

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

<https://github.com/FarshidKeivania...>

FarshidKeivanian / Sessions_BusinessAnalytics_PowerBI

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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.



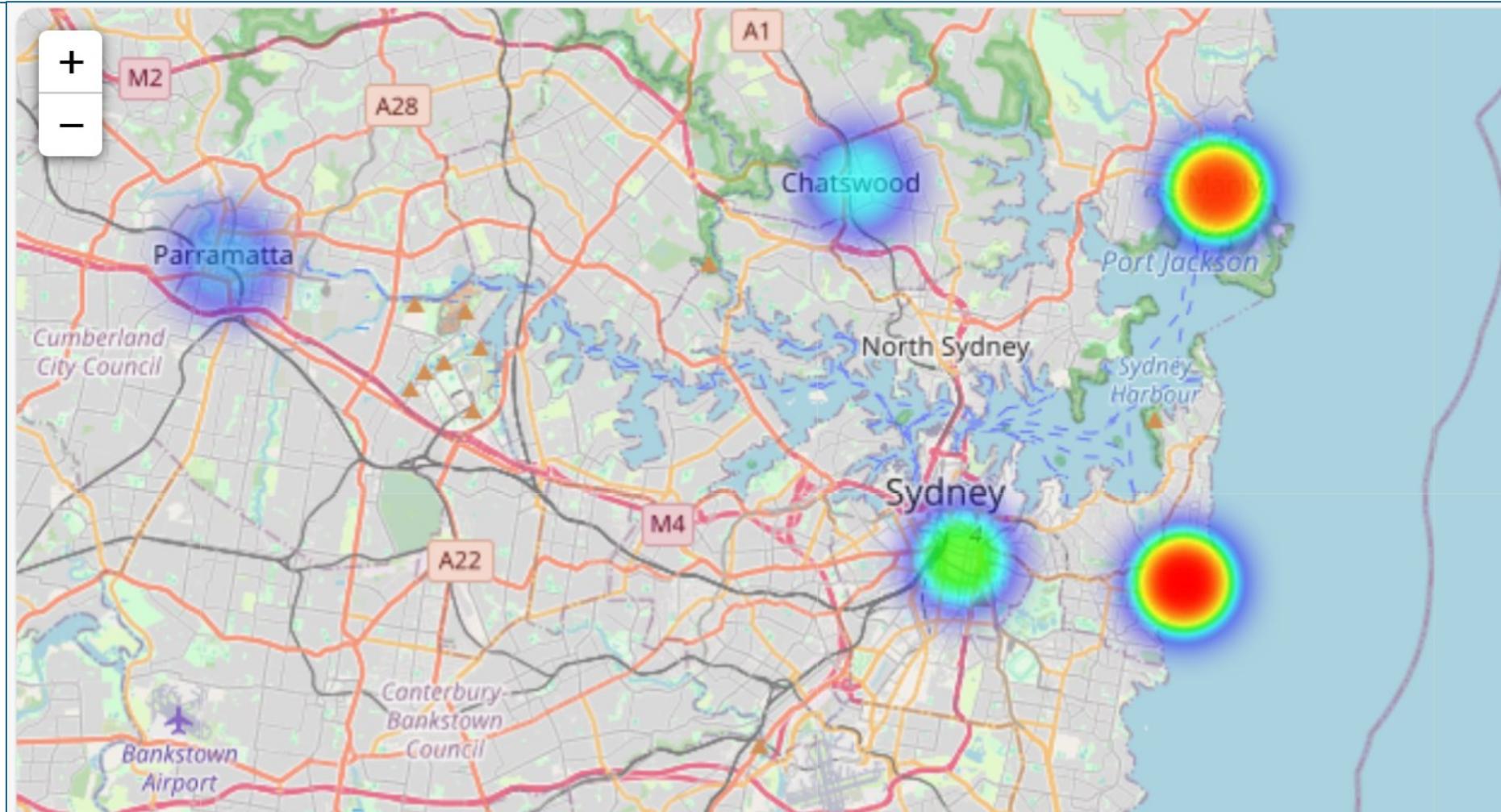
2. Mastering Concepts for tutorial week 6

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.

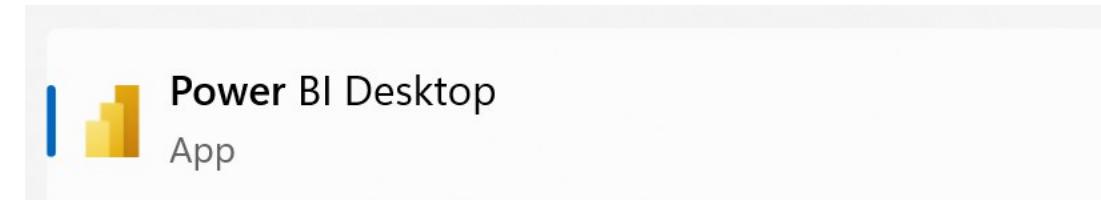


This visualization is helpful for analyzing real estate market trends, allowing stakeholders to identify high-value areas and observe how property prices vary across different suburbs.

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.

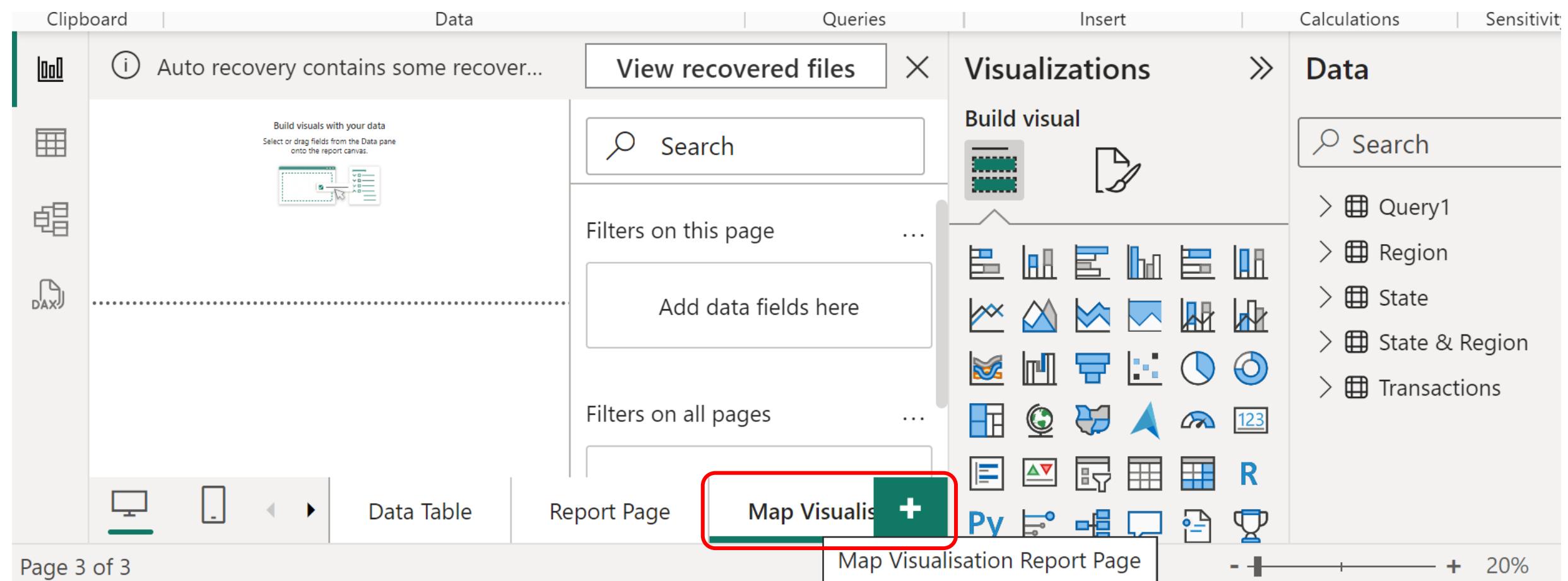
- **Run Power BI Desktop**
- **Open ‘Tutor Week 5.pbix’**
- **Download ‘Location.xlsx’ from Blackboard**
- **Create a new report for map visualisation**



A screenshot of the Microsoft Power BI Desktop interface. The top navigation bar includes 'Clipboard', 'Data', 'Queries', 'Insert', 'Calculations', and 'Sensitivity'. On the left, there's a ribbon of icons for 'DAX', 'Data Table', 'Report Page', and a green '+' button. The main area displays a 'View recovered files' dialog with a search bar and two dropdowns for 'Product'. To the right 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 & Region', and 'Transactions'. A red box highlights the green '+' button at the bottom center of the interface.

3. Tutorial week 6 – Power BI GeoMapping

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



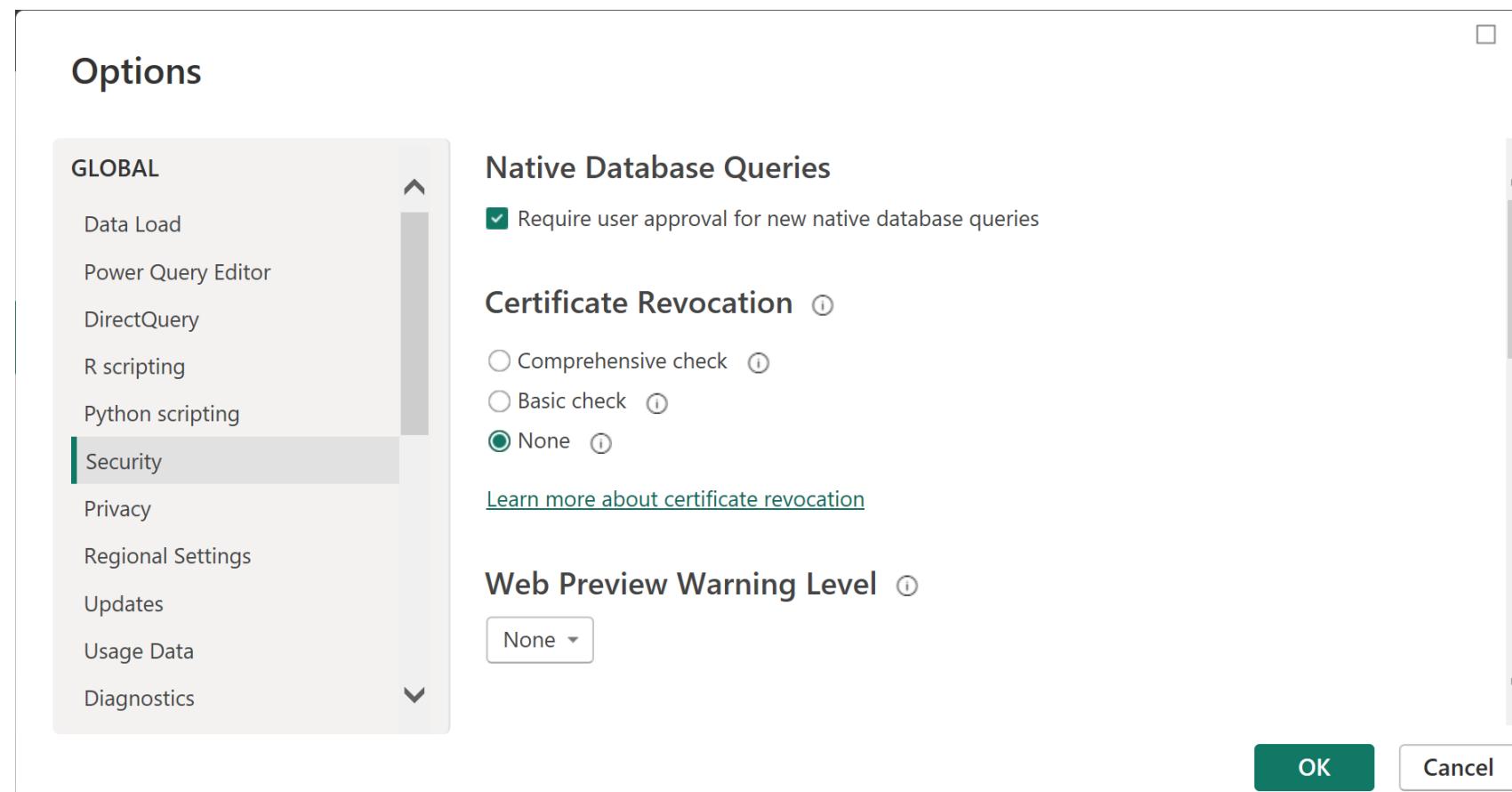
3. Tutorial week 6 – Power BI GeoMapping

- 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 a '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.

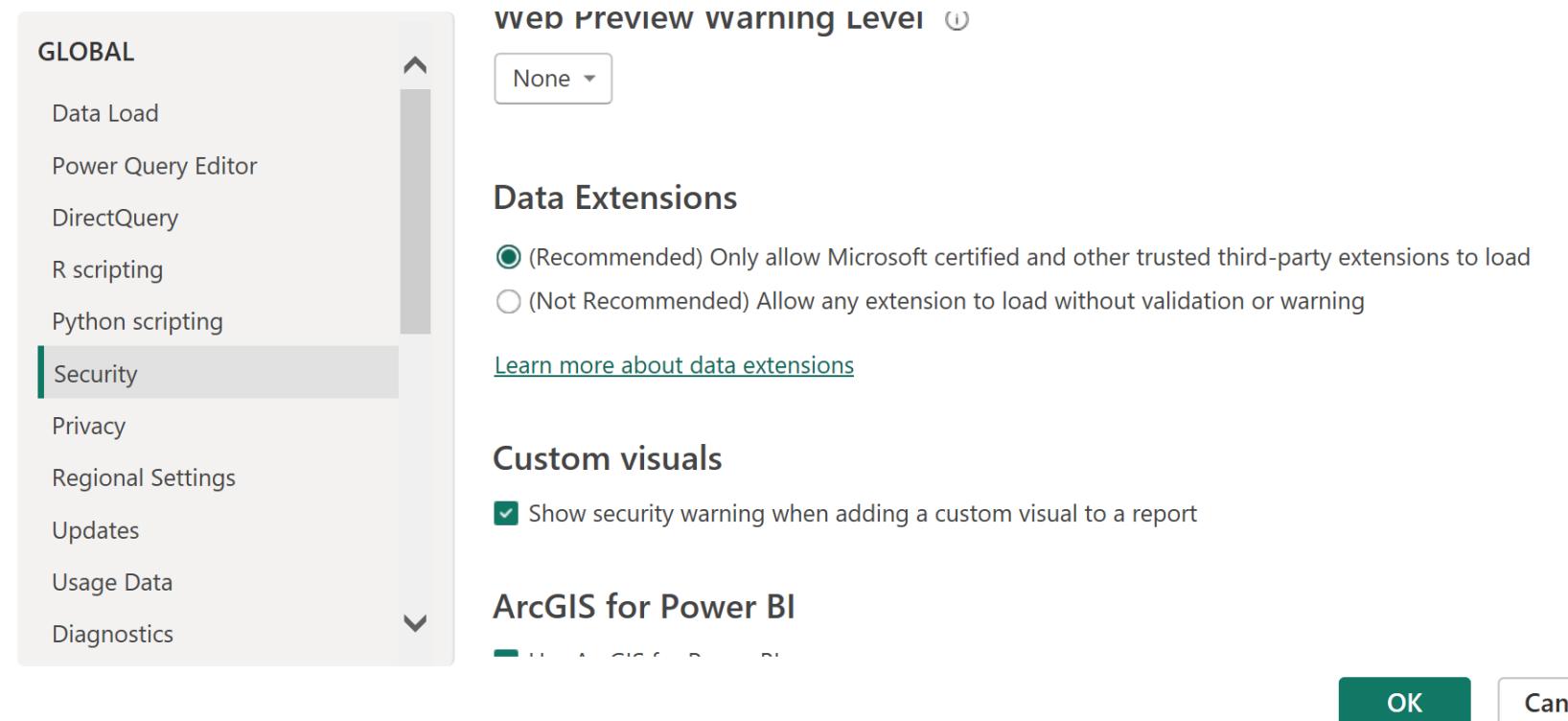
3. Tutorial week 6 – Power BI GeoMapping

- 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 ⓘ

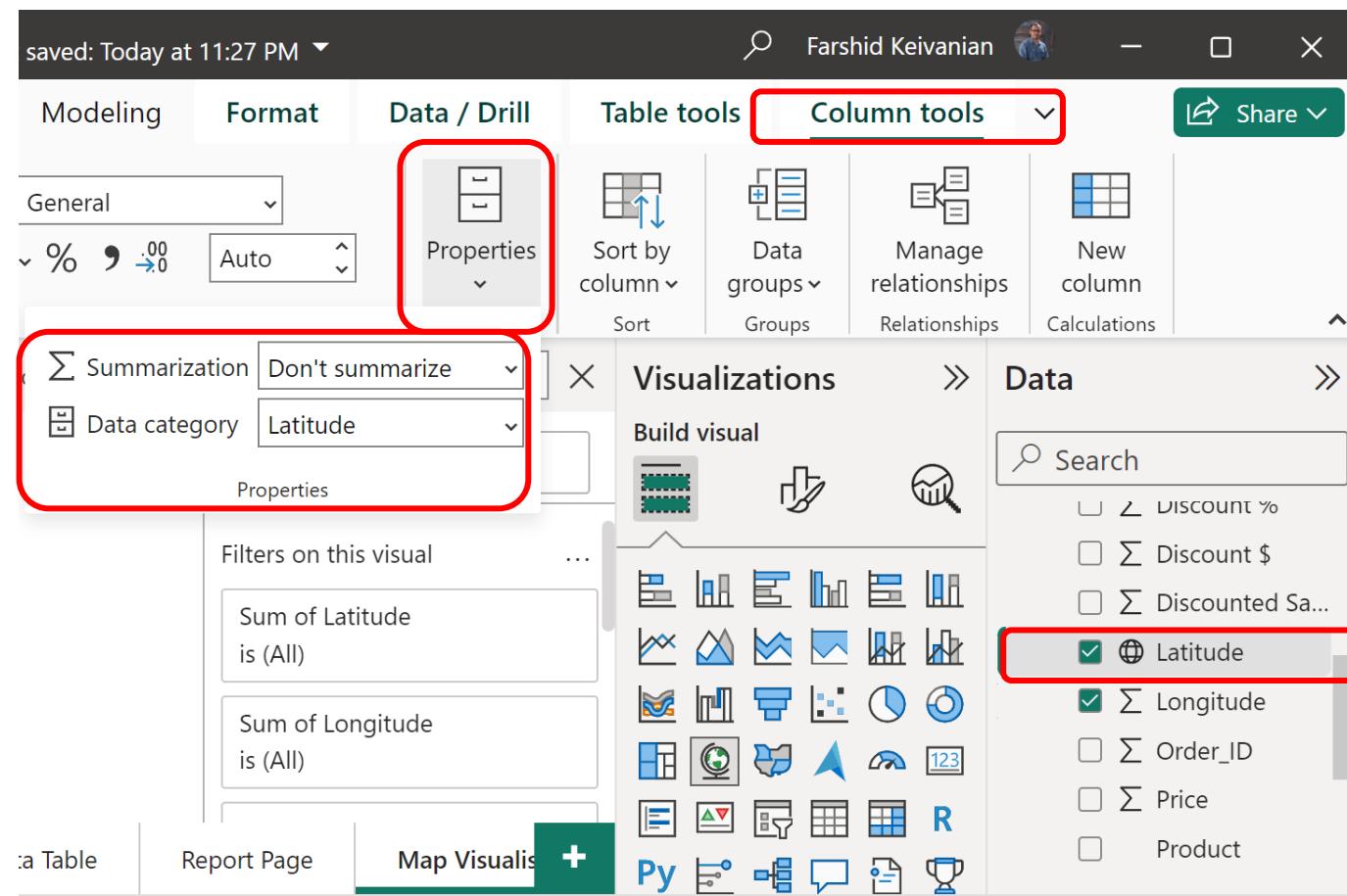
 You have not approved any authentication services
on this computer.

OK

Cancel

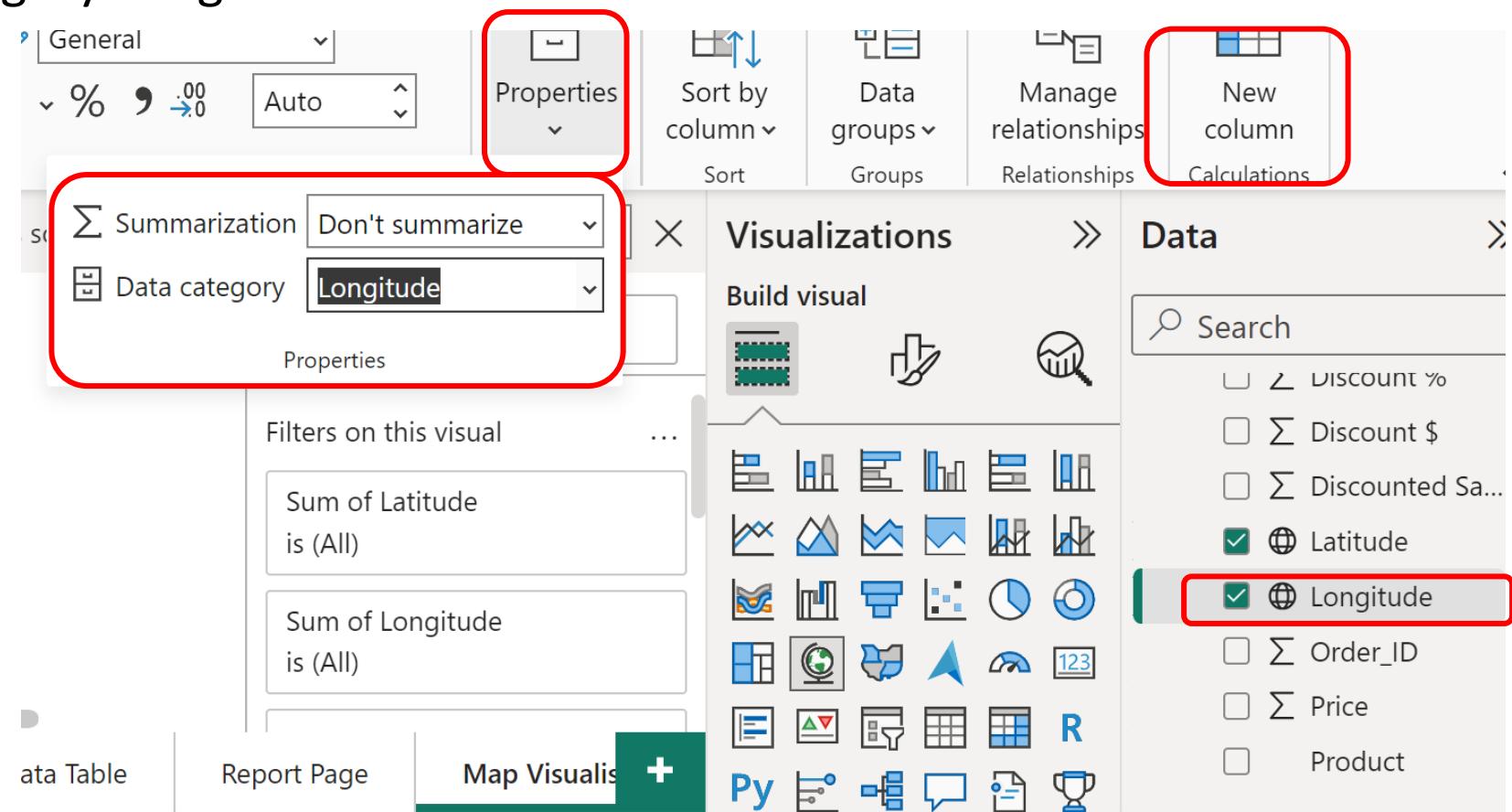
3. Tutorial week 6 – Power BI GeoMapping

- 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 interface. The ribbon at the top includes tabs for File, Home, Insert, Modeling, Format, Data / Drill, Table tools, Column tools, and Share. The Column tools tab is currently selected. Below the ribbon, there are sections for Structure (containing Latitude and Decimal number fields) and Formatting (with currency and percentage formats). The main workspace displays a 'Visualizations' pane on the right containing various chart and map icons, and a 'Data' pane on the far right listing data sources like Cost of Goods, Date, and Latitude. In the center, a 'Map Visualis...' button is highlighted with a green background and white text. To its left is a 'Report Page' button. On the far left, there are icons for Data Table, Map Visualis..., Report Page, and a plus sign. A red box highlights a world map visualization in the center of the workspace, which is described in the tooltip as 'Auto recovery contains some recover...'. The map shows continents and oceans with some blue dots representing data points.

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 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% completion.

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 displays a world map with blue bubbles representing data points. On the left, there's a vertical pane with icons for Table, Matrix, DAX, and Query. The right side features the Visualizations pane with various chart and map types, and the Data pane which lists measures like Price, Product, Product_ID, Profit, Sales Revenue, Store, and Version. A red box highlights the checkbox for 'Quantity Sold' in the Data pane, indicating it has been selected.

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

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

Latitude General Properties Sort by column Data groups Manage relationships New column Calculations

Decimal number \$ % , .00 Auto

Structure Formatting

View recovered files X

Search

Filters on this visual

Latitude is (All)

Longitude is (All)

Build visual

Map Visualis +

Py

Σ Price
Product
Product_ID
Σ Profit
Σ Quantity S...
Σ Sales Revenue
Store
Version

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)". On the far right, the "Visualizations" pane shows various chart and map types, and the "Data" pane shows a hierarchical list of fields under "Cost of Goods". Under "Date", "Date Hierar..." is expanded, and "Year" is selected, indicated by a red box around its checkbox. 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...

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Date - Year is (All)

Latitude is (All)

Build visual

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Data

Search

Cost of Goods

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Year

Quarter

Month

Day

Discount %

Map Visualis +

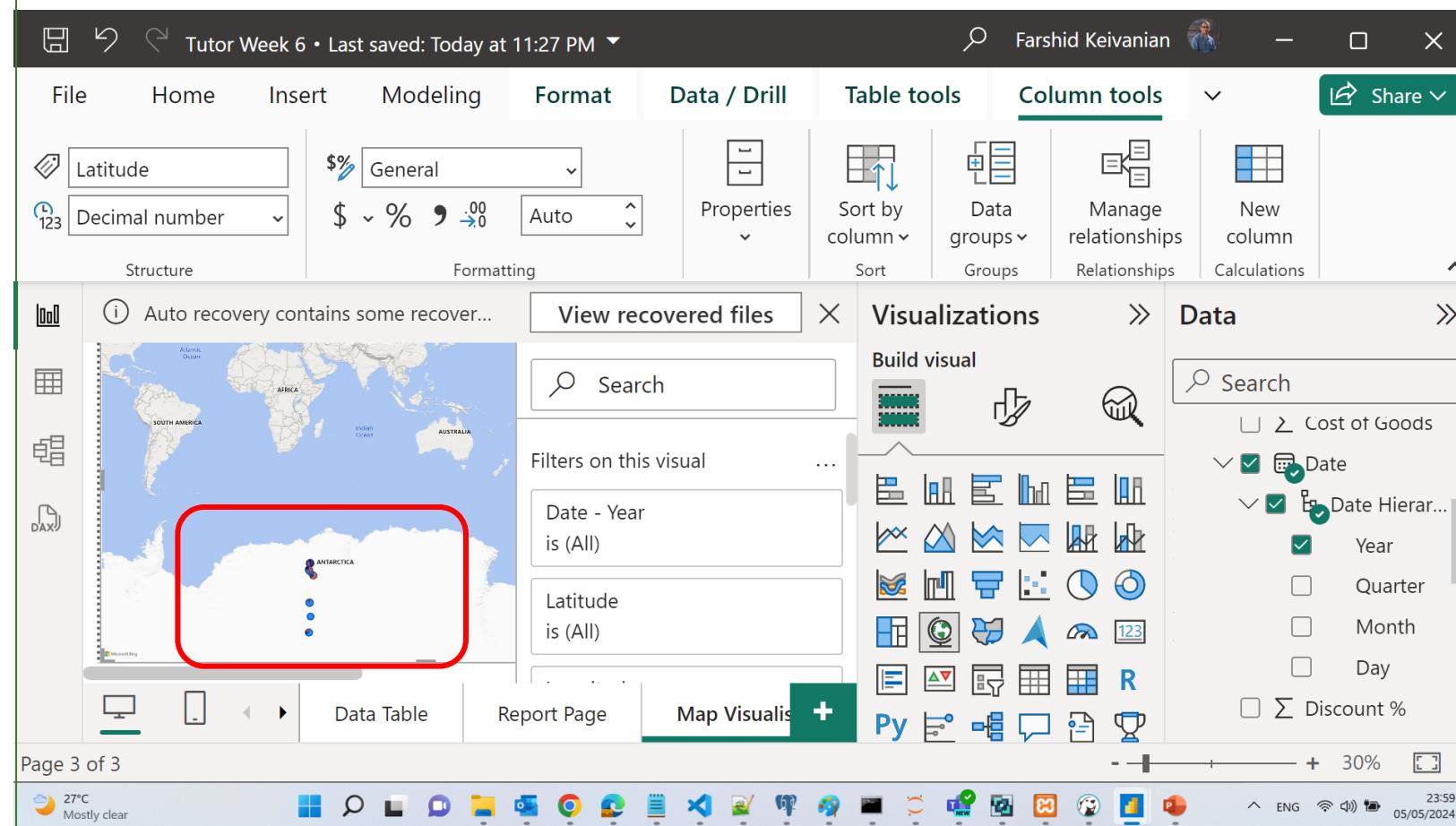
Report Page

Data Table

Page 3 of 3

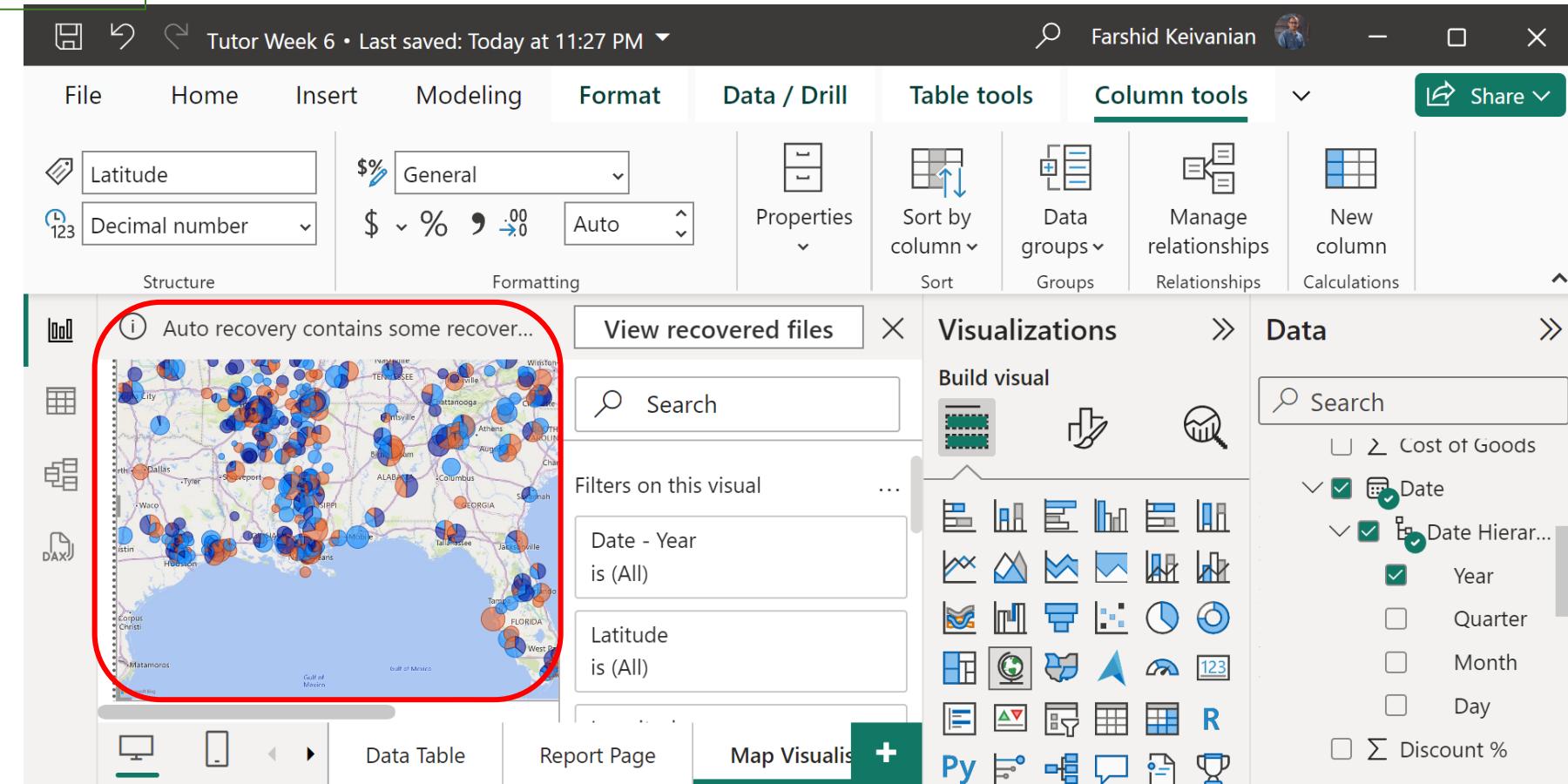
3. Tutorial week 6 – Power BI GeoMapping

- 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



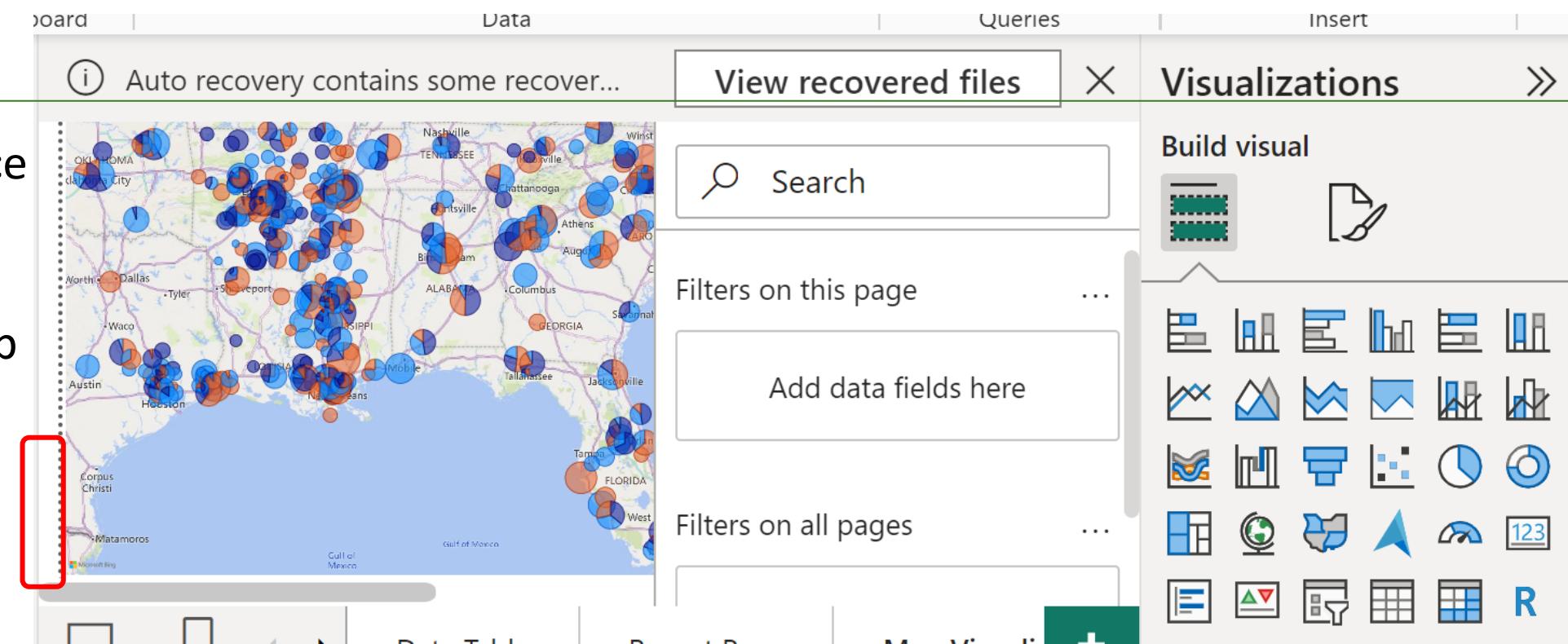
3. Tutorial week 6 – Power BI GeoMapping

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

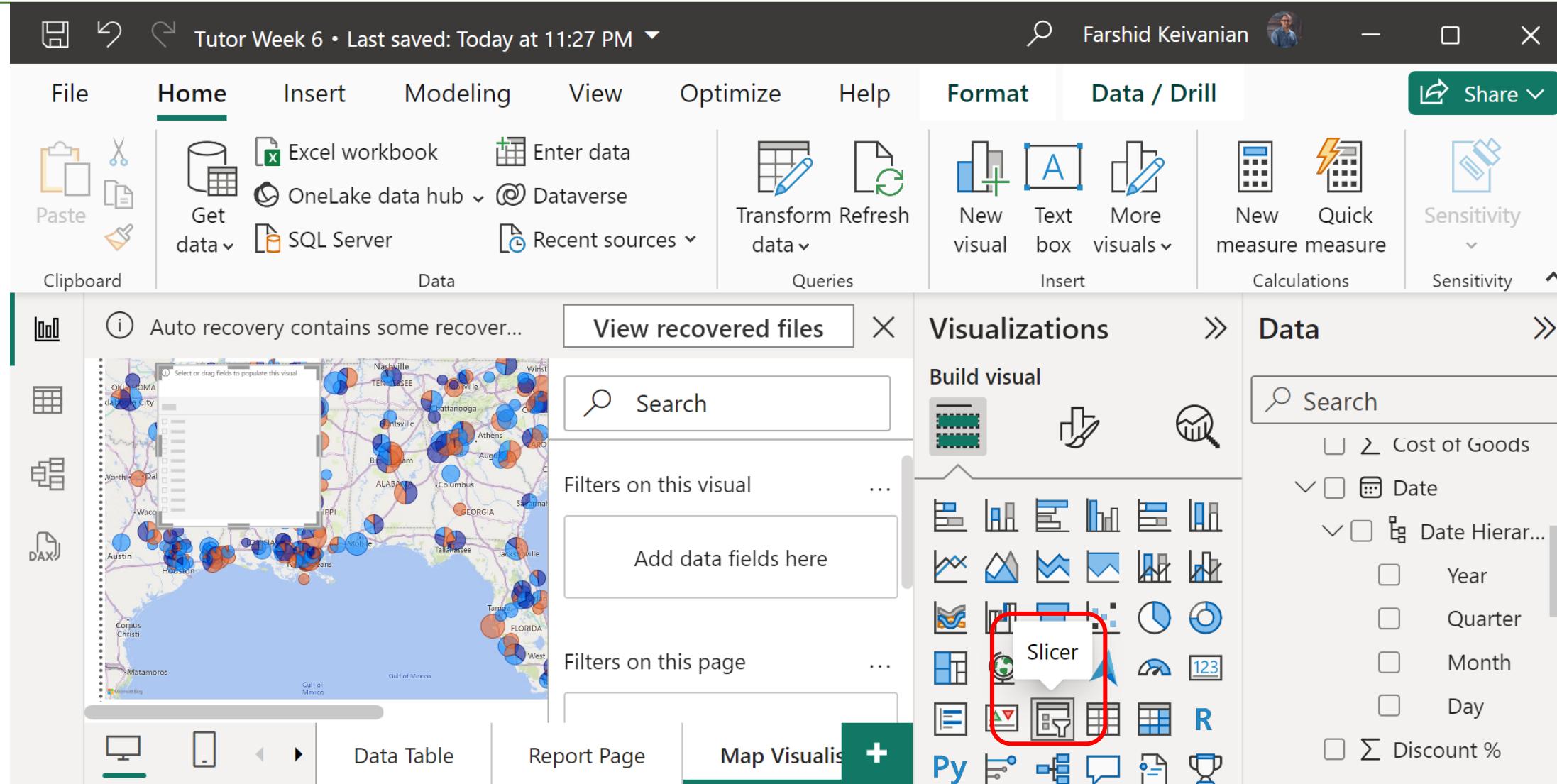
in a report. To do this:

- **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 Format tab has options like New visual, Text box, More visuals, Transform, Refresh data, and Insert. The Data / Drill tab has options like New measure, Quick measure, and Calculations. The Share tab has options like Sensitivity.

The main workspace contains a world map visualization titled "Map Visualisation". A red box highlights the map area. To the right of the map is a "View recovered files" dialog box with a search bar and a "Build visual" section containing icons for various chart types. Below these are sections for "Filters on this visual" showing "Date - Year is (All)" and "Latitude is (All)".

A large red box also highlights the "Visualizations" and "Data" panes on the right side of the screen. The "Visualizations" pane lists various chart types, and the "Data" pane lists data fields such as Latitude, Longitude, Order_ID, Price, Product, Product_ID, and Profit, each with a checkbox next to it.

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

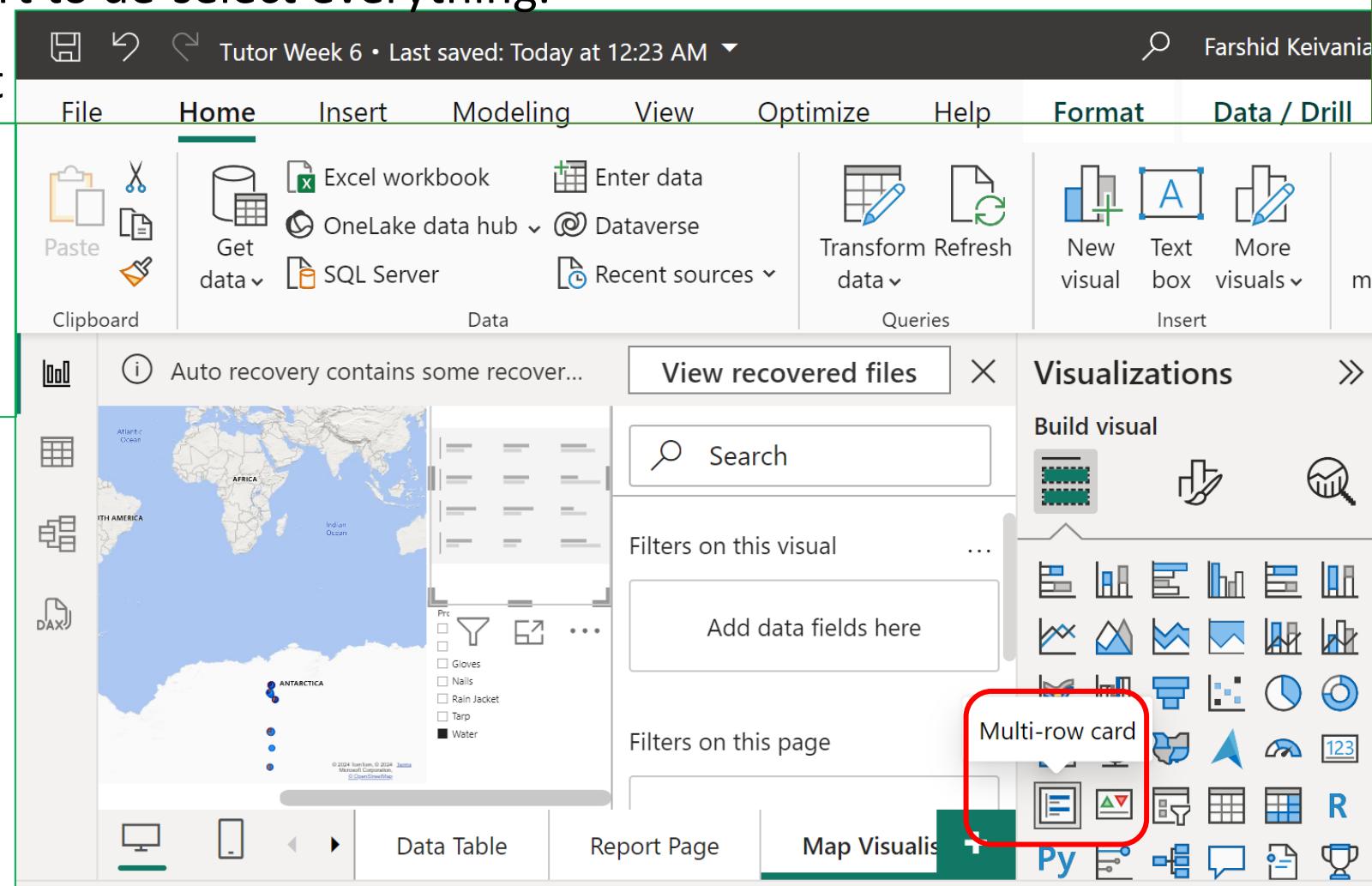
Σ Profit

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 interface. The ribbon menu is visible at the top, with the 'Home' tab selected. Below the ribbon, there's a toolbar with various icons for data operations like Paste, Get data, and Transform Refresh data. The main workspace contains a world map visualization where each country is colored according to its product category. A tooltip for the map indicates that 'Auto recovery contains some recoverable files'. To the right of the map is a 'View recovered files' button and a search bar. Below the map is a 'Filters on this visual' section with two dropdown menus: 'City is (All)' and 'Product is (All)'. To the right of the workspace is the 'Visualizations' pane, which lists various chart and report types. A red box highlights the 'More options' and 'Σ Quantity Sold' items in the 'Visualizations' pane's dropdown menu. The bottom navigation bar includes tabs for 'Data Table', 'Report Page', and 'Map Visualis', along with a '+' icon for adding new visualizations.

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.
- Data Source:** A sidebar on the right showing available data sources: Order_ID, Price, Product, Product_ID, Profit, Quantity Sold, Sales Revenue.

City	Product	Sum of Quantity	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 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 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" which lists the following data:

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

Below the map and data card are several filter cards:

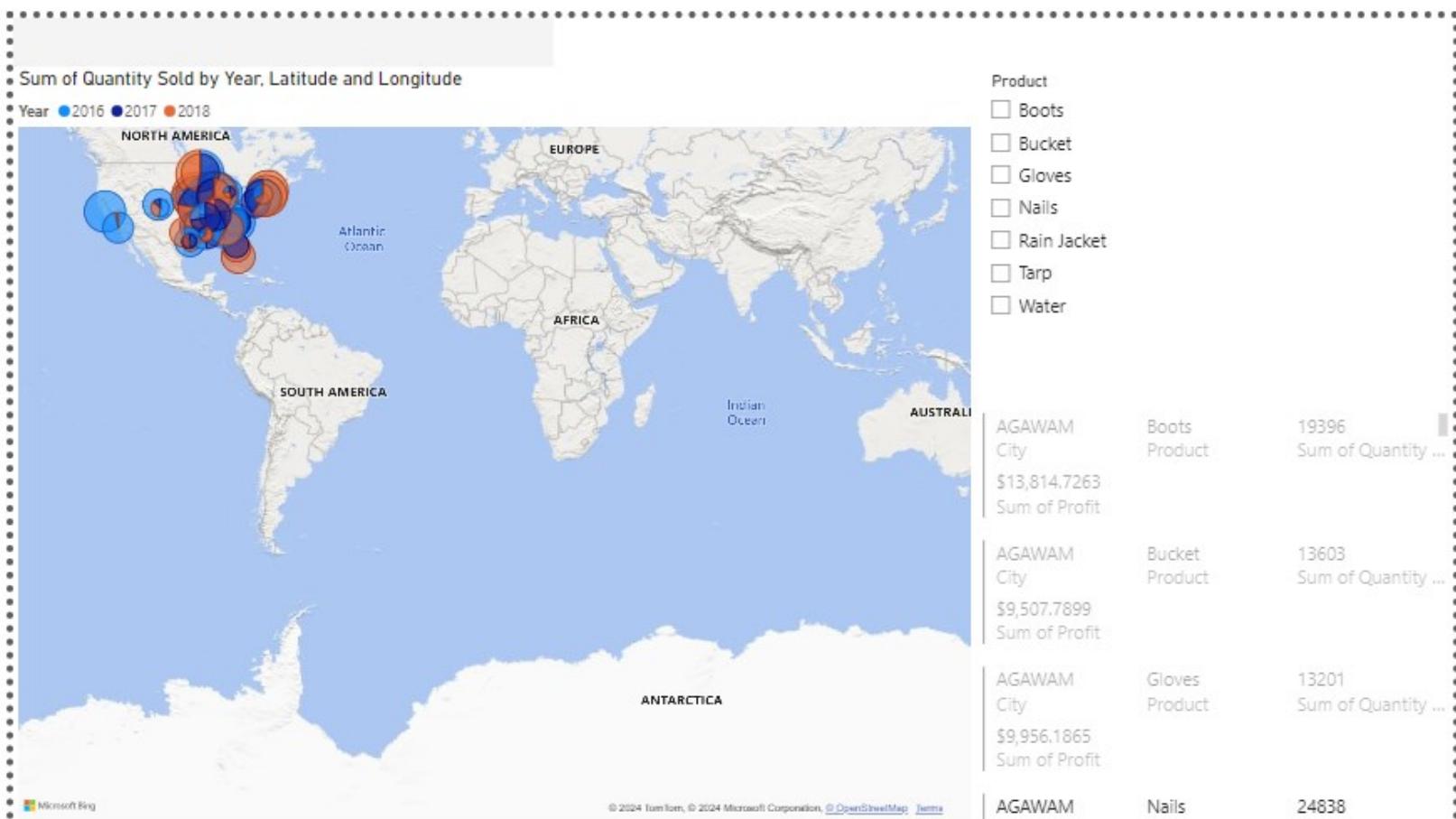
- Date - Year is (All)
- Latitude is (All)

The bottom navigation bar includes icons for Data Table, Report Page, Map Visualisation (highlighted with a green plus sign), and Py.

The right side of the screen shows the "Visualizations" pane with various chart and map visualization icons, and the "Data" pane showing a search bar and a list of data items like Cost of Goods, Date, and Date Hierar... with checkboxes indicating selection status.

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 showing sales details for AGAWAM City:

Product	Sum of Profit
Boots	\$13,814,7263
Bucket	\$9,507,7899
Gloves	13603
Nails	13201
Rain Jacket	Sum of Quantity ...
Tarp	24838
Water	AGAWAM

To the right of the map is the "Visualizations" pane, which is expanded. It shows various chart and table icons under the "Build visual" section. A red box highlights the table icon in the bottom right corner of the pane.

The bottom navigation bar includes icons for monitor, smartphone, back, forward, Data Table, Report Page, Map Visualisation Report Page, and a green plus sign. The "Map Visualisation Report Page" tab is selected.

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)

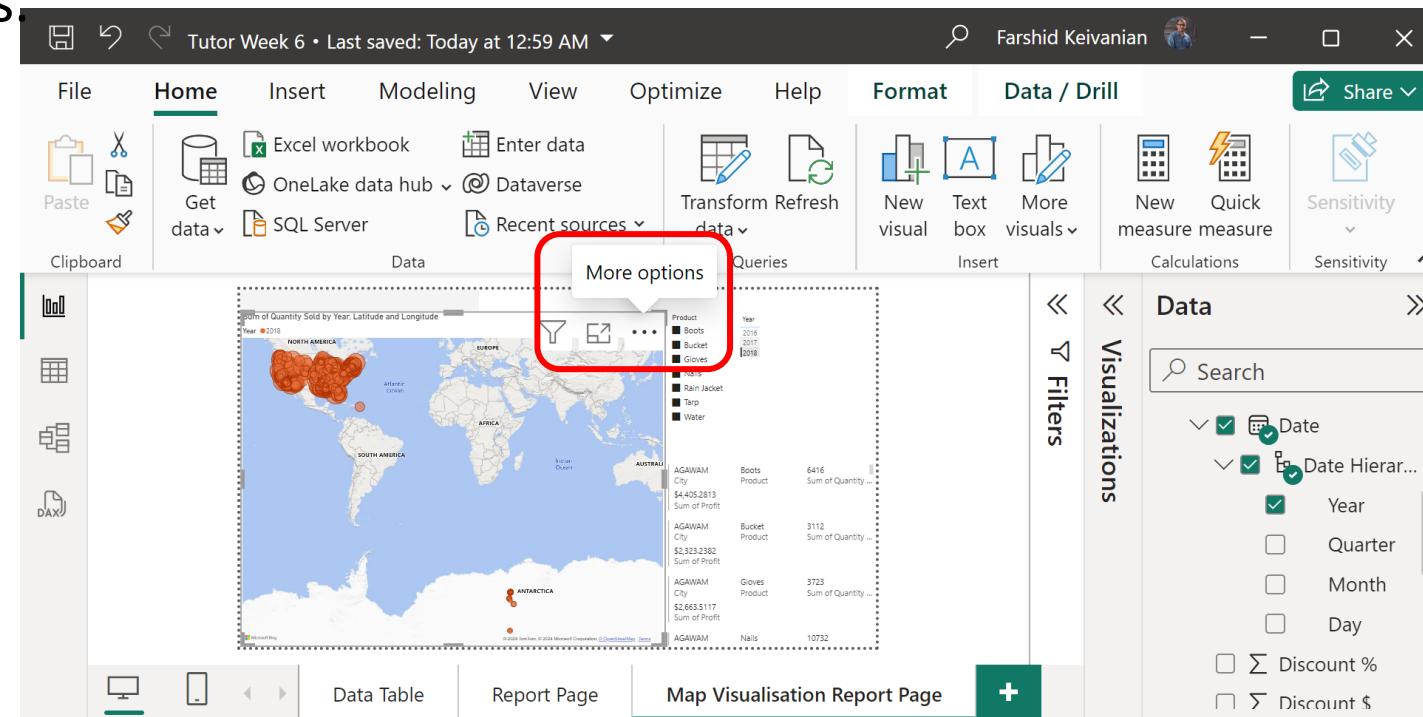
The screenshot shows the Microsoft Power BI desktop application interface. The ribbon menu is visible at the top, with the 'Home' tab selected. Below the ribbon, there's a central workspace containing a map visualization titled 'Sum of Quantity Sold by Year, Latitude and Longitude'. The map shows data 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 categories like Boots, Bucket, Gloves, Nails, Rain Jacket, Tarp, and Water, along with their respective quantities and profit sums.

On the left side, there's a vertical pane with icons for 'Clipboard', 'Data', 'DAX', and 'DAXJ'. On the right side, there are two panes: 'Visualizations' and 'Data'. The 'Visualizations' pane contains a search bar and a list of filters, some of which are highlighted with a red box. The 'Data' pane shows a hierarchical tree view under the 'Date' node, with 'Year', 'Quarter', 'Month', and 'Day' levels listed. At the bottom of the screen, there are navigation buttons for 'Data Table', 'Report Page', and 'Map Visualisation Report Page', along with a '+' button.

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 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 Share. The 'Home' tab is selected. The 'Data' tab is also visible. On the right side, there are panes for 'Visualizations' and 'Data', both showing filter settings. The bottom navigation bar includes buttons for Data Table, Report Page, and Map Visualisation Report Page, with the 'Map Visualisation Report Page' button being highlighted.

More options

Product	Year	Sum of Quantity Sold
Boots	2016	6416
Boots	2017	3112
Boots	2018	2323.2382
Gloves	2016	3723
Nails	2016	10732
Rain Jacket	2016	2663.5117
Tarp	2016	4405.2813
Water	2016	2323.2382

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. The top navigation bar includes 'File', 'Home' (selected), 'Insert', 'Modeling', 'View', 'Optimize', 'Help', 'Format', 'Data / Drill', and 'Share'. The 'Home' tab has sections for 'Data' (with 'Excel workbook', 'OneLake data hub', 'SQL Server', and 'Recent sources' options) and 'Queries' (with 'Transform Refresh data', 'New visual', 'Text box', 'More visuals', 'New measure', 'Quick measure', and 'Sensitivity' options). A red box highlights the 'More options' button in the 'Queries' section.

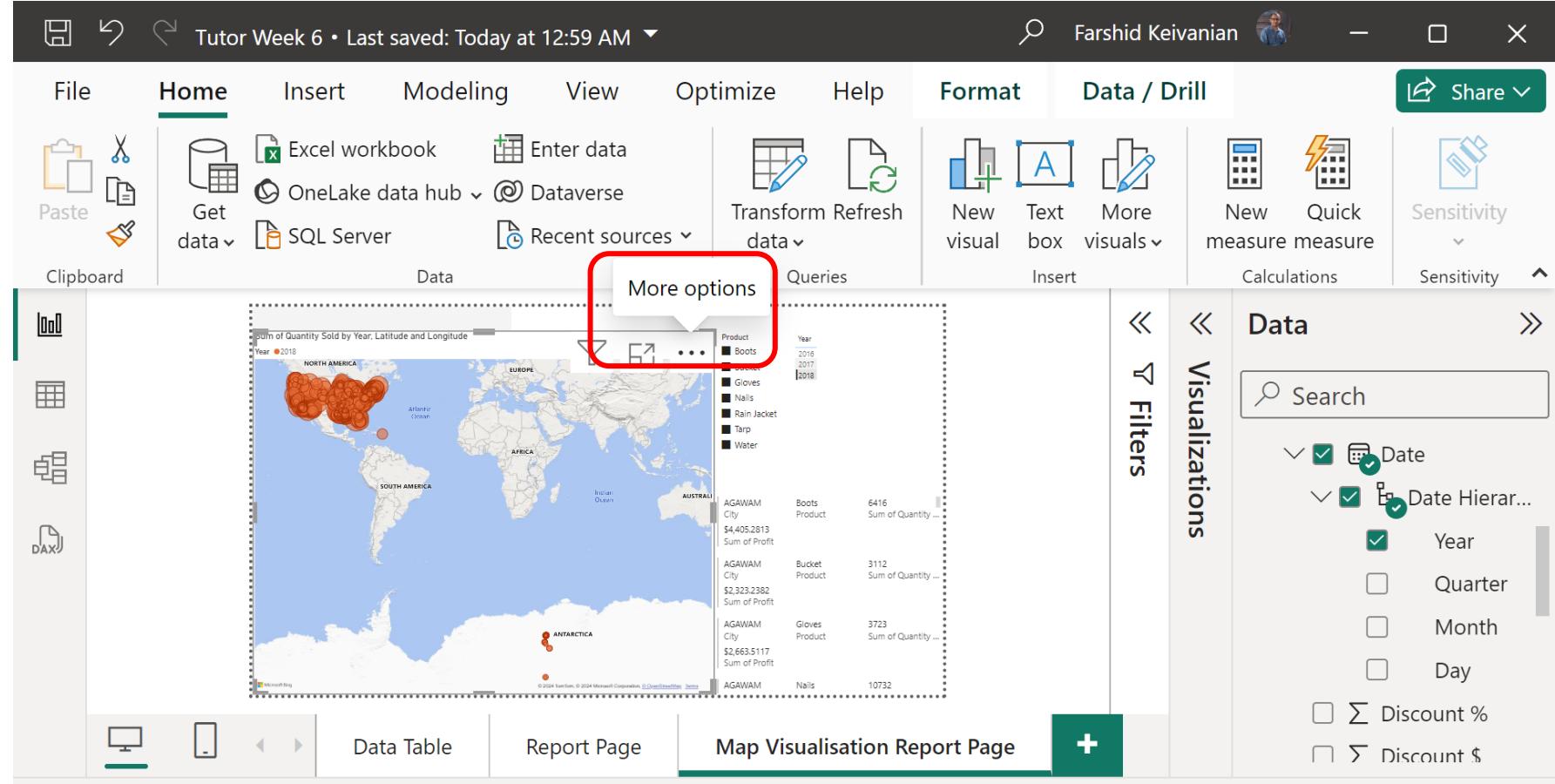
The main area displays a world map titled 'Sum of Quantity Sold by Year, Latitude and Longitude'. The map shows red dots representing sales data across continents. To the right of the map is a data table:

Year	Product	City	Sum of Profit
2018	Boots	AGAWAM	\$4,405,2813
2018	Boots	AGAWAM	\$2,323,2382
2018	Gloves	AGAWAM	\$2,663,5117
2018	Nails	AGAWAM	10732

The bottom navigation bar includes 'Data Table', 'Report Page', 'Map Visualisation Report Page' (selected), and a green '+' button. On the left, there's a vertical ribbon with icons for 'Table', 'Matrix', 'Card', and 'DAX'. On the right, there's a 'Visualizations' pane with a search bar and a list of filters: Date (checked), Date Hierar... (checked), Year (checked), Quarter, Month, Day, Discount %, and Discount \$.

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. The ribbon menu at the top includes tabs like File, Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, and Share. The Home tab is selected. The Data ribbon group contains options for Paste, Get data, Enter data, Transform, Refresh, New visual, Text box, More visuals, New measure, Quick measure, and Calculations. The Data ribbon group is also highlighted with a red box. On the right side, there are sections for Visualizations, Filters, and Data, each with their own respective controls and dropdown menus. The status bar at the bottom shows "Map Visualisation Report Page".

A context menu is open over the map visualization, with the "More options" option highlighted.

Visualizations

Filters

Data

Search

Date

Date Hierar...

Year

Quarter

Month

Day

\sum Discount %

Σ Discount \$

Map Visualisation Report Page

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 (Transform, Refresh data, New visual, Text box, More visuals)
- Insert (New measure, Quick measure, Calculations)
- Sensitivity

Visualizations Pane:

- Search: Date, Date Hierar..., Year, Quarter, Month, Day
- Visualizations: Sum of Quantity Sold by Year, Latitude and Longitude
- Filters: AGAWAM, Boots, Product, Year, Product, Sum of Profit, City, Sum of Quantity, Gloves, Product, Sum of Profit, City, Sum of Quantity, Nails, Product, Sum of Profit, City, Sum of Quantity, Tarp, Rain Jacket, Water

Data Table:

Product	Year	City	Sum of Profit	Sum of Quantity
Boots	2016	AGAWAM	\$4,405,281	6416
Boots	2017	AGAWAM	\$2,323,2382	3112
Boots	2018	AGAWAM	\$2,663,5117	3723
Gloves		AGAWAM		10732
Nails		AGAWAM		



Test Your Skills

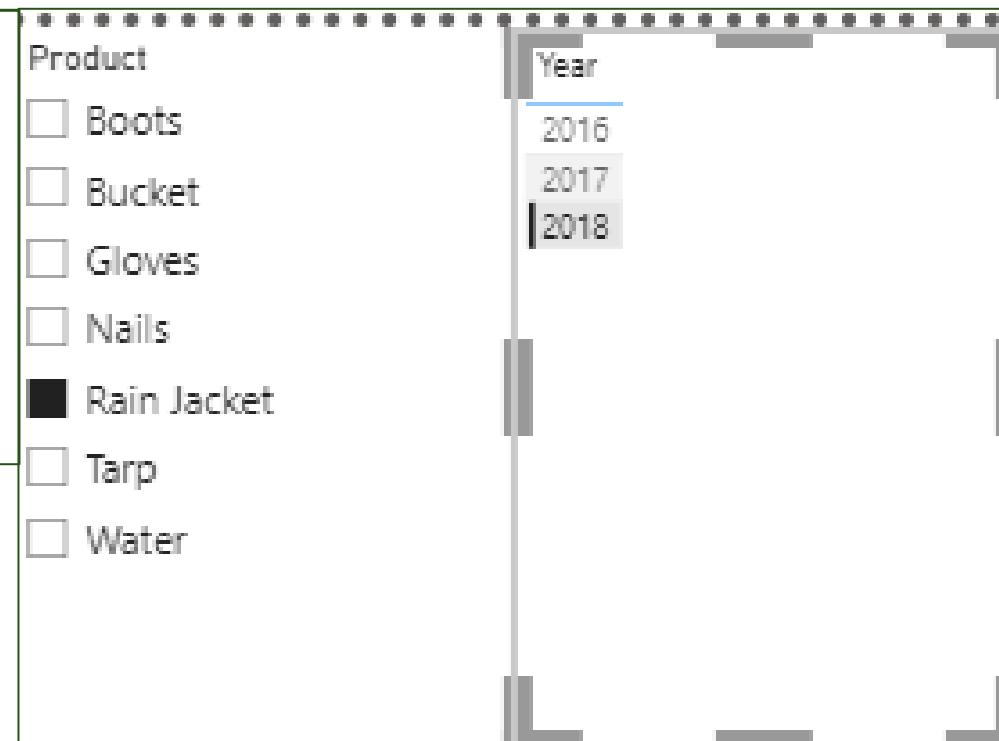
Using the various selection techniques and filters answer the following questions

- 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



- **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

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



**Thank you,
Happy a Learning Day**