map settings, and customizing visual elements like pins and symbols.

**6. Interactive Features in Power BI:** Knowledge of creating interactive reports that allow users to explore data through actions like filtering, slicing, and selecting different components.

## 2. Mastering Concepts for tutorial week 6

Let's explore these concepts with practical examples relevant to Australia, focusing on the visualization of business data through Microsoft Power BI. Here are the scenarios:

### 1. Retail Chain Store Analysis:

- **Objective:** Visualize the distribution and sales performance of a retail chain across Australia.
- **Data Used:** Store locations (latitude and longitude), sales data, and product categories.
- **Visualization:** A geo map showing store locations with color-coded pins indicating sales volume. Additional layers can show demographic data, helping identify high-performing regions and potential areas for expansion.



## 2. Mastering Concepts for tutorial week 6

The visualization shows the distribution of sales for a hypothetical retail chain across major Australian cities. Each blue symbol represents a store location, with the size of the circle proportional to the sales volume. This kind of geo mapping can help business analysts identify which areas are performing well and where there might be opportunities for expansion or improvement.



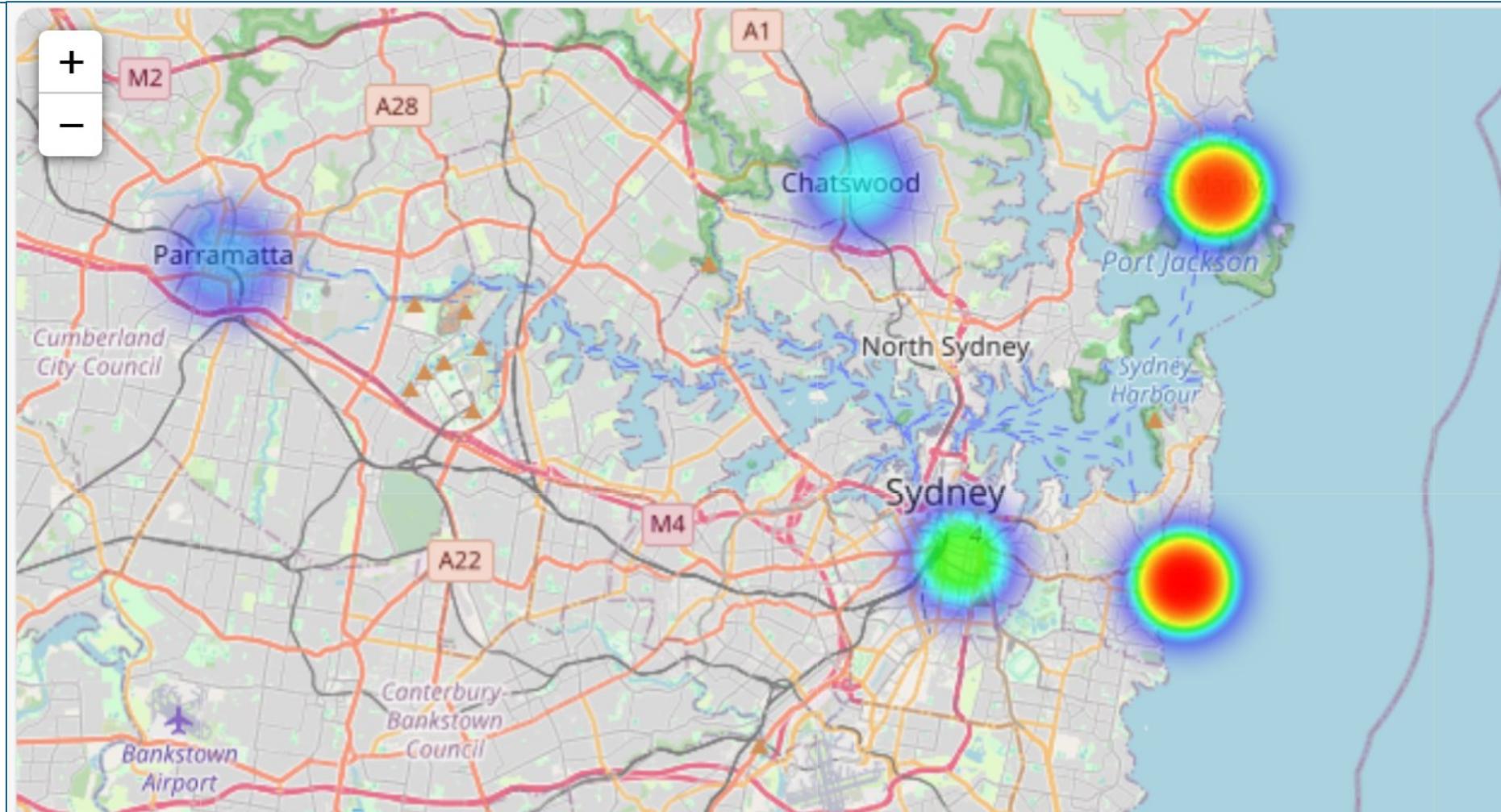
## 2. Mastering Concepts for tutorial week 6

### 2. Real Estate Market Trends:

- **Objective:** Examine real estate price trends across different suburbs in a major city like Sydney.
- **Data Used:** Property sales data, prices, locations, and date of sale.
- **Visualization:** A heat map overlay on a geo map indicating price levels and trends over time, with options to filter by property type or price range.

## 2. Mastering Concepts for tutorial week 6

Here is a heat map overlay on a geo map to illustrate real estate price trends across different suburbs in Sydney. The map shows the distribution of property prices, with warmer colors indicating higher prices.

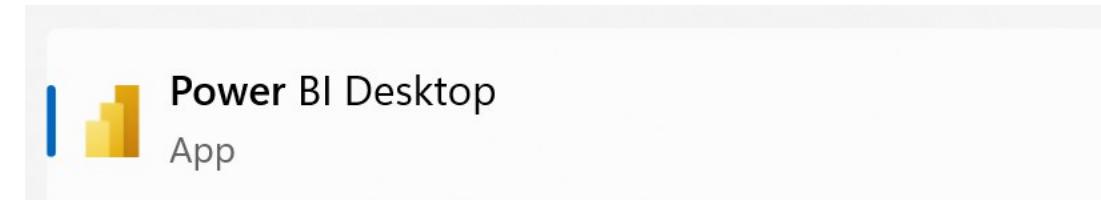


This visualization is helpful for analyzing real estate market trends, allowing stakeholders to identify high-value areas and observe how property prices vary across different suburbs.

### 3. Tutorial week 6 – Power BI GeoMapping

To familiarise yourself with Geo Mapping in PowerBI you are going to use your existing data and add a map to visualise sold quantities for different products.

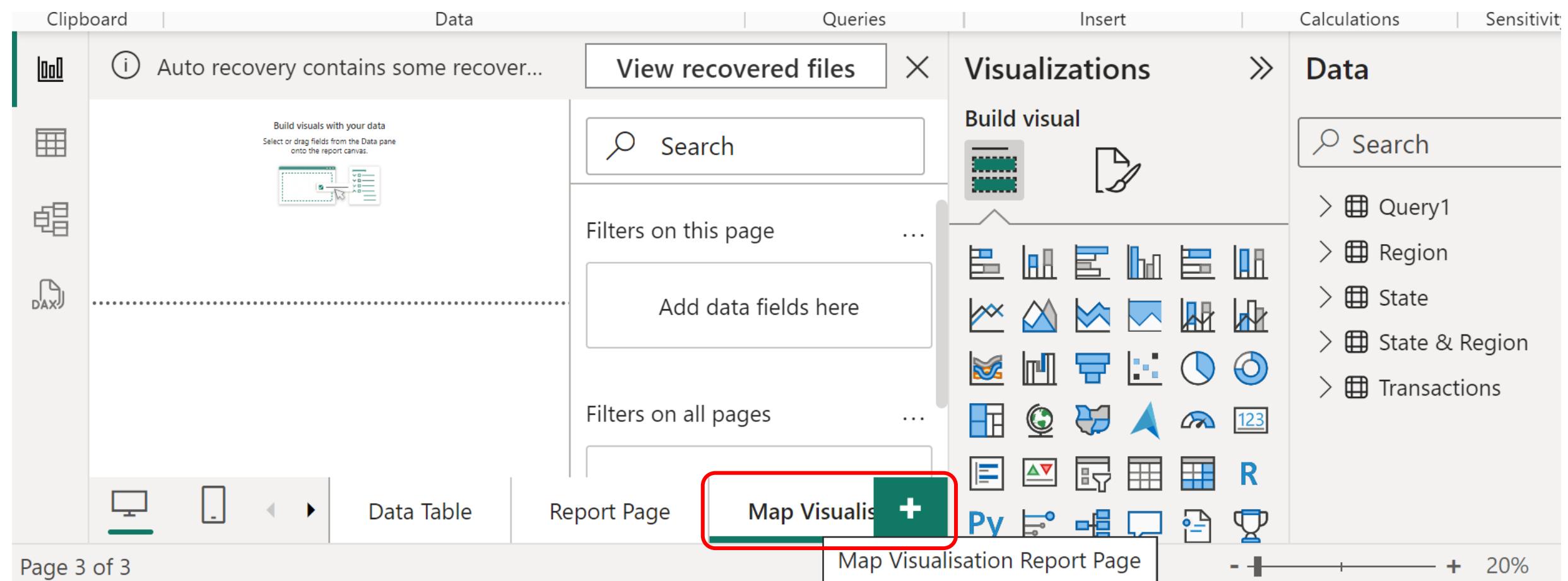
- **Run Power BI Desktop**
- **Open ‘Tutor Week 5.pbix’**
- **Download ‘Location.xlsx’ from Blackboard**
- **Create a new report for map visualisation**



A screenshot of the Microsoft Power BI Desktop interface. The ribbon at the top has tabs for Clipboard, Data, Queries, Insert, Calculations, and Sensitivity. The 'Insert' tab is currently selected, indicated by a grey background. On the left side, there's a vertical toolbar with icons for various data types like tables, charts, and DAX. The main workspace shows a 'View recovered files' dialog box with a search bar and two dropdown menus for 'Product'. To the right of this is the 'Visualizations' pane, which contains a 'Build visual' section with a grid of visualization icons (e.g., line charts, bar charts, maps) and a 'Data' section listing 'Query1', 'Region', 'State', 'State &amp; Region', and 'Transactions'. At the bottom of the screen, there are navigation icons for monitor, smartphone, back, forward, and a green plus sign button, with the text 'Report Page' next to it. A red rectangular box highlights the green plus sign button.

### 3. Tutorial week 6 – Power BI GeoMapping

- Double Click and Choose the name **Map Visualisation Report Page**



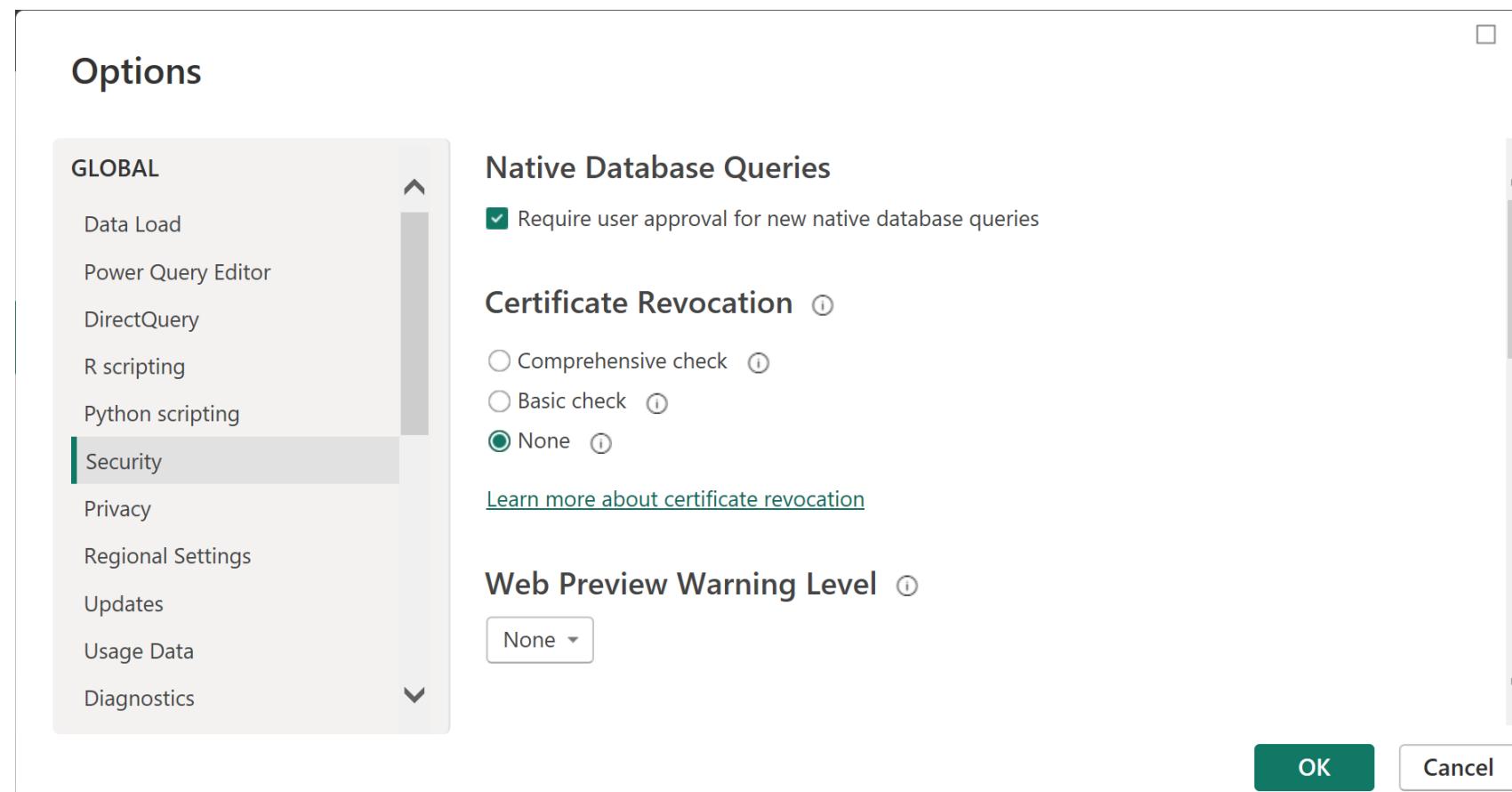
### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Map to insert a map into the report

The screenshot shows the Microsoft Power BI desktop application interface. The top navigation bar includes File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab is currently selected. The main workspace displays a map visualization on the left and the Visualizations pane on the right. The Visualizations pane contains a 'Build visual' section with a 'Map' icon, which is highlighted with a red box. Other icons in the pane include various chart types like bar charts, line charts, and pie charts, along with other map and data-related icons. The bottom navigation bar includes Data Table, Report Page, Map Visualis, and a plus sign icon.

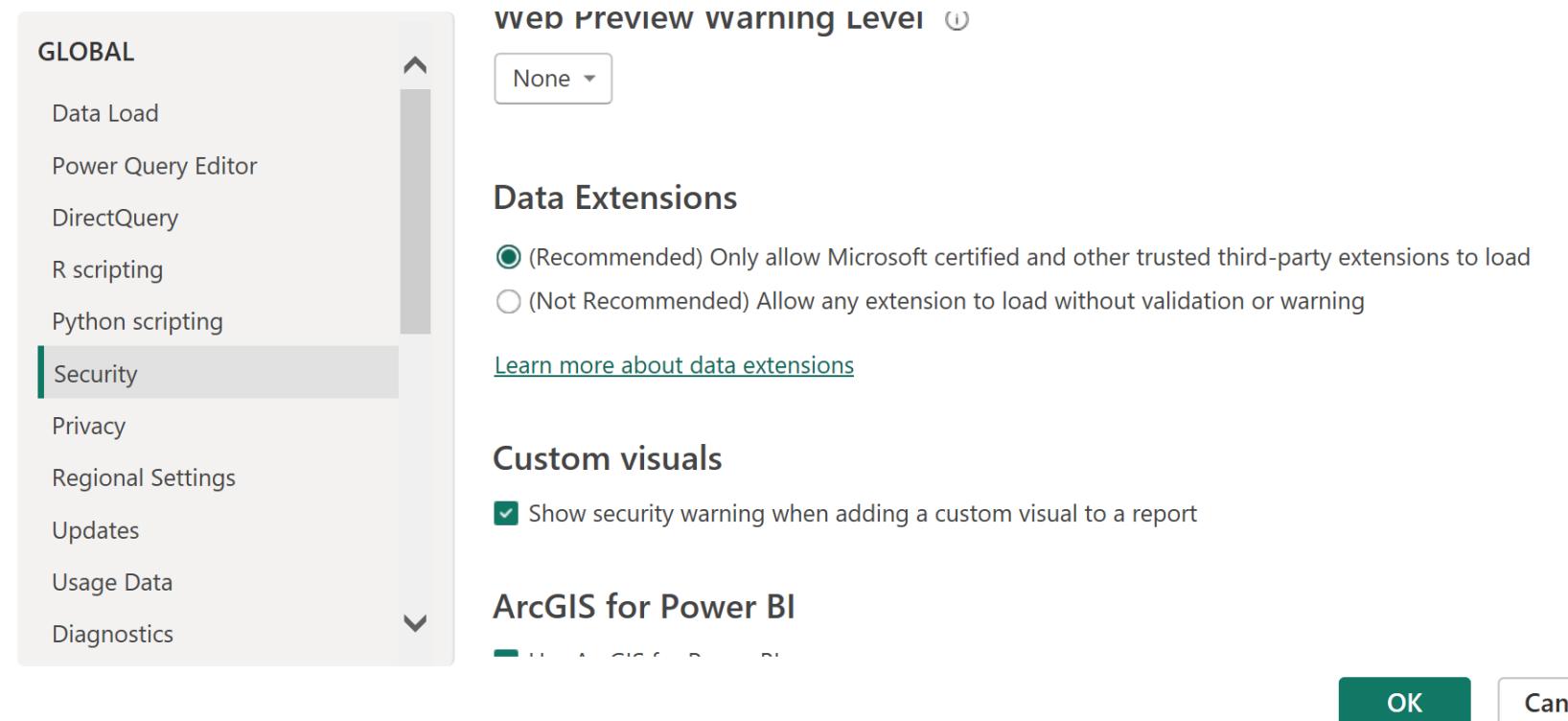
### 3. Tutorial week 6 – Power BI GeoMapping

- We now need to add some data in relation to location. In the Transaction data sets there are Latitude and Longitude fields.
- **Click on Transactions in Fields Pane**
- **Click to Select Latitude**
- **Click to Select Longitude**
- **If you see a warning, then:**  
**File Menu >> Options and Settings >> Options >> Global >> Security**



### 3. Tutorial week 6 – Power BI GeoMapping

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### 3. Tutorial week 6 – Power BI GeoMapping

- We now need to add some data in relation to location. In the Transaction data sets there are Latitude and Longitude fields.

- **Click on Transactions in Fields Pane**

- **Click to Select Latitude**

Map and Filled Map visuals

Use Map and Filled Map visuals

- **Click to Select Longitude**

Authentication Browser

If the authentication window for Power BI (or a data connector) can't open for some reason, we can use your default web browser to authenticate instead.

[Learn more about the authentication browser](#)

Use my default web browser

**File Menu >> Options and  
Settings >> Options >> Global  
>> Security**

Approved ADFS Authentication Services ⓘ

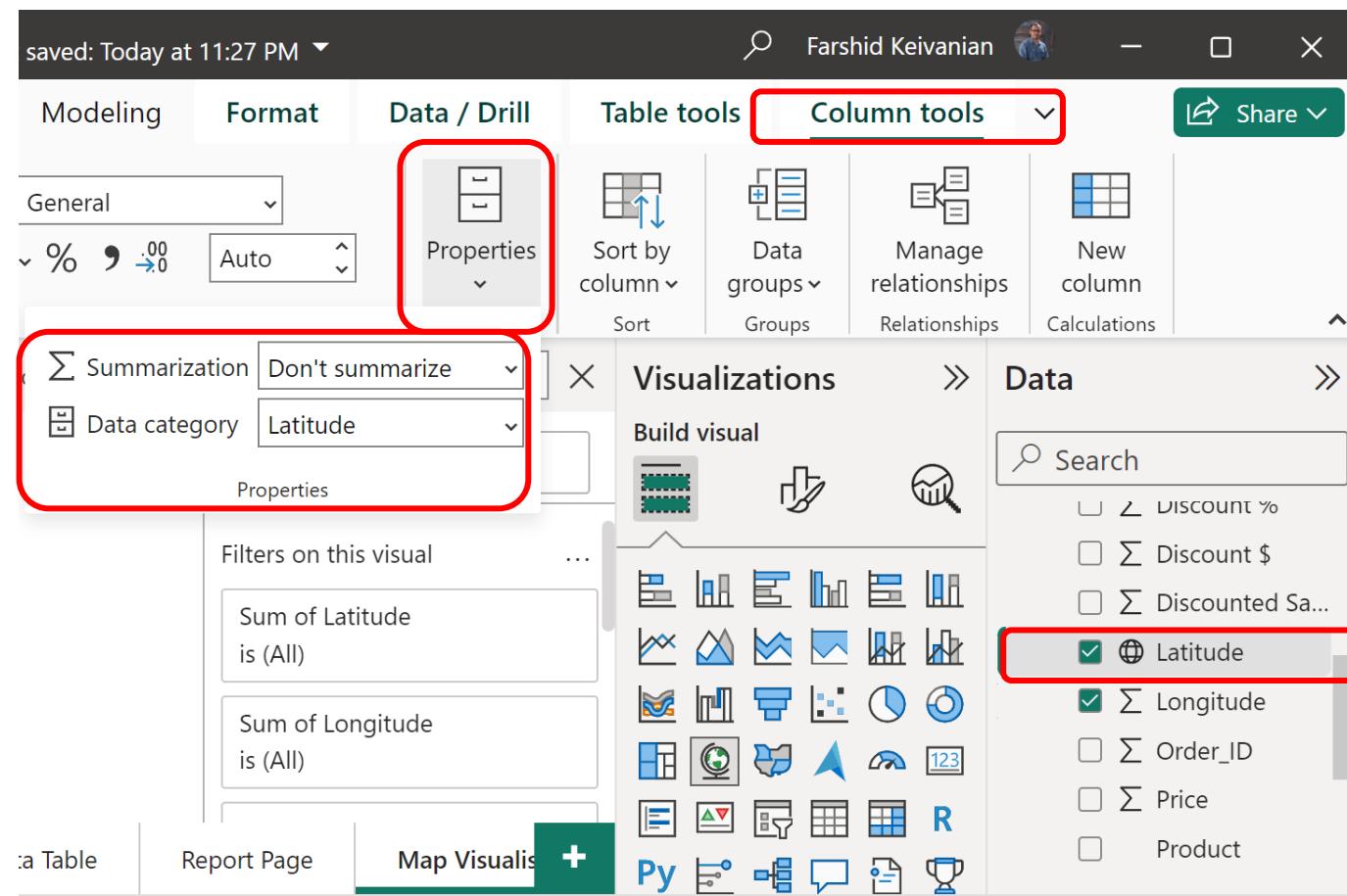
**i** You have not approved any authentication services  
on this computer.

OK

Cancel

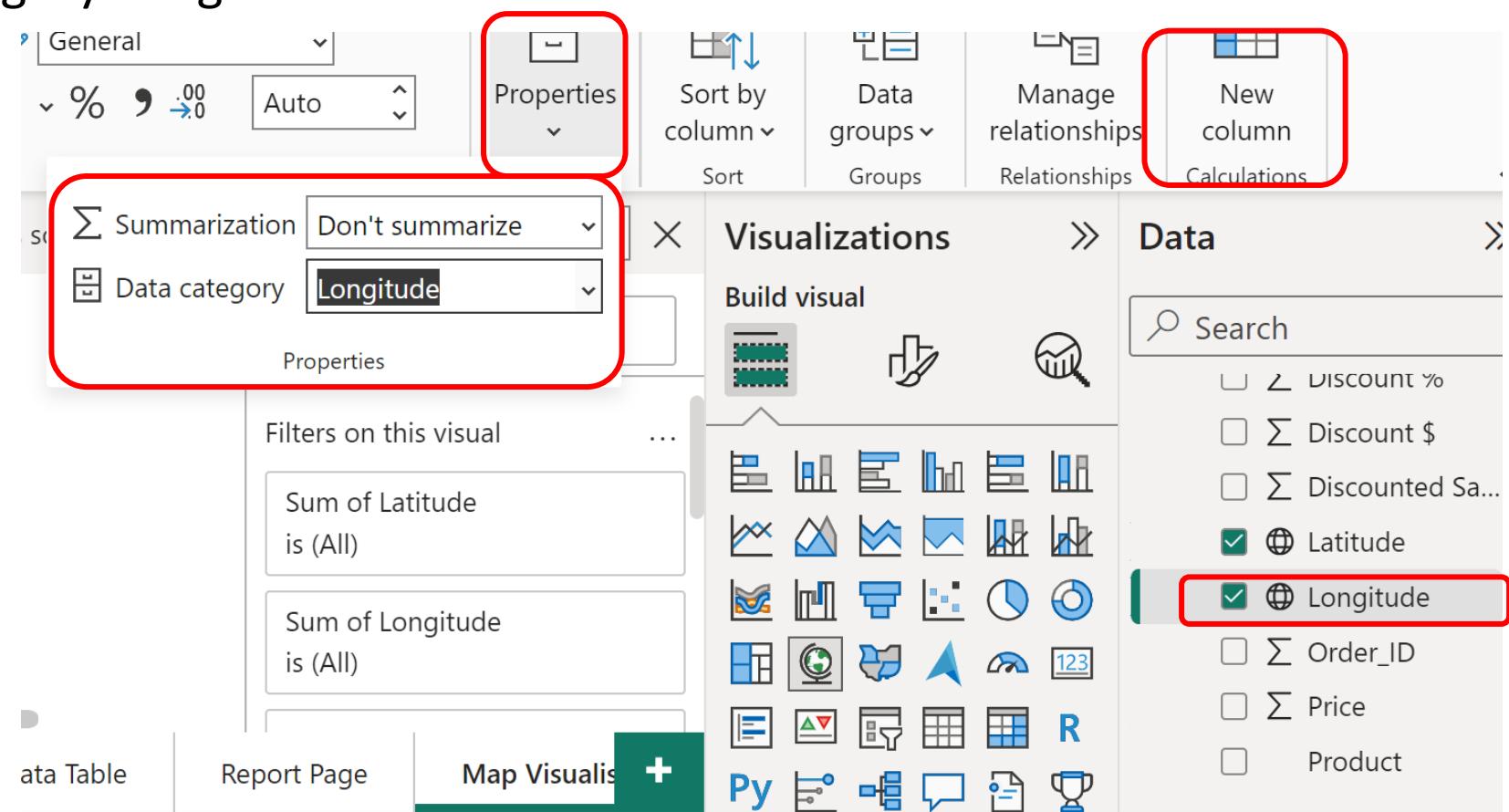
### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Latitude
- Click on Columns tools menu
- Click on Properties
- Select Don't Summarise for Category Latitude



### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Longitude
- Click on Columns tools menu
- Click on Properties
- Select Don't Summarise for Category Longitude



### 3. Tutorial week 6 – Power BI GeoMapping

You will notice that a map appears in the visualisation but is difficult to read.

The screenshot shows the Microsoft Power BI desktop application. The ribbon at the top has tabs: File, Home, Insert, Modeling, Format, Data / Drill, Table tools, Column tools, and Share. The Column tools tab is selected. Below the ribbon, there are sections for Structure (Latitude, Decimal number), Formatting (General, Auto), Properties, Sort by column, Sort, Data groups, Manage relationships, and New column/Calculations. On the left, there's a navigation bar with icons for Home, Report, Data, and DAX. The main area shows a world map with continents labeled: NORTH AMERICA, EUROPE, ASIA, AFRICA, SOUTHERN AMERICA, AUSTRALIA, and ANTARCTICA. The map is highlighted with a red circle. To the right of the map is a 'View recovered files' dialog and a 'Visualizations' pane. The 'Visualizations' pane includes a 'Build visual' section with a search bar and icons for charts and maps, and a grid of visualization icons. The 'Data' pane on the far right lists various data items with checkboxes: Cost of Goods, Date, Discount %, Discount \$, Discounted Sa..., Latitude, Longitude, and Order\_ID. The 'Latitude' and 'Longitude' checkboxes are checked. At the bottom, there are buttons for Data Table, Report Page, Map Visualis (which is highlighted in green), and a plus sign icon.

### 3. Tutorial week 6 – Power BI GeoMapping

- Drag the map handles to enlarge the visualisation to 75% of the report screen.

The screenshot shows the Power BI desktop application interface. The top navigation bar includes File, Home, Insert, Modeling, Format, Data / Drill, Table tools, Column tools (which is selected), and Share. The main workspace features a world map with blue data points. A red circle highlights the map area. To the right of the map are sections for View recovered files, Visualizations, and Data. The Visualizations section contains a 'Build visual' button and a grid of visualization icons. The Data section lists various data fields with checkboxes:  Σ Cost of Goods,  Date,  Σ Discount %,  Σ Discount \$,  Σ Discounted Sa...,  Latitude,  Longitude, and  Σ Order\_ID. At the bottom, there are tabs for Data Table, Report Page, Map Visualis (with a plus icon), and Py, along with zoom controls and a status bar indicating 30%.

### 3. Tutorial week 6 – Power BI GeoMapping

- The current map visualisation displays all locations for the data set but does not include any measures. To add quantity of all stock sold:
- Click on Quantity Sold in Data Pane to add this measure to the visualisation**

The screenshot shows the Power BI desktop application interface. At the top, the ribbon tabs are visible: File, Home, Insert, Modeling, Format, Data / Drill, Table tools, Column tools (which is selected), and Share. The main area features a map visualization of the world, with several blue bubbles representing data points. On the left, there's a vertical pane with icons for Table, Matrix, DAX, and Query. The right side has sections for Visualizations (with a 'Build visual' button) and Data (with a search bar and a list of measures). A red box highlights the checkbox for 'Σ Quantity S...' in the Data pane, indicating it's selected. The status bar at the bottom shows 'Page 3 of 3'.

### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Date >> Date Hierarchy >> Select Year to add time component

The screenshot shows the Power BI desktop application interface. The ribbon at the top is active on the "Column tools" tab. On the left, there's a vertical ribbon bar with icons for Structure, Formatting, Sort, Groups, Relationships, and Calculations. The main area displays a world map with several red and blue circular markers. To the right of the map is a "View recovered files" dialog box. Below the map are sections for "Filters on this visual" showing "Date - Year is (All)" and "Latitude is (All)". The bottom navigation bar includes "Data Table", "Report Page", "Map Visualis", and a green "+" button. On the far right, the "Data" pane is open, showing a search bar and a list of data items. Under the "Date" section, the "Year" checkbox is checked and highlighted with a red rectangle. Other options like "Quarter", "Month", and "Day" are also listed.

Tutor Week 6 • Last saved: Today at 11:27 PM

File Home Insert Modeling Format Data / Drill Table tools Column tools Share

Latitude  
Decimal number

General \$ % , .  
Auto

Properties Sort by column Sort Data groups Manage relationships New column Relationships Calculations

Structure Formatting

Auto recovery contains some recover...

View recovered files

Search

Build visual

Date - Year is (All)

Latitude is (All)

Cost of Goods

Date

Date Hierar...

Year

Quarter

Month

Day

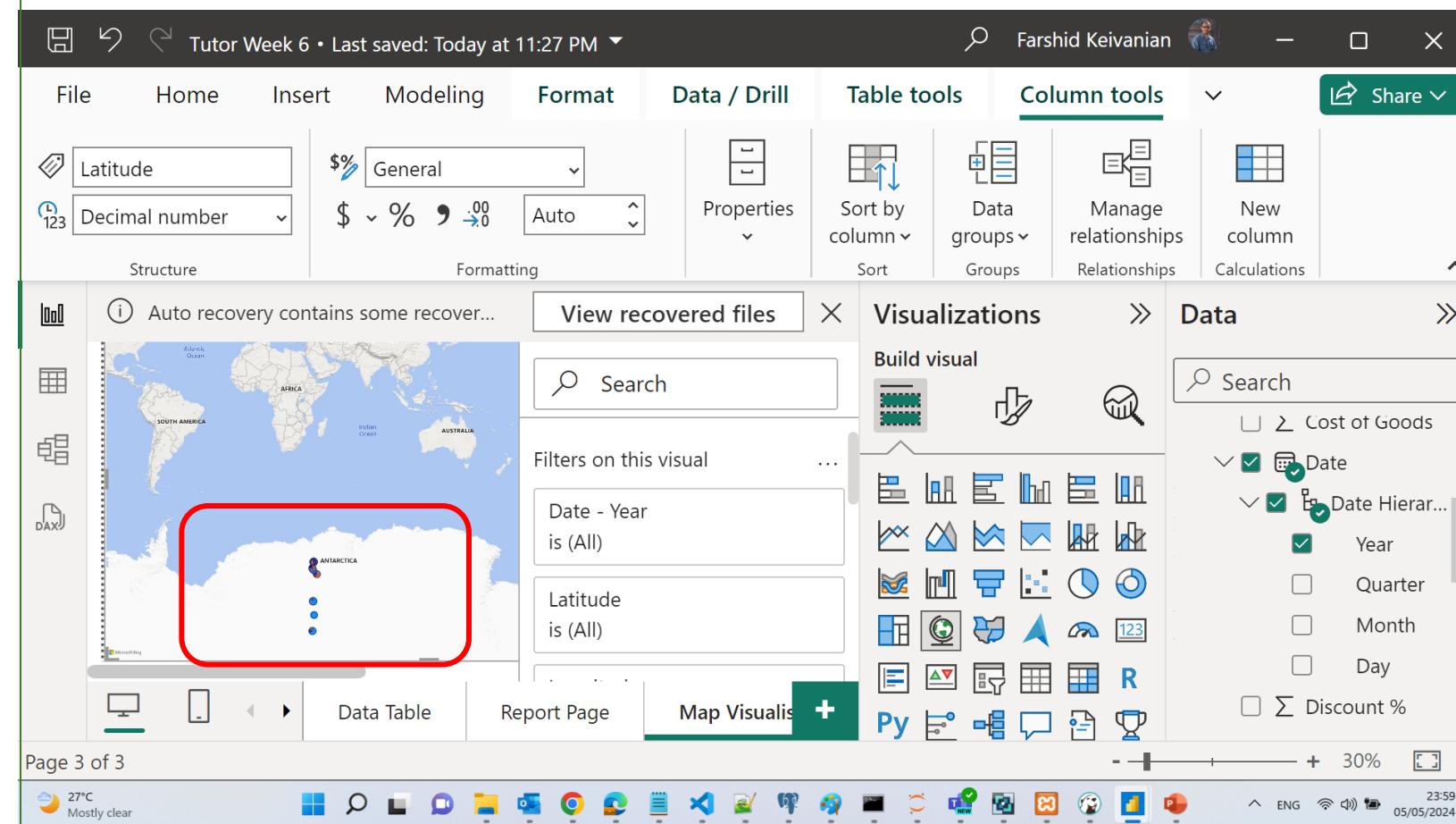
Σ Discount %

Data Table Report Page Map Visualis + Py

Page 3 of 3

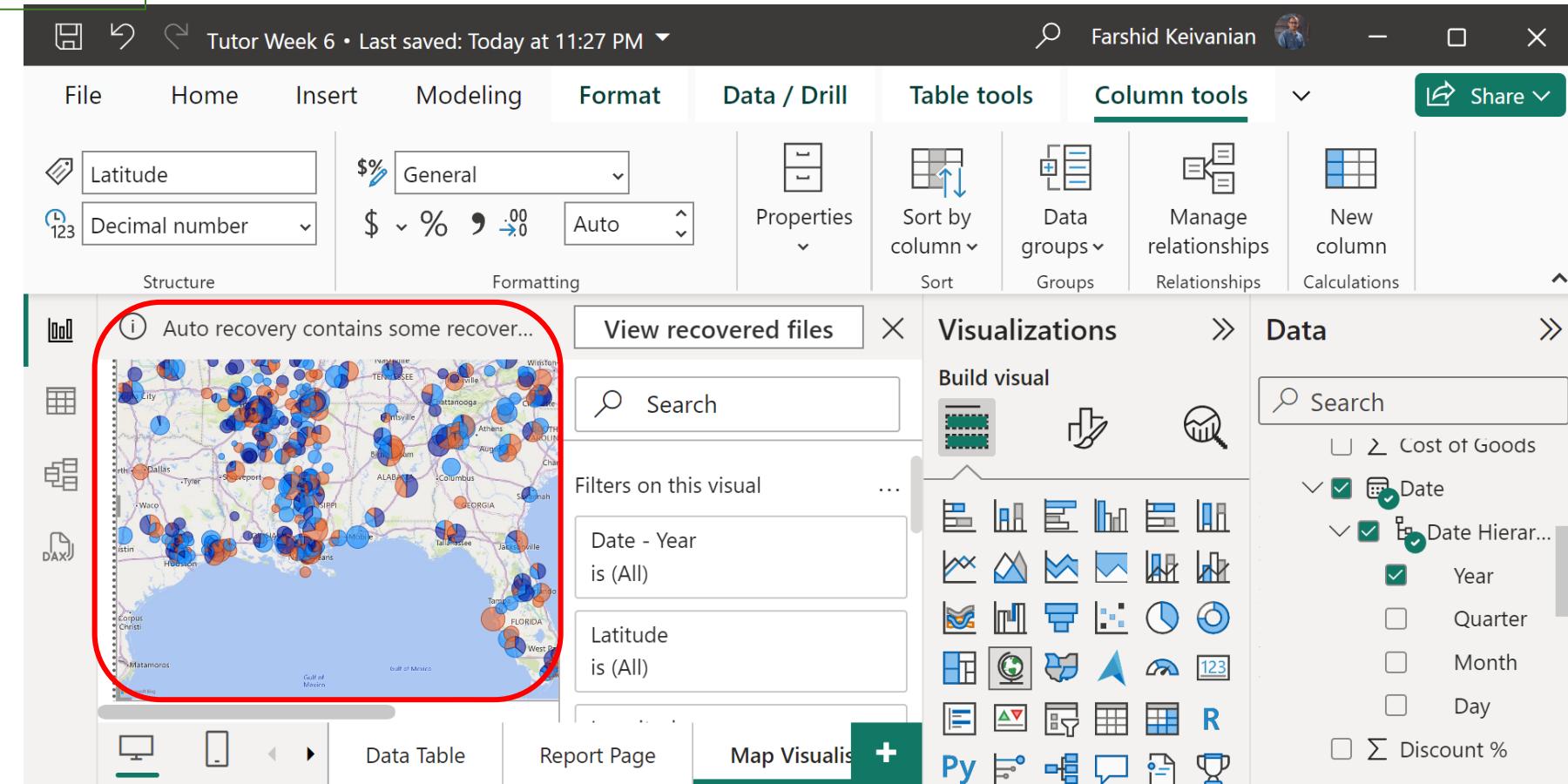
### 3. Tutorial week 6 – Power BI GeoMapping

- Drag the mouse until Antarctica is displayed
- You will notice that 7 data points are displayed and obviously these are errors and need further investigation. An advantage of visualisations is that it makes unusual data easier to identify. You can move your mouse over each data point to obtain more details.



### 3. Tutorial week 6 – Power BI GeoMapping

- Drag the mouse until USA is displayed
- Click on Map and Scroll mouse to Zoom in



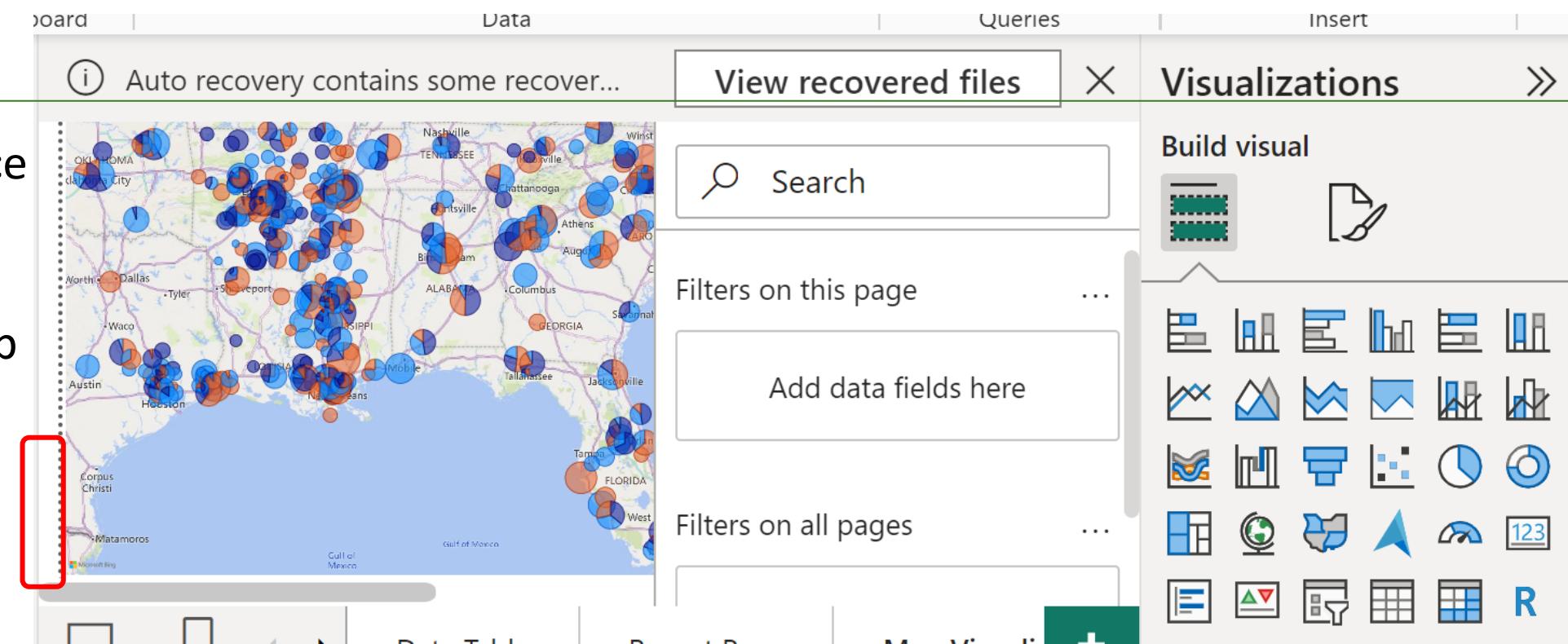
### 3. Tutorial week 6 – Power BI GeoMapping

#### Filtering Data

The larger bubble indicates a larger quantity sold. At the moment all sales of products for all years are displayed. It would be more meaningful if you could select the sales details of particular products in particular years. You can do this by adding a Slicer to your report. A slicer is an alternate way of filtering that narrows the portion of the dataset shown in the other visualizations

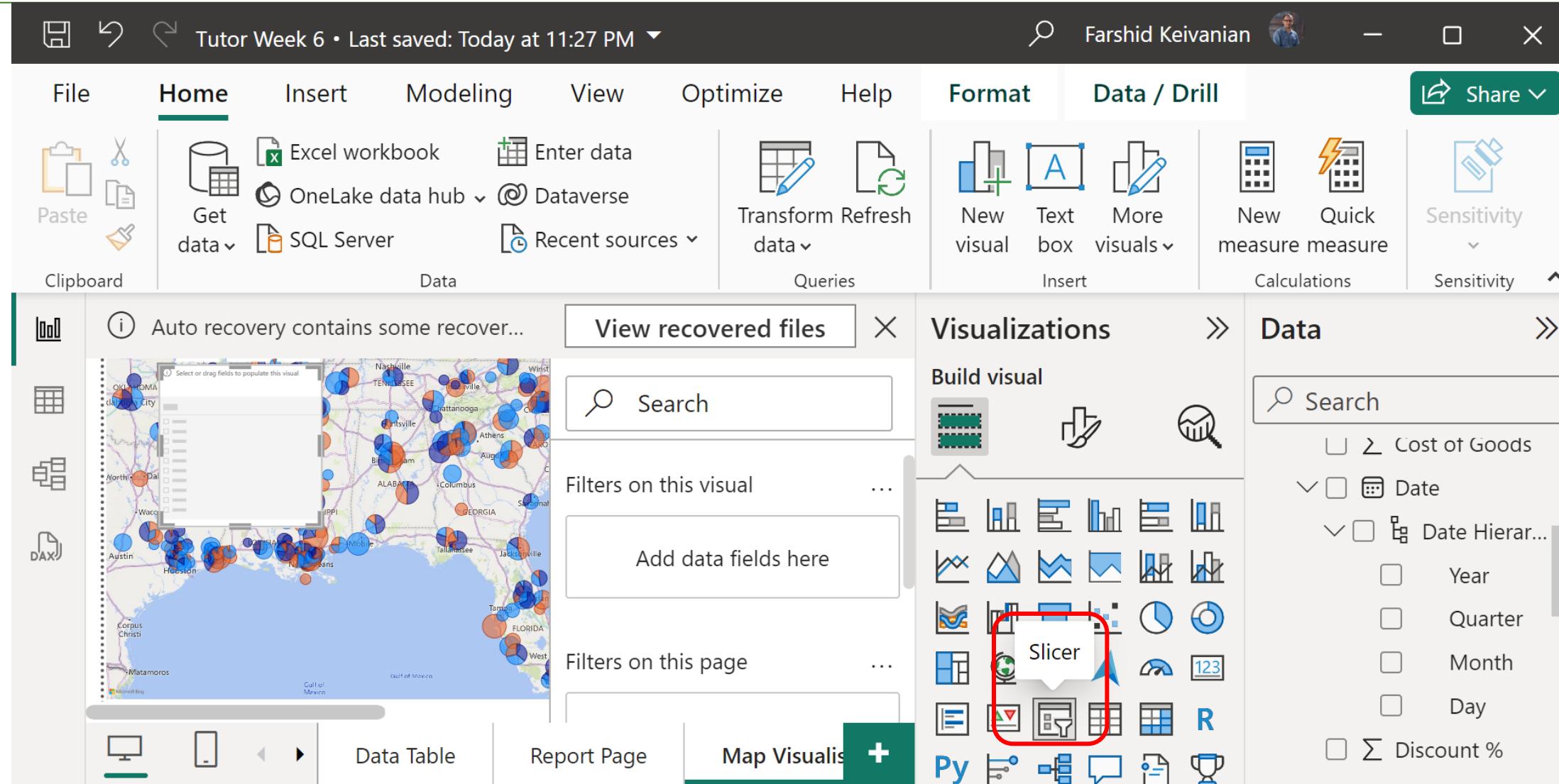
in a report. To do this:

- **Click on empty space** the report page outside the GeoMap visualisation to **de-select** the map



### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Slicer to insert this tool in your report
- The Slicer need information about what field will be used as a filter.



### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Product to add this field to the Slicer

The screenshot shows the Power BI desktop application interface. The ribbon menu at the top includes File, Home (selected), Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab has sections for Clipboard (Paste, Get data from, SQL Server), Data (Excel workbook, OneLake data hub, Dataverse, Recent sources), Queries (Transform data, Refresh data), Insert (New visual, Text box, More visuals), Calculations (New measure, Quick measure), and Sensitivity. The main workspace displays a map of the southeastern United States with various data points represented by colored circles. A legend on the left side of the map lists categories: Product (Boots, Bucket, Gloves, Nails, Rain Jacket, Tarp, Water). A red box highlights the 'Product' category in the legend. To the right of the map is a 'View recovered files' dialog box with a search bar and a 'Filters on this visual' section containing a dropdown for 'Product' set to '(All)'. Below the map is a 'Map Visualizations' section with a '+' button. The bottom navigation bar includes icons for Data Table, Report Page, and Map Visualizations, along with zoom controls and a 30% scale indicator.

### 3. Tutorial week 6 – Power BI GeoMapping

- Click on Map to resize it
- Move the Slicer on the right side of Map

The screenshot shows the Microsoft Power BI desktop application interface. The top ribbon menu is visible with tabs: File, Home (selected), Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab has options like Paste, Get data, and SQL Server. The Data tab has options like Enter data, OneLake data hub, Dataverse, and Recent sources. The Insert tab has options like New visual, Text box, More visuals, New measure, Quick measure, Calculations, and Sensitivity. The Format tab has options like Transform data, Refresh data, and Insert. The Data / Drill tab has options like Build visual, Search, and various chart icons. On the left, there's a navigation pane with icons for Home, Data, DAX, and a redacted section. The main workspace contains a world map visualization with a red circle around it. To the right of the map is a 'View recovered files' dialog box with a search bar and filters for Date - Year and Latitude. Below the map is a 'Map Visualizations' section with a green '+' button. On the far right, there's a 'Data' pane with a search bar and a list of fields: Discounted Sa..., Latitude (checked), Longitude (checked), Order\_ID, Price, Product, Product\_ID, and Profit.

Tutor Week 6 • Last saved: Today at 12:23 AM

File Home Insert Modeling View Optimize Help Format Data / Drill Share

Paste Get data SQL Server

Clipboard Data

Enter data OneLake data hub Dataverse Recent sources

Transform data Refresh data

New visual Text box More visuals

New measure Quick measure Calculations

Sensitivity

Auto recovery contains some recover...

View recovered files

Search

Filters on this visual

Date - Year  
is (All)

Latitude  
is (All)

Build visual

Map Visualizations

+

Discounted Sa...  
Latitude  
Longitude  
Order\_ID  
Price  
Product  
Product\_ID  
Profit

### 3. Tutorial week 6 – Power BI GeoMapping

- Select Water: The Geomap visualization changes accordingly.

The screenshot shows the Power BI desktop application interface. The top navigation bar includes File, Home (selected), Insert, Modeling, View, Optimize, Help, Format, Data / Drill, Share, and various data source and transformation icons. The main workspace displays a world map with continents labeled. A red box highlights the 'Filters on this visual' pane, which contains a funnel icon, a 'Product' dropdown set to '(All)', and a list of product categories: Product, Boots, Bucket, Gloves, Nails, Rain Jacket, Tarp, and Water. Below this is a placeholder 'Add data fields here'. To the right of the workspace are sections for Visualizations (with a 'Build visual' button) and Data (with a search bar and a list of data fields). The bottom navigation bar includes Data Table, Report Page, Map Visualis (highlighted in green), and Py.

Auto recovery contains some recover...

View recovered files

Search

Filters on this visual

Product  
is (All)

Add data fields here

Map Visualis

Py

Visualizations

Build visual

Data

Search

Σ Discounted Sa...

Latitude

Longitude

Σ Order\_ID

Σ Price

Product

Product\_ID

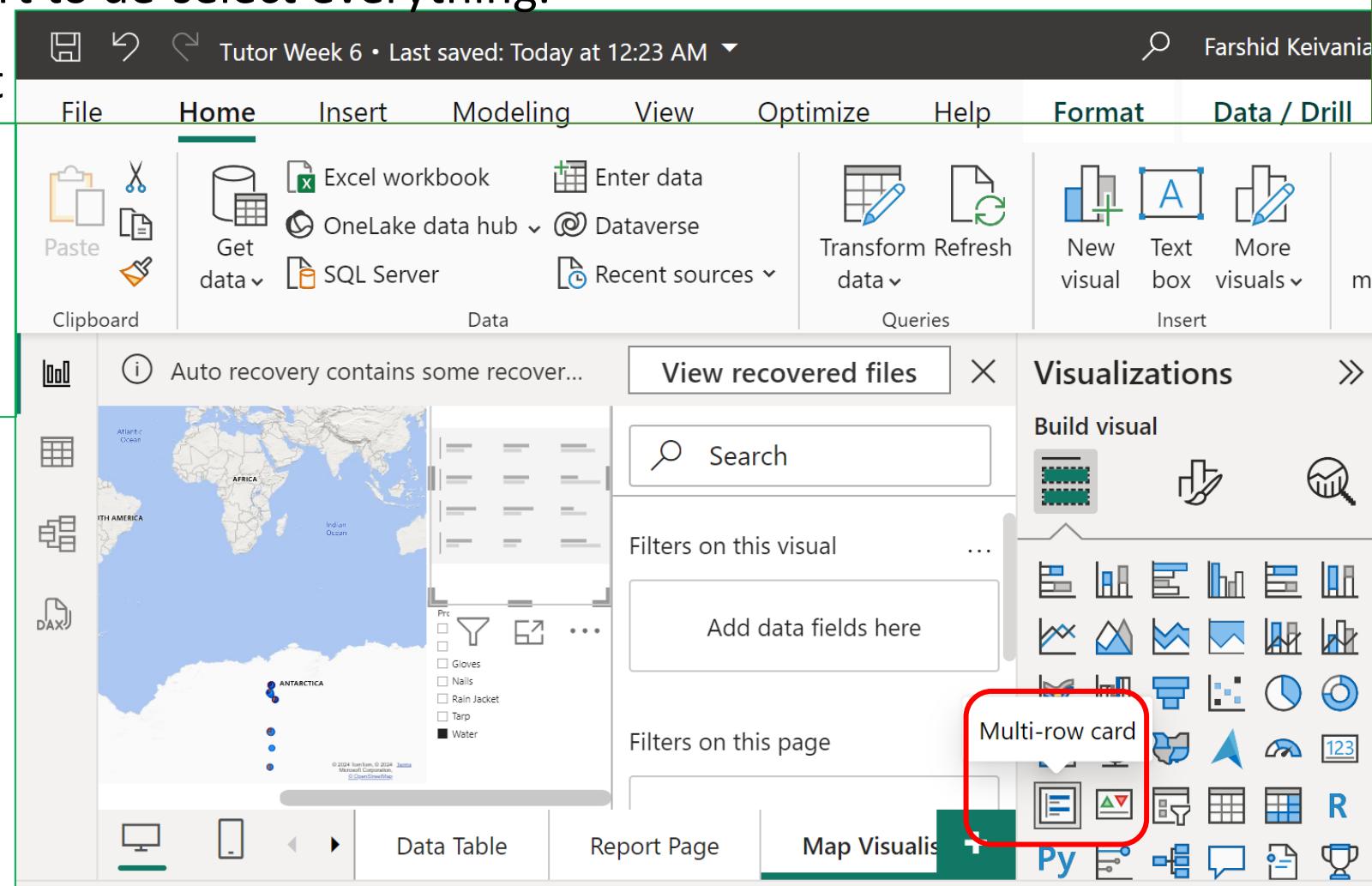
Profit

### 3. Tutorial week 6 – Power BI GeoMapping

It would be good to understand the Profit and Quantity for Products sold in a particular location or area. You can do this by adding a Multi-row card to your report. To do this:

- **Click on a blank area of your report to de-select everything.**
- **Click on Multi-row card to insert it**

If you replace one of your existing visualisations with the new one you can click to undo the action



### 3. Tutorial week 6 – Power BI GeoMapping

Add the following fields to your Multi-row card in the following order;

- City
- Product
- Quantity Sold
- Profit

If you replace one of your existing visualisations with the new one you can click to undo the action.

The screenshot shows the Power BI desktop application. The ribbon menu is open, with the 'Home' tab selected. The 'Data' tab is also visible. In the center, there is a world map visualization. A tooltip for the map says: 'Auto recovery contains some recoverable files. View recovered files'. Below the map, there are two multi-row cards. The first card has columns 'Sum of Quantity' and 'Sum of Profit' and lists three cities: EMERSON, FRONT ROYAL, and GARDNER. The second card has columns 'Prc' and 'Water' and lists three products: Gloves, Nails, and Rain Jacket. On the right side, there are sections for 'Visualizations' and 'Data'. The 'Visualizations' section shows various chart icons. The 'Data' section shows a list of fields with checkboxes: Product (checked), Product\_ID (unchecked), More options (unchecked), and Σ Quantity Sold (checked). A red box highlights the 'Σ Quantity Sold' checkbox.

### 3. Tutorial week 6 – Power BI GeoMapping

- Drag the corner of the visualisatios to resize the Map and Multi-row card – to better see them!

- Click on Boots

The screenshot shows the Power BI desktop interface with the following elements:

- Top Bar:** Includes File, Home (selected), Insert, Modeling, View, Optimize, Help, Format, Data / Drill, Share, and Sensitivity.
- Clipboard:** Paste, Get data (with options for Excel workbook, OneLake data hub, and SQL Server), Recent sources.
- Data:** Transform, Refresh data, New visual, Text box, More visuals, New measure, Quick measure, Calculations, and Sensitivity.
- Visualizations:** A map of the Indian Ocean region with a callout for "View recovered files". The callout contains a search bar and a section titled "Filters on this visual" with the condition "Product is (All)".
- Data Table:** A table showing sales data for various products across different cities. The table includes columns for City, Product, Sum of Quantity, and Sum of Profit. The "Boots" product row is highlighted with a red circle.
- Right Panel:** Shows available data fields: Order\_ID, Price, Product, Product\_ID, Profit, Quantity Sold, Sales Revenue, and a section for "Build visual" with various chart icons.

A red circle highlights the "Boots" row in the data table.

City	Product	Sum of Quant...	Sum of Profit
EDDINGTON	Boots	540	\$482,0434
EDENTON	Boots	320	\$345,8396
EDGARD	Boots	580	\$413,7355
EDISON	Boots	509	\$387,8085
EL CAJON	Boots	190	\$141,9618

### 3. Tutorial week 6 – Power BI GeoMapping

- Click on one of the bubbles on the Map e.g. one in USA part → The Multi-row card updates automatically for the location selected

The screenshot shows the Power BI desktop application interface. The top navigation bar includes File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab is selected.

The main workspace displays a map of the Caribbean and surrounding regions. A red circle highlights a cluster of bubbles in the USA. To the right of the map is a data card titled "View recovered files" showing a list of products and their quantities:

City	Product	Sum of Quant.
EDDINGTON	Boots	540
EDENTON	Boots	320
EDGARD	Boots	580
EDISON	Boots	509
EL CAJON	Boots	190

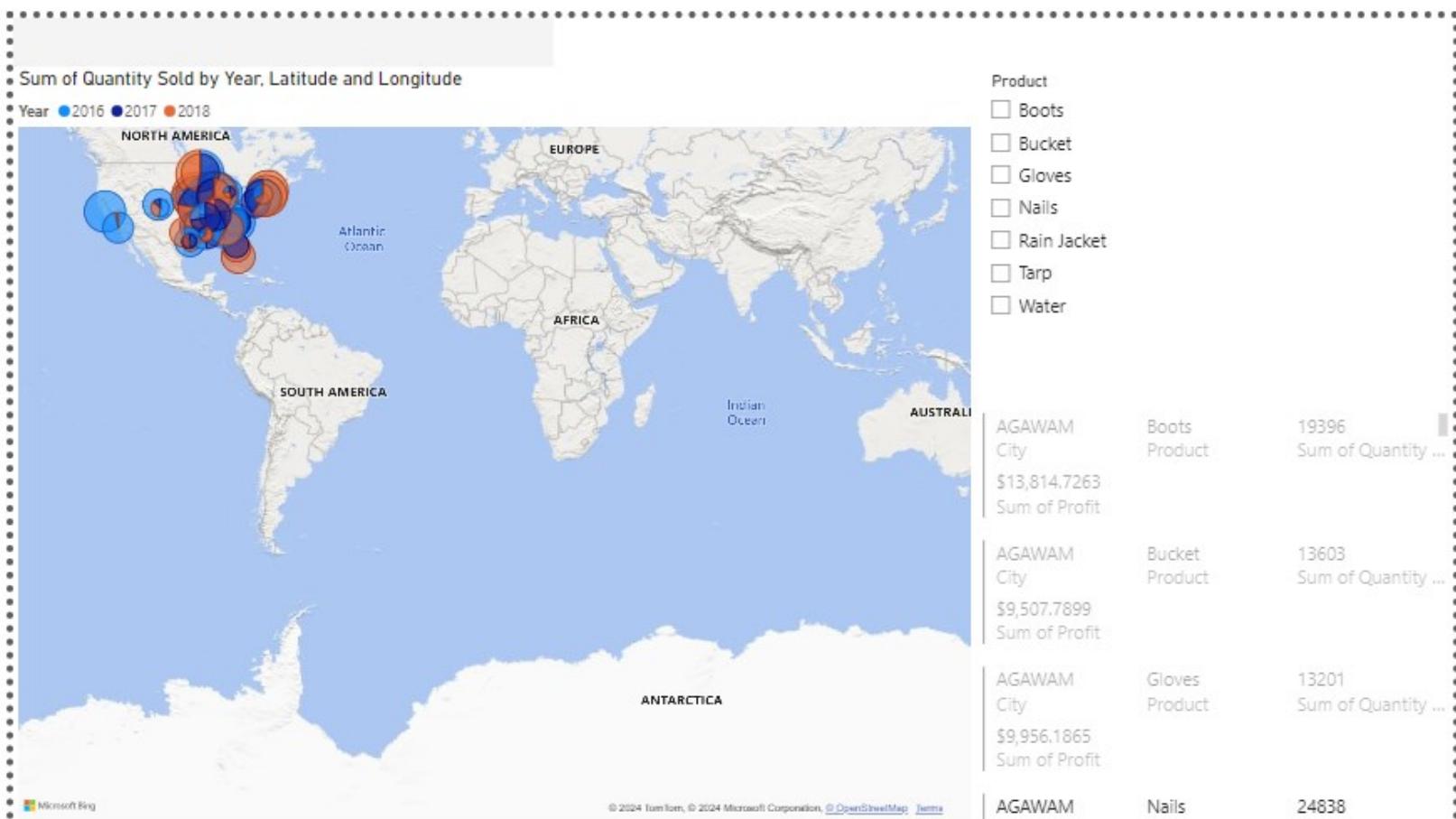
Below the map are filters for "Date - Year" (is (All)) and "Latitude" (is (All)).

The ribbon menu on the left includes Paste, Get data (with options for Excel workbook, OneLake data hub, and SQL Server), Transform (with Refresh data), New visual, Text box, More visuals, New measure, Quick measure, and Calculations. The Sensitivity section is also visible.

The bottom navigation bar includes Data Table, Report Page, Map Visualisation (selected), and Py.

### 3. Tutorial week 6 – Power BI GeoMapping

- **De-select Boots** to de-select this product and display all data (Other than selecting sales details for individual Products it would be good to display sales details also be year. We can achieve this by adding a Table to our report. )
- **Resize Visualisations** to see like here!
- **Collapse all Panes**  
**(Data, Visualisaitons, and Filters)**



### 3. Tutorial week 6 – Power BI GeoMapping

- Expand Visualisation Pane and Click on Table to insert a table

The screenshot shows the Power BI desktop application interface. The ribbon is visible at the top with tabs: File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab is selected.

The main area displays a map of the world titled "Sum of Quantity Sold by Year, Latitude and Longitude". The map shows data points for three years: 2016 (blue), 2017 (orange), and 2018 (red). A legend on the right indicates the year by color. Below the map is a data card for AGAWAM, showing sales details for various products like Boots, Bucket, Gloves, Nails, Rain Jacket, Tarp, and Water.

The Visualizations pane on the right is expanded, showing a grid icon highlighted with a red box. Other icons in the pane include bar charts, line graphs, pie charts, and other visualization types.

The status bar at the bottom shows "Map Visualisation Report Page" and has icons for monitor, smartphone, back, forward, Data Table, Report Page, and a green plus sign.

### 3. Tutorial week 6 – Power BI GeoMapping

- Collapse Visualisation Pane, Expnd Data Pane, Click on Year while the Table is selected!
- Click on different Years (2016, 2017, 2018) tp check the integration between the various visualisations. (You can press control and select different or all products)

The screenshot shows the Microsoft Power BI desktop application interface. The ribbon menu is visible at the top, with the 'Home' tab selected. Below the ribbon, there's a central workspace containing a map visualization titled 'Sum of Quantity Sold by Year, Latitude and Longitude'. The map shows data points for three years: 2016 (blue), 2017 (orange), and 2018 (red). To the right of the map is a data card with a table showing sales details for AGAWAM City, including rows for Boots, Bucket, Gloves, Nails, Rain Jacket, Tarp, and Water. A red box highlights the 'Year' column in this table.

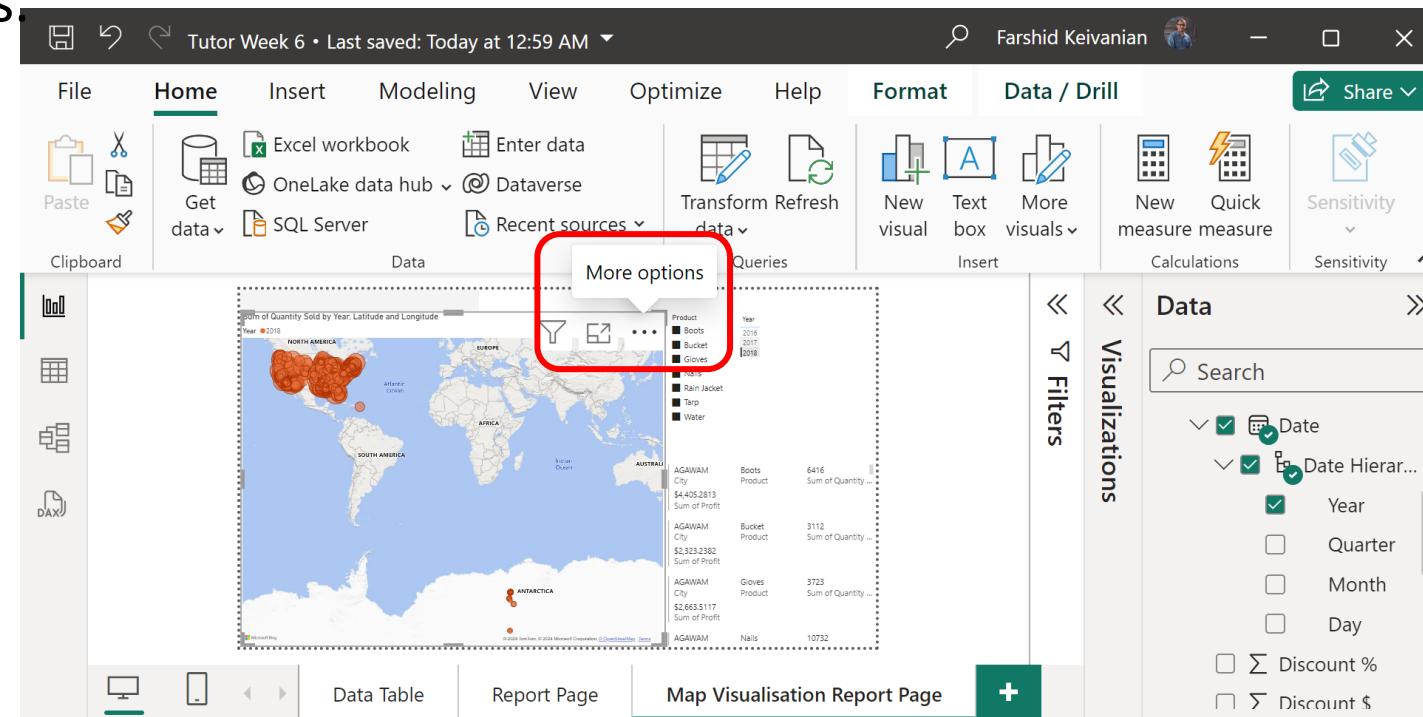
On the left side, there's a vertical pane with icons for 'Clipboard', 'Data', 'DAX', and 'Visualizations'. The 'Visualizations' icon is currently selected. On the right side, there are two panes: a 'Data' pane and a 'Visualizations' pane. The 'Data' pane contains a search bar and a list of filters, some of which are highlighted with a red box. The 'Visualizations' pane shows a list of available visualizations, with 'Map Visualisation' currently selected.

The bottom navigation bar includes icons for 'Data Table', 'Report Page', 'Map Visualisation Report Page', and a '+' button. The status bar at the bottom right shows the report name 'Tutor Week 6' and the last save time 'Today at 12:51 AM'.

### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

To work with the GeoMap visualization in Power BI and access its editing options, we can follow these steps:

- 1. Select the GeoMap Visualization:** On your Power BI report page, click on the GeoMap visualization (the map you have displayed on the screen). This action will select the map.
- 2. Open the Context Menu:** Right-click on the GeoMap visualization to open the context menu. This menu typically appears with several options.
- 3. If there is 'Edit' then it:** From the context menu, look for an option labeled 'Edit' or similar. Click this option to open the editing mode for the GeoMap.



### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

#### 4. Access and Adjust GeoMap Settings:

- **Basemap:** In the editing options, you can change the basemap. Basemaps provide different background styles such as streets, satellite, or plain backgrounds, which help contextualize the data you are displaying.

The screenshot shows the Microsoft Power BI interface with a world map visualization. A context menu is open over the map, with the 'More options' option highlighted by a red box. The menu also includes '...', 'Format', and 'Data / Drill' options. The map displays data points for various products across continents. The ribbon menu at the top includes File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Data pane on the right shows filters for Date, Date Hierarchies, Year, Quarter, Month, Day, and measures for Discount % and Discount \$. The bottom navigation bar includes Data Table, Report Page, and Map Visualisation Report Page.

Tutor Week 6 • Last saved: Today at 12:59 AM

File Home Insert Modeling View Optimize Help Format Data / Drill Share

Paste Get data SQL Server Enter data OneLake data hub Dataverse Transform Refresh data New visual Text box More visuals New measure measure Quick Sensitivity Sensitivity

Clipboard Data Recent sources

More options

Product: Boots, Gloves, Nails, Rain Jacket, Tarp, Water

Year: 2016, 2017, 2018

Visualizations

Data

Search

Date

Date Hierarchies

Year

Quarter

Month

Day

$\sum$  Discount %

$\sum$  Discount \$

Map Visualisation Report Page

### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

- **Map Theme:** You can select from different map themes that are available. These themes might include styles like heat maps, clusters, or the display of individual data points. Choose the theme that best fits the data representation you need.

The screenshot shows the Microsoft Power BI desktop application interface. A world map visualization is displayed in the center, showing data points for various countries. A red rectangular callout box highlights the 'More options' button, which is located in the top right corner of the map's data pane. The data pane also displays a legend for products and a table of specific data points. The ribbon menu at the top includes tabs for File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and several other options. The 'Home' tab is currently selected. On the right side, there are panes for 'Data', 'Visualizations', and 'Filters'. The 'Data' pane shows a search bar and filter settings for date, year, quarter, month, and day. The 'Visualizations' pane shows a preview of the map and some filters applied. The 'Filters' pane shows a list of filters applied to the data.

More options

Product	Year	Sum of Quantity Sold
Boots	2016	6416
Boots	2017	3112
Boots	2018	2,323,2382
Gloves	2016	3723
Nails	2016	2,663,5117
Rain Jacket	2016	6416
Tarp	2016	3112
Water	2016	10732

### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

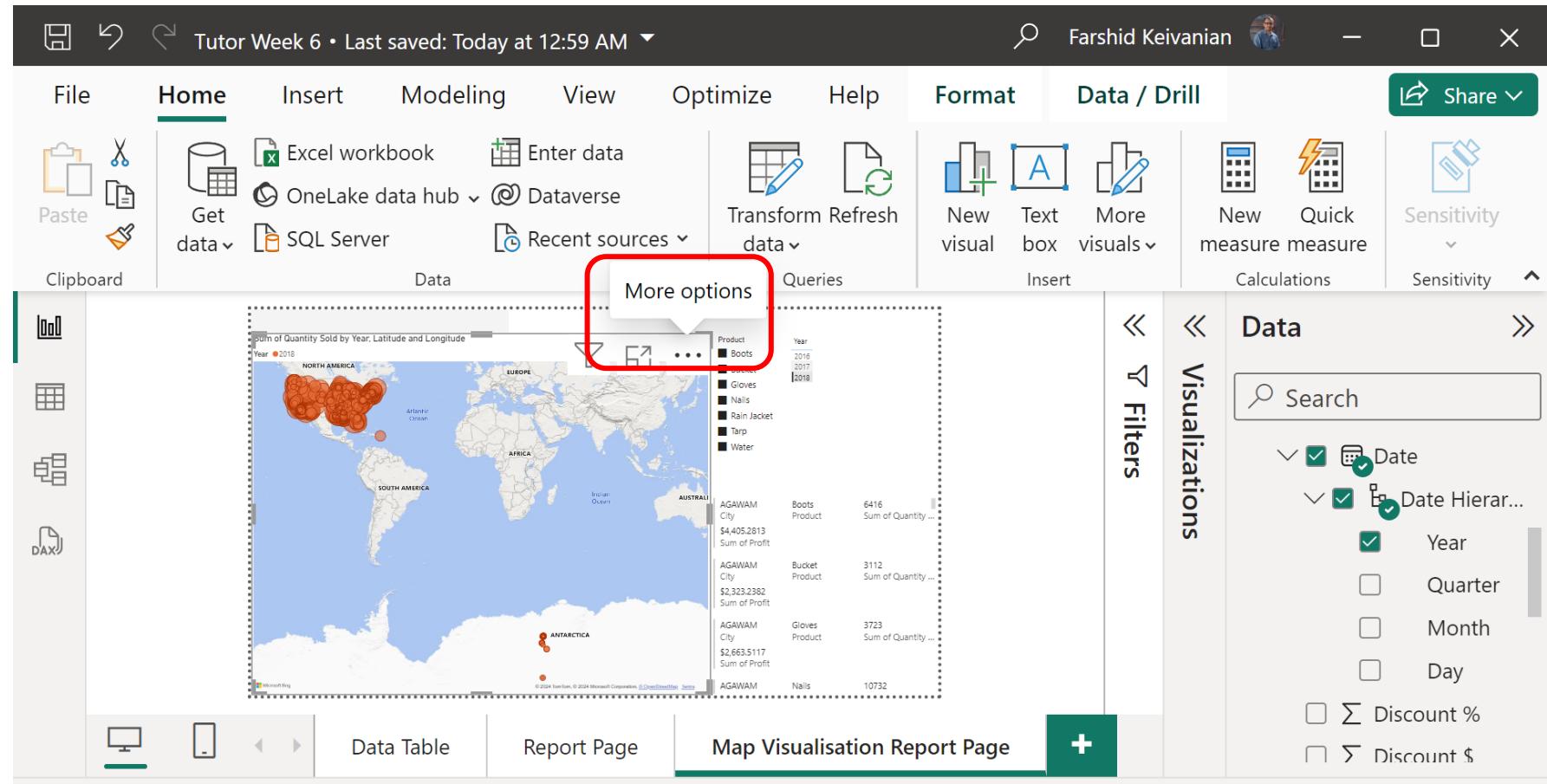
- **Symbol Style:** Adjust the appearance of the symbols used on the map. This can include changing their size, color, or shape to make the map more readable or visually appealing.
- **Pins:** Add pins to your map to mark specific locations like addresses or points of interest. This feature is useful for highlighting particular spots on the map that require attention.

The screenshot shows a Microsoft Power BI interface with a world map visualization. A context menu is open over the map, with the 'More options' option highlighted by a red box. The menu also includes '...', 'Format', and 'Data / Drill' options. The map displays data points for various regions, with a legend on the right showing categories like Product (Boots, Gloves, Rain Jacket, Tarp, Water) and Year (2016, 2017, 2018). The Data pane on the right shows a table with columns for Product, Year, City, and Sum of Profit. The Visualizations pane shows a search bar and filter options for Date, Date Hierarchies, Year, Quarter, Month, and Day. The bottom navigation bar includes icons for Data Table, Report Page, and Map Visualisation Report Page, along with a green '+' button.

Product	Year	City	Sum of Profit
Boots	2016	AGAWAM	\$4,405,2813
Boots	2017	AGAWAM	\$2,323,2382
Gloves	2018	AGAWAM	\$2,663,5117
Rain Jacket	2016	AGAWAM	\$3,723
Tarp	2017	AGAWAM	\$10,732
Water	2018	AGAWAM	\$0

### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

- **Drive Time Pins:** This feature allows you to select a location and display what is within a certain radius or driving time from that point, helping in analyses like service coverage or delivery zones.
- **Reference Layers:** Add layers to your map to provide additional context. These might include demographic layers showing information like population density, age distribution, or economic data.



### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

- **Infographics:** Enable infographics on your map to show related contextual information dynamically as you interact with different elements on the map. These can provide quick insights and are configurable to show data relevant to the selected area or the overall visible area.

The screenshot shows the Microsoft Power BI desktop application interface. A world map visualization is displayed in the center. A context menu is open over the map, with the "More options" option highlighted by a red box. To the right of the map, a data card provides details about the selected area, including a legend for products like Boots, Gloves, Nails, Rain Jacket, Tarp, and Water, and a table of specific data points such as AGAWAM City, AGAWAM Bucket, AGAWAM Gloves, AGAWAM Nails, and AGAWAM Rain Jacket. The ribbon menu at the top is set to the "Home" tab, and the "Data / Drill" tab is also visible. On the right side, there are sections for "Visualizations" and "Data", with various filters and measures listed.

More options

Product	Sum of Quantity Sold
Boots	6416
Gloves	3112
Nails	3723
Rain Jacket	2,663.5117
Tarp	2,323.2382
Water	4,405.2813

City	Product	Sum of Profit
AGAWAM	Boots	6416
AGAWAM	Bucket	3112
AGAWAM	Gloves	3723
AGAWAM	Nails	10732
AGAWAM	Rain Jacket	2,663.5117
AGAWAM	Tarp	2,323.2382

Visualizations

Data

Search

Date

Date Hierar...

Year

Quarter

Month

Day

$\sum$  Discount %

$\sum$  Discount \$

### 3. Tutorial week 6 – Enhancing the GeoMap Visualisation

By utilizing these features, we can significantly enhance the interactive and informational value of our GeoMap visualizations in Power BI, tailoring them to meet specific analytical needs or presentation goals.

The screenshot shows the Power BI desktop application interface. The ribbon at the top is set to the 'Home' tab. A red box highlights the 'More options' button (three dots) in the 'Format' tab's dropdown menu. The main area displays a world map with data points, and a data table is visible on the right side. The 'Visualizations' pane on the right shows various filters applied to the data.

**Home Tab Ribbon:**

- File
- Home
- Insert
- Modeling
- View
- Optimize
- Help
- Format
- Data / Drill

**Format Tab Options:**

- Clipboard (Paste, Get data, SQL Server)
- Data (Excel workbook, OneLake data hub, SQL Server, Recent sources)
- Queries (Enter data, Refresh data, Transform data)
- Insert (New visual, Text box, More visuals)
- Calculations (New measure, Quick measure, Sensitivity)

**More options (highlighted):**

- Product: Boots, Gloves, Nails, Rain Jacket, Tarp, Water
- Year: 2016, 2017, 2018
- AGAWAM City: Boots Product, \$4,405.2813 Sum of Profit; Bucket Product, 3112 Sum of Quantity ...; Gloves Product, 3723 Sum of Quantity ...; Nails Product, 10732 Sum of Profit
- ANTARCTICA: Rain Jacket Product, 2,323.2382 Sum of Profit

**Visualizations Pane:**

- Search: Date, Date Hierar..., Year, Quarter, Month, Day
- Σ Discount %
- Σ Discount \$



## ***Test Your Skills***

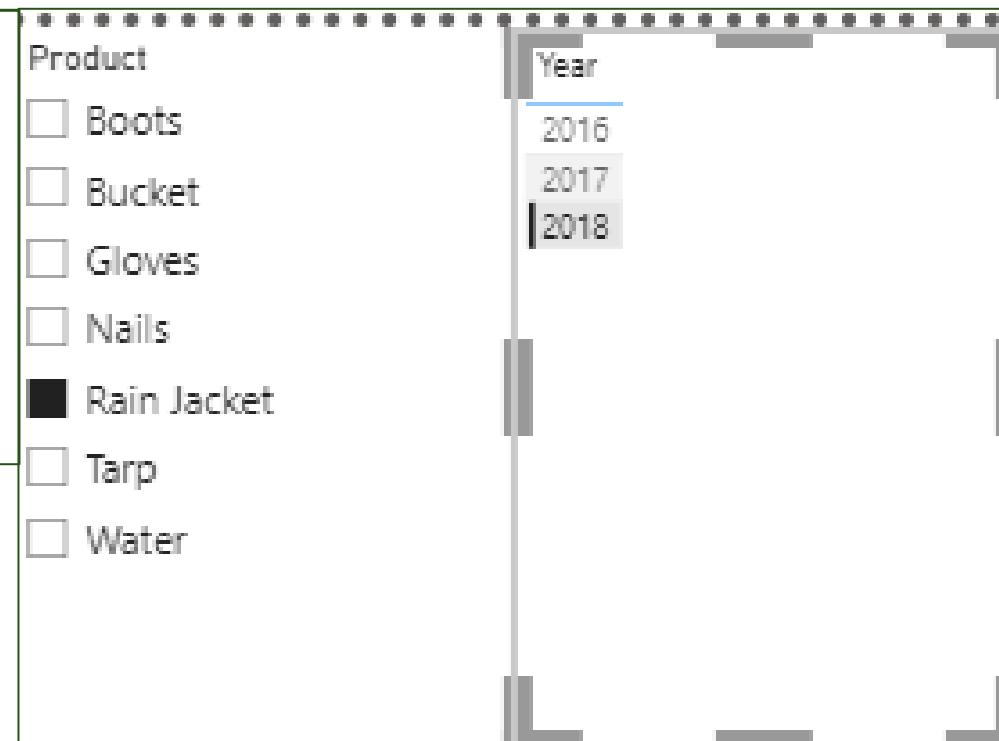
Using the various selection techniques and filters answer the following questions

- Is there a pattern to locations where Rain jackets are sold?
- Does this vary from year to year?
- Are there any other products which follow a similar pattern?

- We will answer Question 1 and 2: Click on Product Rain Jacket

- Email your answer to [Question 3:](#)

[Fkeivanian@my.holmes.edu.au](mailto:Fkeivanian@my.holmes.edu.au)



- **Q1. Is there a pattern to locations where Rain jackets are sold?**

**Pattern Observed:** Rain jackets are predominantly sold in North America across all years. This suggests that there is a consistent demand in this region.

- **Q2. Does this vary from year to year?**

- Yearly Variation:

- **2016:** Concentrated sales in the northeastern region of North America.
    - **2017:** The sales are somewhat dispersed but still mainly focused in North America, with a notable sale in Antarctica.
    - **2018:** Sales spread across more regions in North America and a consistent spot in Antarctica, indicating a slight spread or increase in geographical distribution over the years.

- **Q3. Are there any other products which follow a similar pattern?**
- Analysis of Other Products: To determine if other products follow a similar pattern, one would typically look for other products that show sales concentration in similar regions across the different years. You would use the filter for other products (like Boots, Gloves, etc.) to see if their sales distribution aligns similarly with Rain Jackets. If another product consistently shows higher sales in North America, particularly in similar states or cities, it could be considered to have a similar pattern.

- Send your analysis to [Fkeivanian@my.holmes.edu.au](mailto:Fkeivanian@my.holmes.edu.au)

**4. Attendance & Tutorial Questions - Recognising student participation and engagement specifically identifying those who are most actively involved!**



**Thank you,  
Happy a Learning Day**