

Introduction to Power BI



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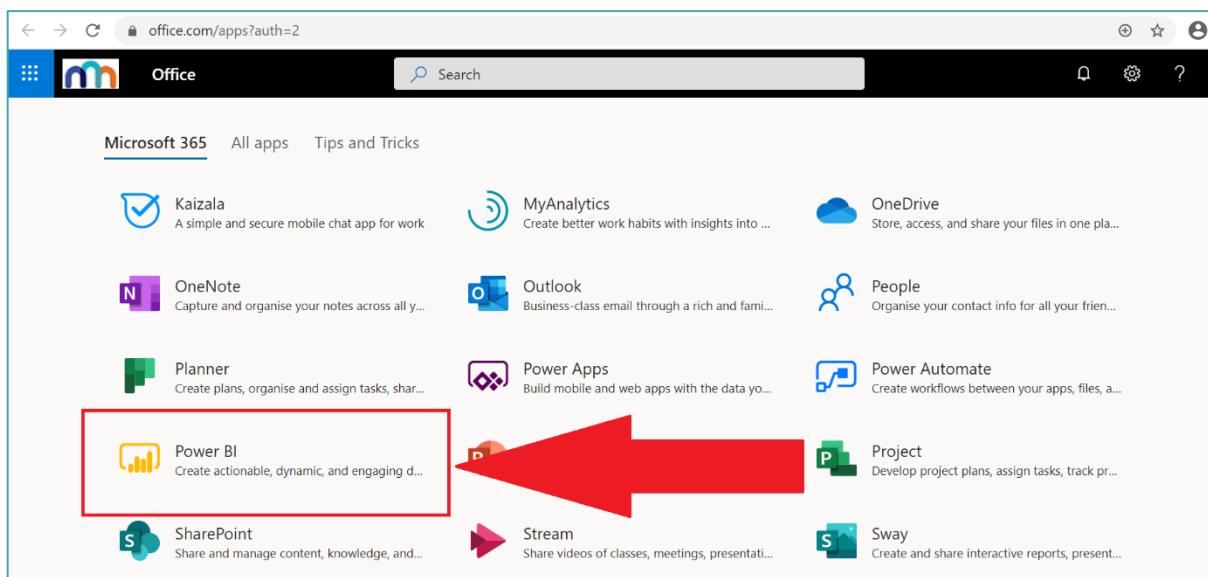


1. Getting Set up: Office 365 Users

Power BI Service

Power BI Service is included in Microsoft 365, if you do not have Microsoft 365 then talk to your IT provider to find out how to upgrade.

1. Log into Office 365



2. Click on Power BI icon to launch the Power BI service

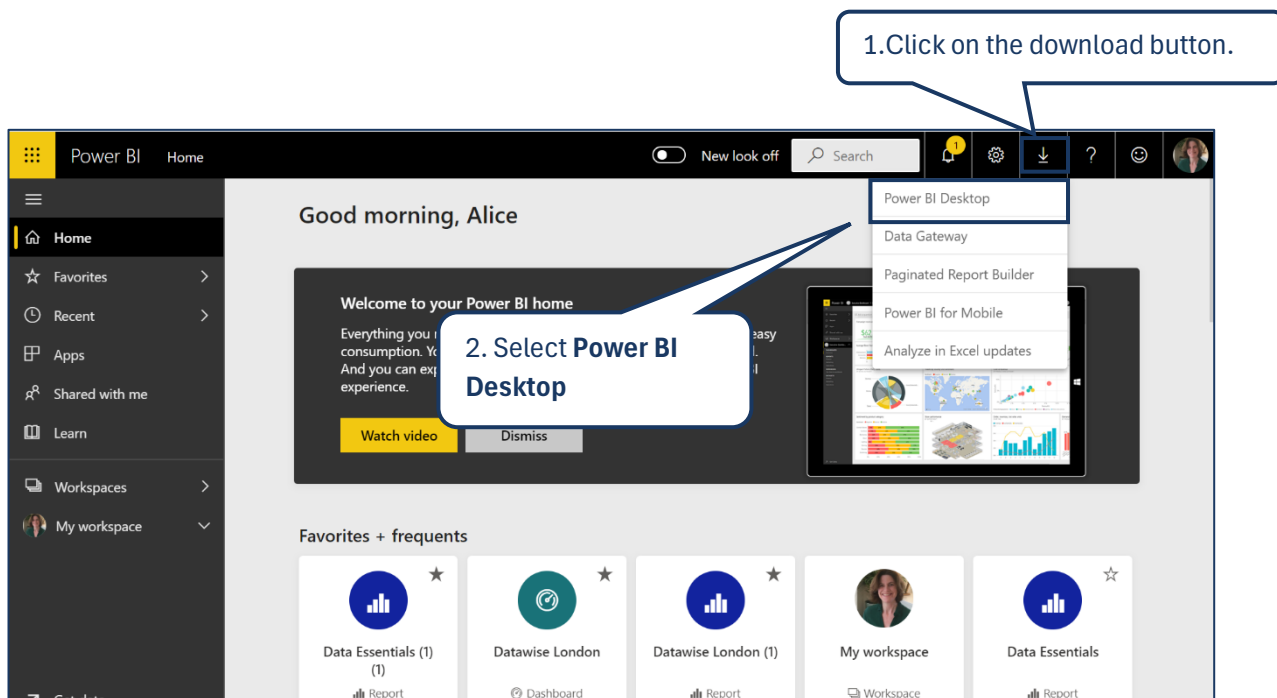
If you cannot see the Power BI icon, first try using the search function to find it. If it does not appear you will need to ask your IT provider to enable the application for you.



Power BI Desktop

There are 2 ways of downloading Power BI desktop:

1. Download from <https://www.microsoft.com/en-gb/download/details.aspx?id=58494> and follow the installation instructions.
2. Download via the Power BI service by following the steps below:



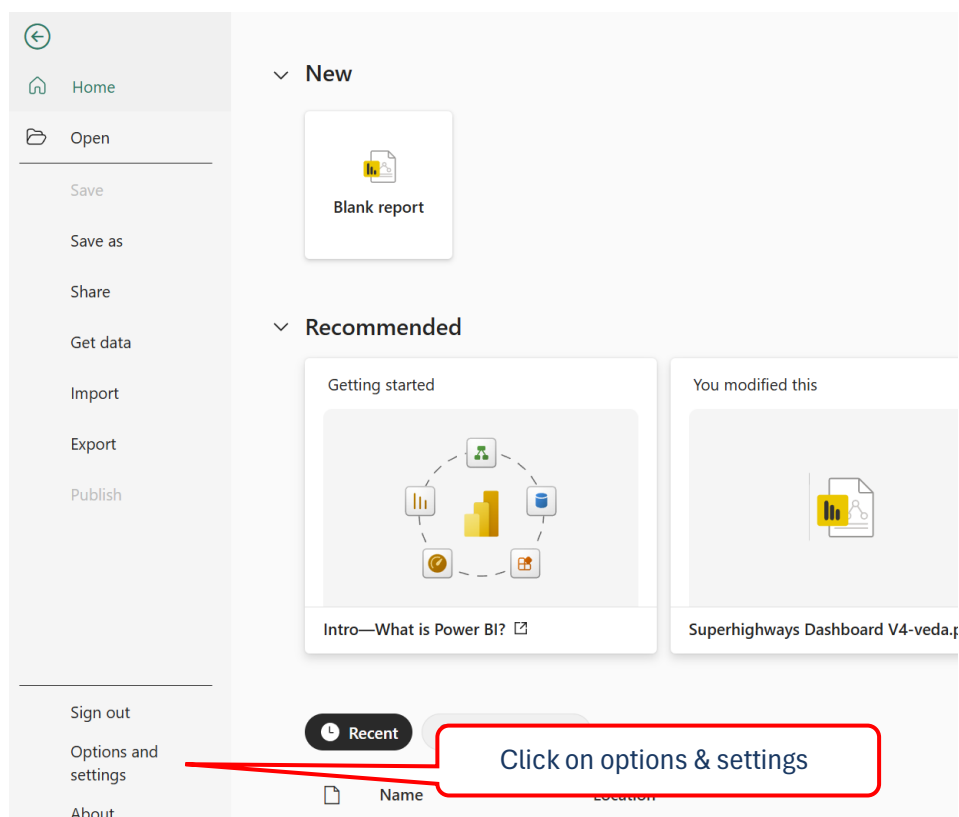
2. Getting set up to use maps

Maps are not enabled as standard in Power BI so you will need to follow a two step process to enable them:

Firstly you will need to contact your Systems Administrator to ask them to enable maps in Power BI. They will need to go to **Tenant Settings** → **Integration Settings** → Enable **Map and Filled Map Visuals**.

Once that has been done, you will need to restart Power BI and then follow these steps

1. Go to File
2. Click on Options & Settings



Options

GLOBAL

- Data Load
- Power Query Editor
- DirectQuery
- R scripting
- Python scripting
- Security**
- Privacy
- Regional Settings
- Updates
- Usage Data
- Diagnostics
- Preview features
- Save and Recover
- Report settings
- Copilot (preview)

CURRENT FILE

- Data Load
- Regional Settings
- Privacy
- Auto recovery
- Published semantic model set...
- Query reduction

Certificate Revocation

- ☐ Comprehensive check ⓘ
- ☒ Basic check ⓘ
- ☐ None ⓘ

[Learn more](#)

Click on Security

Web Content Review Warning Level ⓘ

Moderate ▼

Data Extensions

- ☒ (Recommended) Only allow Microsoft certified and other trusted third-party extensions to load
- ☐ (Not Recommended) Allow any extension to load without validation or warning

[Learn more about data extensions](#)

Custom visuals

- ☒ Show security warning when adding a custom visual to a report

ArcGIS for Power BI

- ☒ Use ArcGIS for Power BI

Select Map & Filled visuals

Map and Filled Map visuals

- ☒ Use Map and Filled Map visuals

Authentication Browser

OK

Cancel



3. Getting set up to be able to publish public Power BI reports

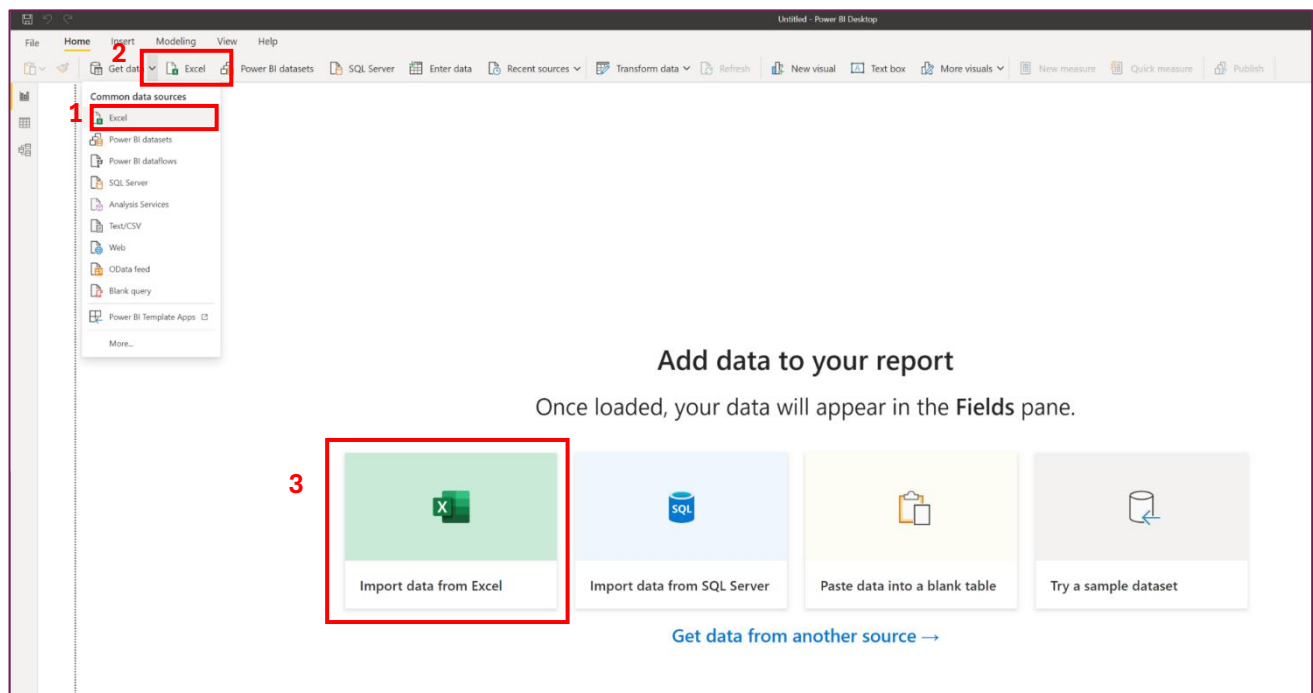
This needs to be done by your Systems Administrator before you can publish a report to the web.

1. Sign in to the Power BI service as an admin.
2. Go to the Admin Portal (Settings > Admin Portal).
3. Select Tenant settings.
4. Under Export and sharing settings, find Publish to web (public) and toggle it Enabled.
5. Choose who can create codes (e.g., The entire organization or Specific security groups)
6. click Apply.

Once that has been done you'll be able to open your report in the Power BI service, click on File > Embedreport > Publish to web, and follow the prompts to get the link or embed code

4. Bring data from Excel into PowerBI

1. Use one of the 3 options below to start the process of getting data from Excel



2. Find and select the Excel file required
3. Click on Open
4. In the Navigator pane select the worksheets and/or tables you want to import



Navigator

Display Options ▾

- Music Mentors participants data.xlsx [13]
 - ☐ Instruments
 - ☒ Participants2018
 - ☒ Participants2019
 - ☒ **Participants2020**
 - ☐ Exercise 1
 - ☐ Exercise 2
 - ☐ Exercise 3
 - ☐ Participant list
 - ☐ Sessions
 - ☐ Formulas
 - ☐ Participants
 - ☐ Participants

Participants2020

Year	First name	Last name	Prison	Postcode	Cate
01/01/2020	Prince	Charming	HMP Belmarsh	SE28 0EB	A
01/01/2020	Boy	George	HMP Belmarsh	SE28 0EB	A
01/01/2020	Road	Runner	HMP Belmarsh	SE28 0EB	A
01/01/2020	Road	Runner	HMP Belmarsh	SE28 0EB	A
01/01/2020	Donald	Duck	HMP Belmarsh	SE28 0EB	A
01/01/2020	Mickey	Mouse	HMP Belmarsh	SE28 0EB	A
01/01/2020	Ali	Baba	HMP Brixton	SW2 5XF	A
01/01/2020	Wiley	Coyote	HMP Brixton	SW2 5XF	A
01/01/2020	Butch	Cassidy	HMP Brixton	SW2 5XF	A
01/01/2020	Robin	Hood	HMP Brixton	SW2 5XF	A
01/01/2020	Jesse	James	HMP Brixton	SW2 5XF	A
01/01/2020	Arsene	Lupin	HMP Brixton	SW2 5XF	A
01/01/2020	Minnie	Mouse	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Mary	Whitehouse	HMP Bronzefield	TW15 3JZ	B
02/01/2020	Maya	Angelou	HMP Bronzefield	TW15 3JZ	B
03/01/2020	Virginia	Woolf	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Margaret	Atwood	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Marie	Curie	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Enid	Blyton	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Freya	Crew	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Harper	Lee	HMP Bronzefield	TW15 3JZ	B
01/01/2020	Joan	Chen	HMP Bronzefield	TW15 3JZ	B

1. Select the tables you require (a blue top on the icon shows that its a table)

2. The right-hand pane shows a preview of the data

3. Click on **Load** to bring the data into Power BI

5. Review the data

File Home Help **Table tools**

Name Participants2018

Mark as date table ▾
Calendars

Manage relationships
Relationships

New measure
Calculations

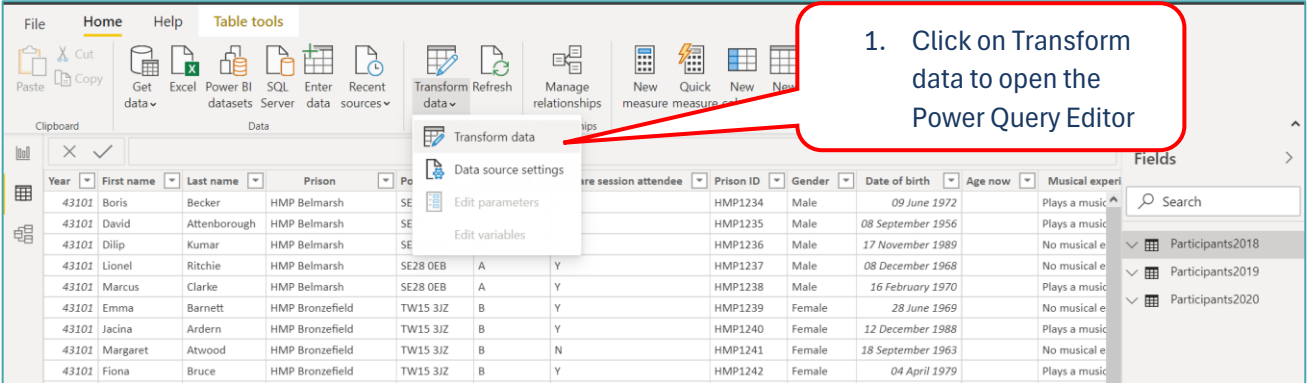
Quick measure column
Calculations

New table
Calculations

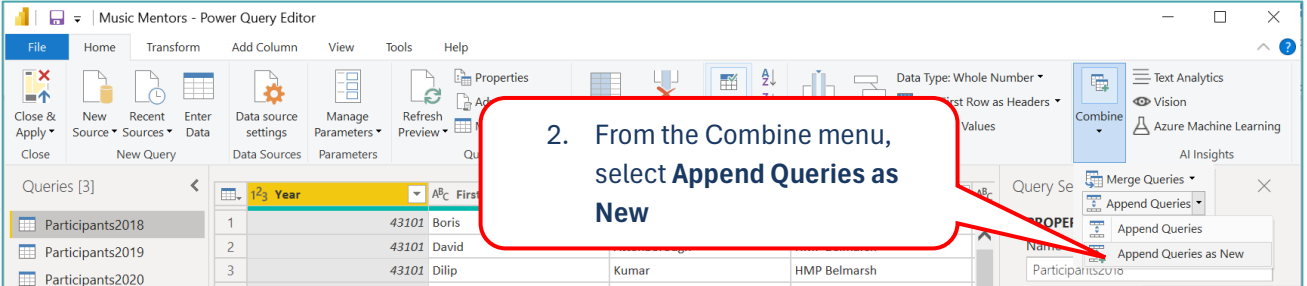
Year First name Last name Prison Postcode Category Welfare session attendee Prison ID Gender Date of birth Age now Musical experi

Fields

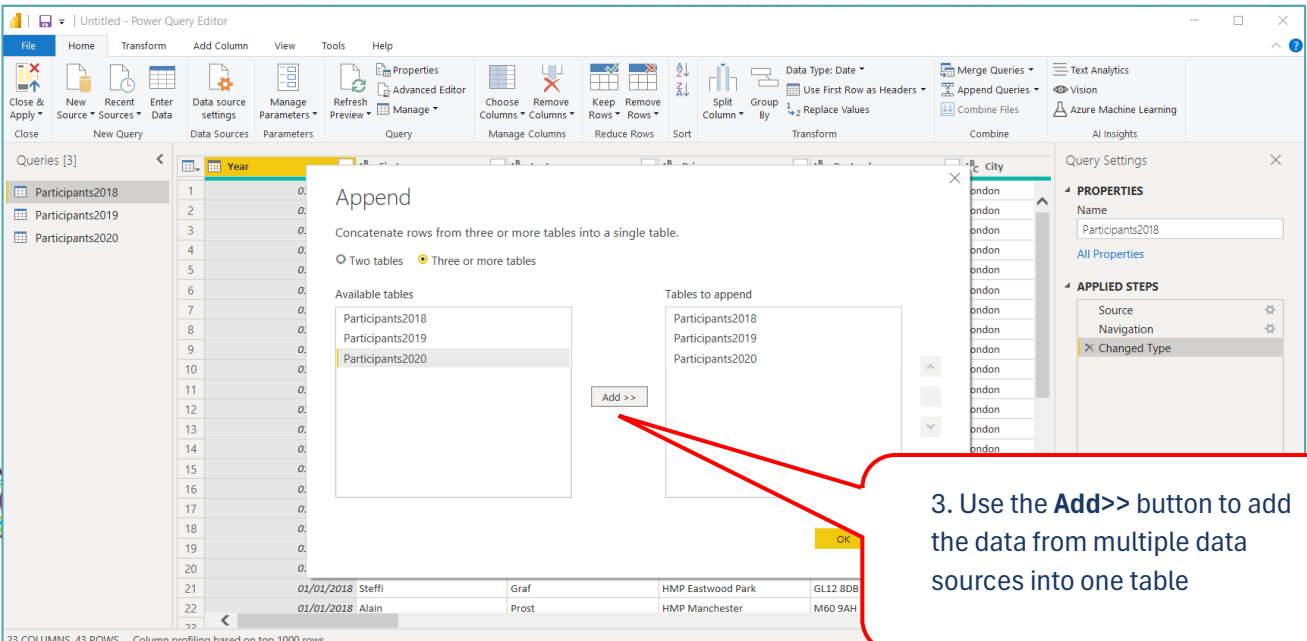
6. Use Transform data to combine data from multiple Excel tables



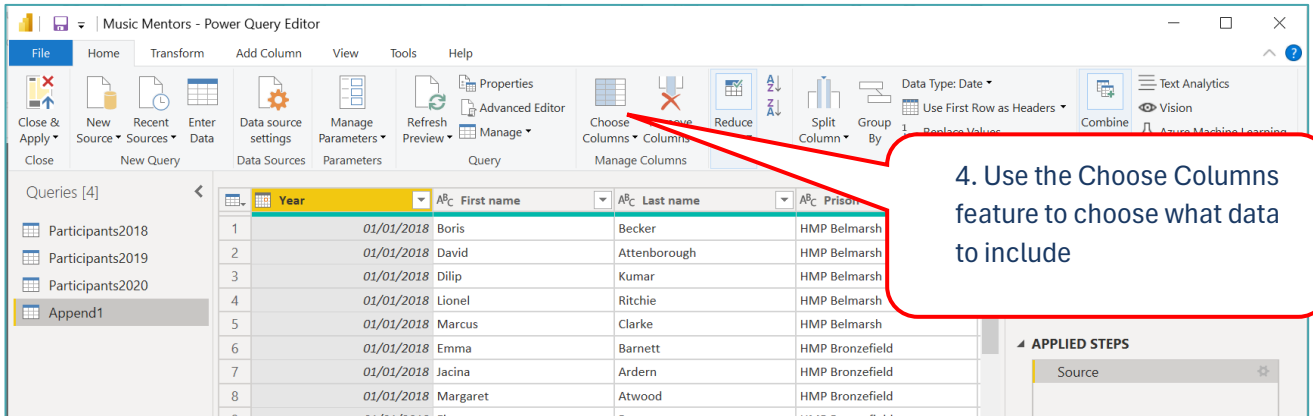
1. Click on Transform data to open the Power Query Editor



2. From the Combine menu, select Append Queries as New

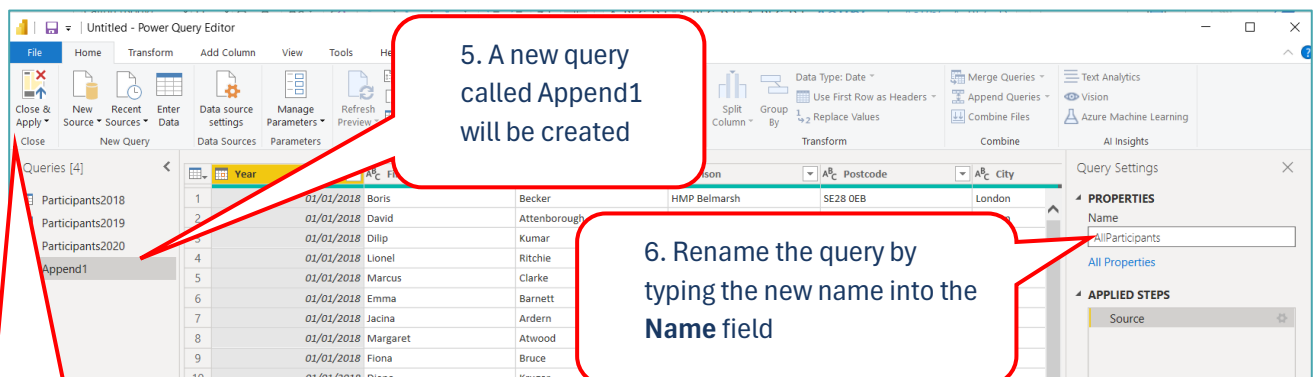


3. Use the Add>> button to add the data from multiple data sources into one table



4. Use the Choose Columns feature to choose what data to include

Year	ABc First name	ABc Last name	ABc Prison
01/01/2018	Boris	Becker	HMP Belmarsh
01/01/2018	David	Attenborough	HMP Belmarsh
01/01/2018	Dilip	Kumar	HMP Belmarsh
01/01/2018	Lionel	Ritchie	HMP Belmarsh
01/01/2018	Marcus	Clarke	HMP Belmarsh
01/01/2018	Emma	Barnett	HMP Bronzefield
01/01/2018	Jacina	Ardern	HMP Bronzefield
01/01/2018	Margaret	Atwood	HMP Bronzefield



5. A new query called Append1 will be created

6. Rename the query by typing the new name into the Name field

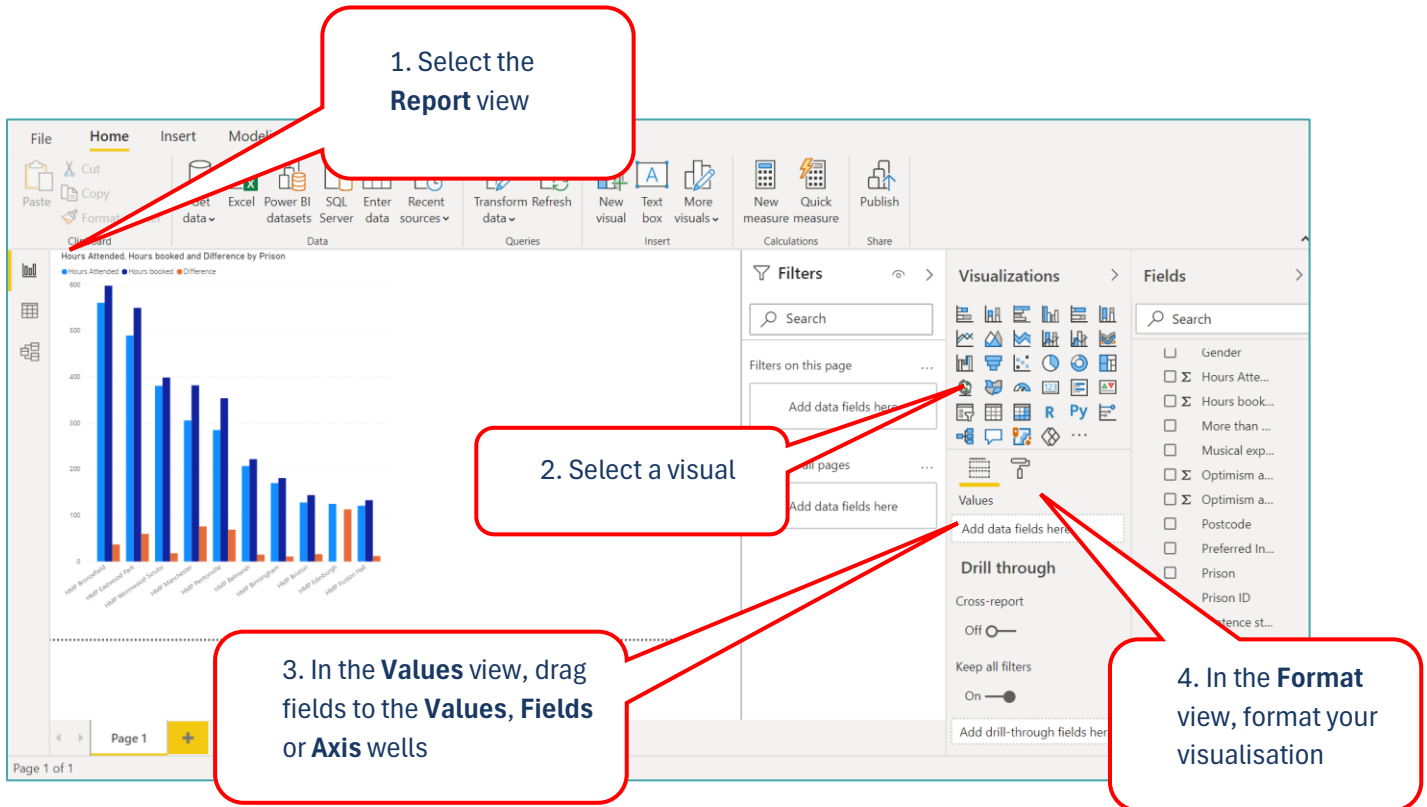
Year	ABc First name	ABc Last name	ABc Prison	ABc Postcode	ABc City
01/01/2018	Boris	Becker	HMP Belmarsh	SE28 0EB	London
01/01/2018	David	Attenborough			
01/01/2018	Dilip	Kumar			
01/01/2018	Lionel	Ritchie			
01/01/2018	Marcus	Clarke			
01/01/2018	Emma	Barnett			
01/01/2018	Jacina	Ardern			
01/01/2018	Margaret	Atwood			
01/01/2018	Fiona	Bruce			
01/01/2018	Dilip	Krueger			

7. Click on **Close & Apply** to create the query



7. Create a visual on the report canvas

There are many ways of tackling this and a vast amount of functionality so here are just the basics:

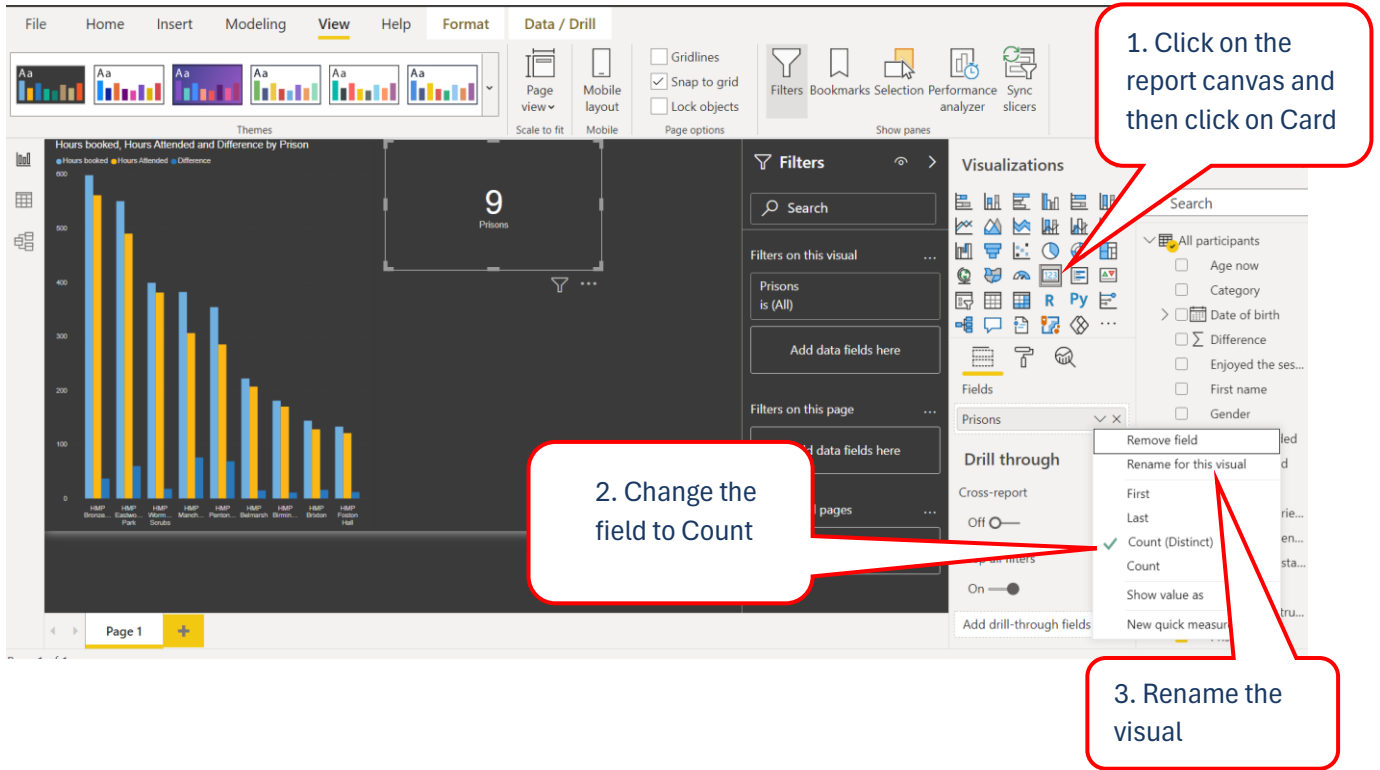


The screenshot shows the Power BI Desktop interface with a bar chart titled 'Hours Attended, Hours booked and Difference by Prison'. The chart displays three data series: 'Hours Attended' (blue), 'Hours booked' (dark blue), and 'Difference' (orange). The x-axis lists various prisons, and the y-axis shows the number of hours from 0 to 600. The interface includes the ribbon (File, Home, Insert, Model), the Filters pane, the Visualizations pane, and the Fields pane. Four numbered callouts provide instructions:

- 1. Select the Report view**: Points to the 'Report' view icon in the top-left corner of the ribbon.
- 2. Select a visual**: Points to a bar chart icon in the Visualizations pane.
- 3. In the Values view, drag fields to the Values, Fields or Axis wells**: Points to the 'Values' well in the Visualizations pane.
- 4. In the Format view, format your visualisation**: Points to the 'Format' view icon in the top-right corner of the ribbon.



Create a Card



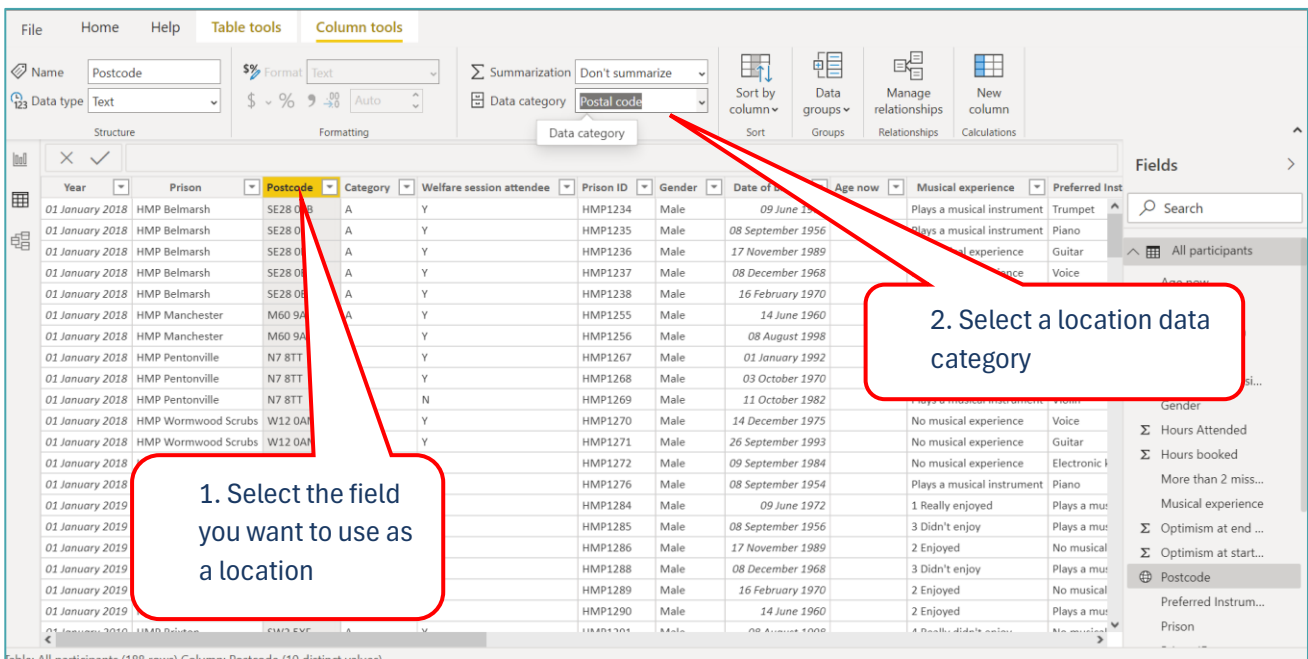
1. Click on the report canvas and then click on Card

2. Change the field to Count

3. Rename the visual

8. Create a map visual

Categorise the fields you want to use as locations before selecting a map visual



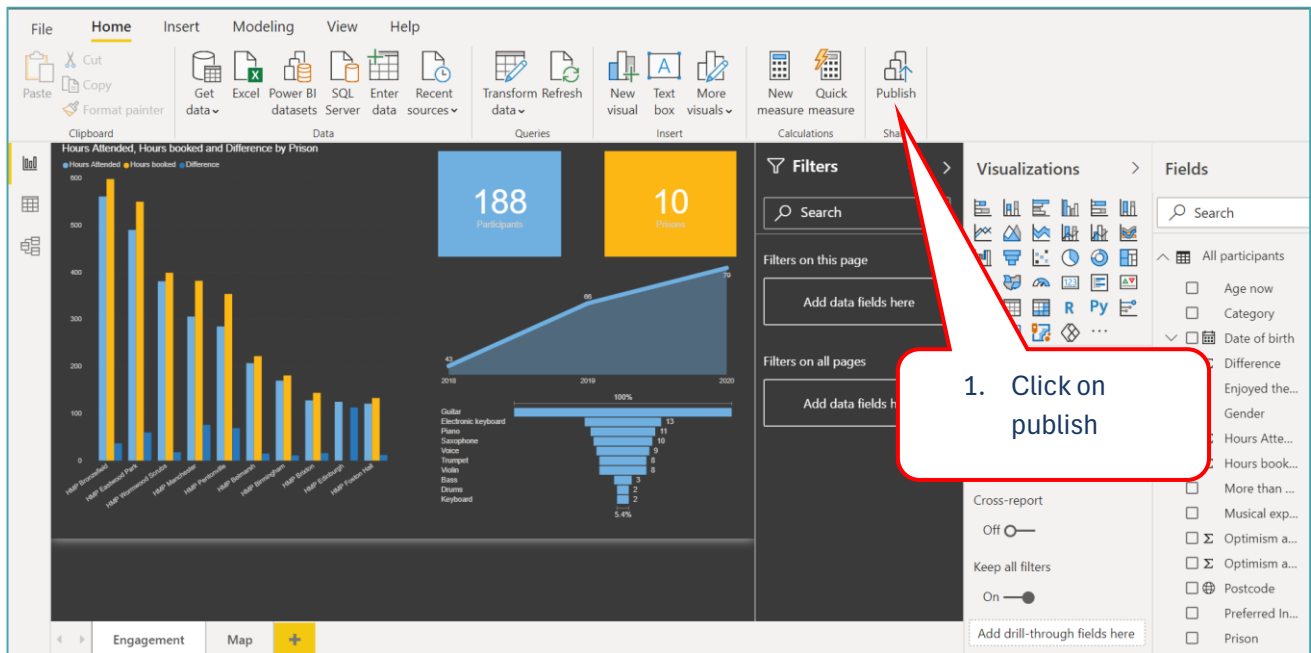
1. Select the field you want to use as a location

2. Select a location data category

Then select the map from the visualisation options.



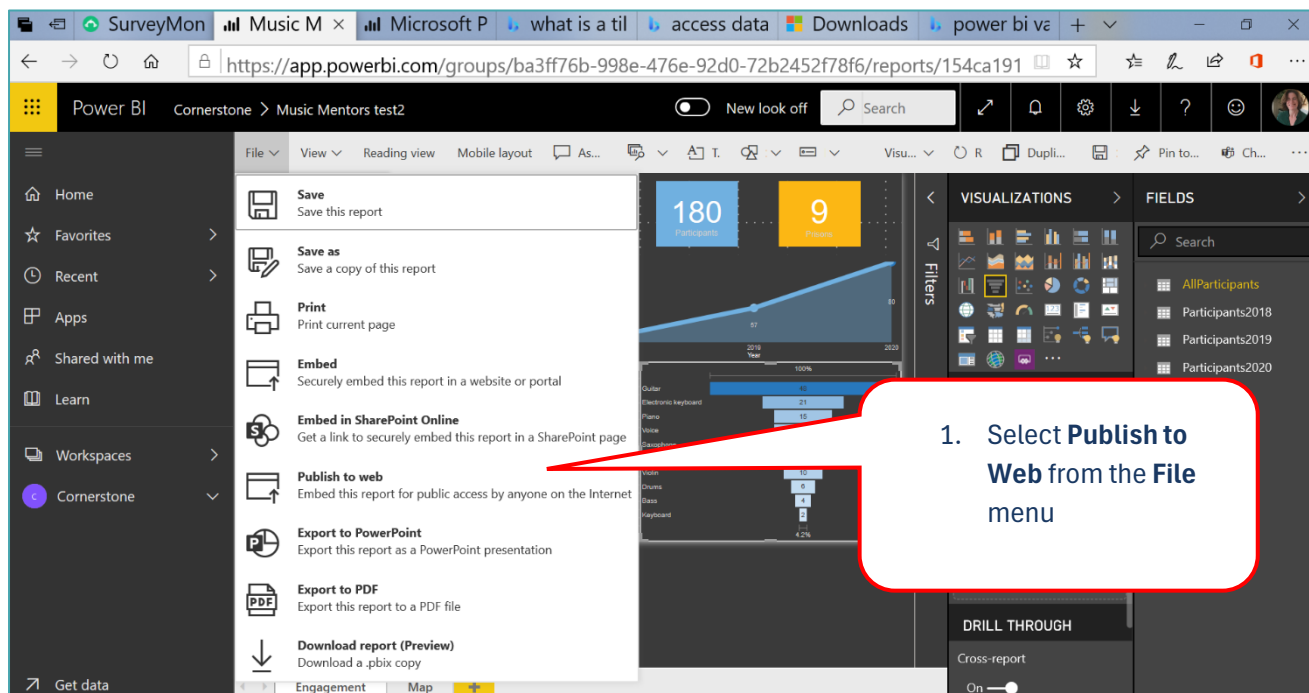
9. Publish the report internally or with a named person



This will create a .PBIX file which can be stored on a shared drive & emailed to people. The Power BI service or desktop application is required to open it.

10. Publishing the report publicly

For this you need to open the report in the **Power BI** service which you can access through Microsoft 365.

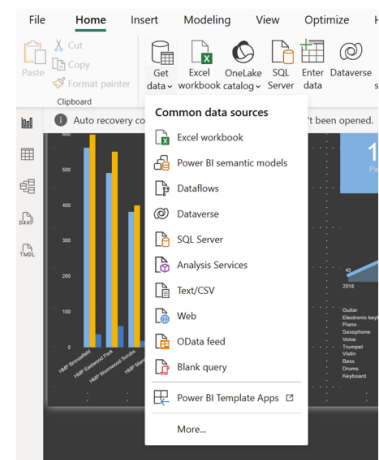


2. Copy the code to share with someone or embed it in your website

11.Training Session Exercises

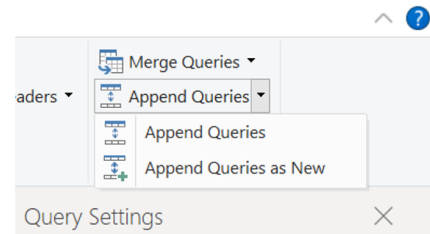
Exercise 1 – Use Get data to bring Excel data into Power BI Desktop

- ❑ Make sure your Excel file is closed
- ❑ Open & Log onto Power BI Desktop
- ❑ Save your report as “Music Mentors” (File menu – Save)
- ❑ Use Get Data to connect to the Music Mentors participants Excel file
- ❑ In Navigator select the 3 tables: Participants 2023, 2024 & 2025
- ❑ Click on Close and Load
- ❑ Go to the Data view to review the data



Exercise 2 – Use Transform data to combine the 3 years data

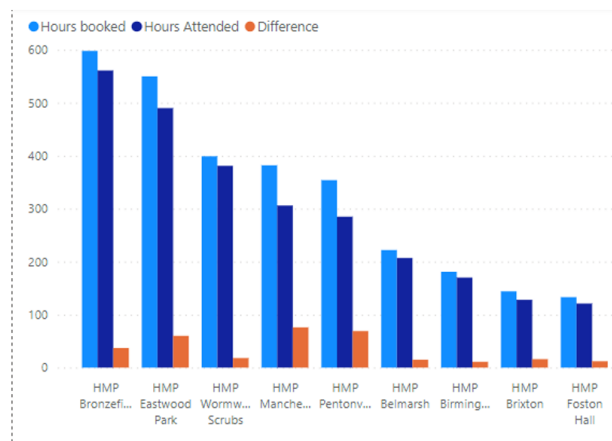
- ☐ Click on Transform data to open the Query Editor
- ☐ Create a **new** append query (Home tab-Combine-Append queries-**Append as new**)
- ☐ Remove the First and Last name columns from the new query (Home tab – Choose columns)
- ☐ Name the query “All participants”
- ☐ Close & Apply the query
- ☐ Return to the Data view and select the **All participants** table to see if the query has loaded correctly
- ☐ Save your report



Exercise 3 – Adding a clustered column

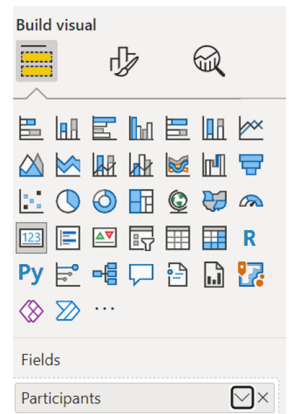
- ☐ Go to the Report view
- ☐ Select a Clustered column visual
- ☐ Add the following fields to the **Y Axis** well:
 - ☐ Hours booked
 - ☐ Hours attended
 - ☐ Difference
- ☐ Add the **Prison** field to the **X Axis** well
- ☐ Remove the title from the X & Y Axis (Format-Axis-Title)
- ☐ Resize the chart using click and drag
- ☐ Name the page “Attendance”

Optional: Change colour theme (View menu – theme)



Exercise 4 – Adding cards

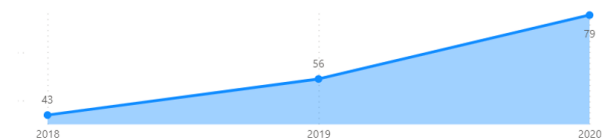
- ☐ Go to the Report view
- ☐ Select a Card visual
- ☐ For the total participants:
 - ☐ Add the **Prison ID** field to the field well
 - ☐ Change the field type to **Count** (click on arrow next to field name)
 - ☐ Rename it to **Participants** (click on arrow next to field name)
- ☐ For the number of prisons:
 - ☐ Add the **Prison** field to the field well
 - ☐ Change the field type to **Count (Distinct)** (click on arrow next to field name)
 - ☐ Rename visual **Prisons** (click on arrow next to field name)
- ☐ Move and resize the cards



Optional: change the background colour on the cards (Format-General-Effects-background-colour)

Exercise 5 – Add an Area chart

- ☐ Go to the Report view
- ☐ Select a Area Chart visual
- ☐ Add **Prison ID** to the Y Axis well
- ☐ Add **Year** to the X Axis well
- ☐ Remove the Title from the X-Axis (Format -visual-X-Axis-Title Off)
- ☐ Remove the Y-Axis (including title)
- ☐ Turn Data labels on (Format-Visual-Data Labels-On)
- ☐ Rename the chart (Format-General-Title)

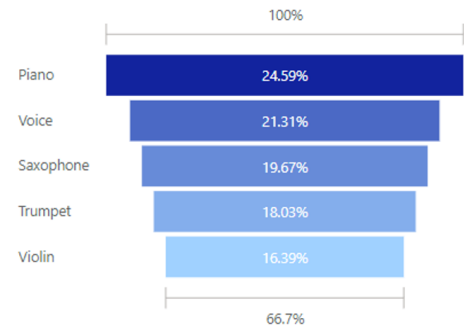


Optional: Add data points (Format-visual-markers-on)



Extension Exercise 6 – Add a Funnel chart

- ☐ Go to the Report view
- ☐ Select a **Funnel** visual
- ☐ Add **Preferred Instrument** to the Category wells
- ☐ Add **Prison ID** to the Value well
- ☐ Remove **Title** (Format-general-Title)
- ☐ Change the colour of the data points (Format-Visual-Colours- FX or Show all to change each one manually)
- ☐ Use the filter to show only the top 5 most popular instruments (Filter-Preferred instrument-Advanced filter-Filter type =Top N)
- ☐ Change the field value to show as a percentage (Build-value-show value as %)



Exercise 7 – Add a Map

- ☐ Go to the Data view
- ☐ Categorise the **Post code** field as a Post code data field
- ☐ Return to the **Report** view
- ☐ Insert a page into the report & rename it "Map"
- ☐ Select a **Map** visual (not a filled map)
- ☐ Add the Post code field to the **Location** well
- ☐ Resize the map to fit the page
- ☐ Add **Category** to the **Legend** well
- ☐ Add **Prison ID** to the **Size** well & rename to "Participants"
- ☐ Add **Prison** to Tool Tips & rename "Prison"
- ☐ Remove the visual title (Format-General -Title off)
- ☐ Turn on Zoom buttons (Format-Visual-Controls-Zoom buttons)

Optional: Change the Bubble size (Format-Bubbles-Size)

