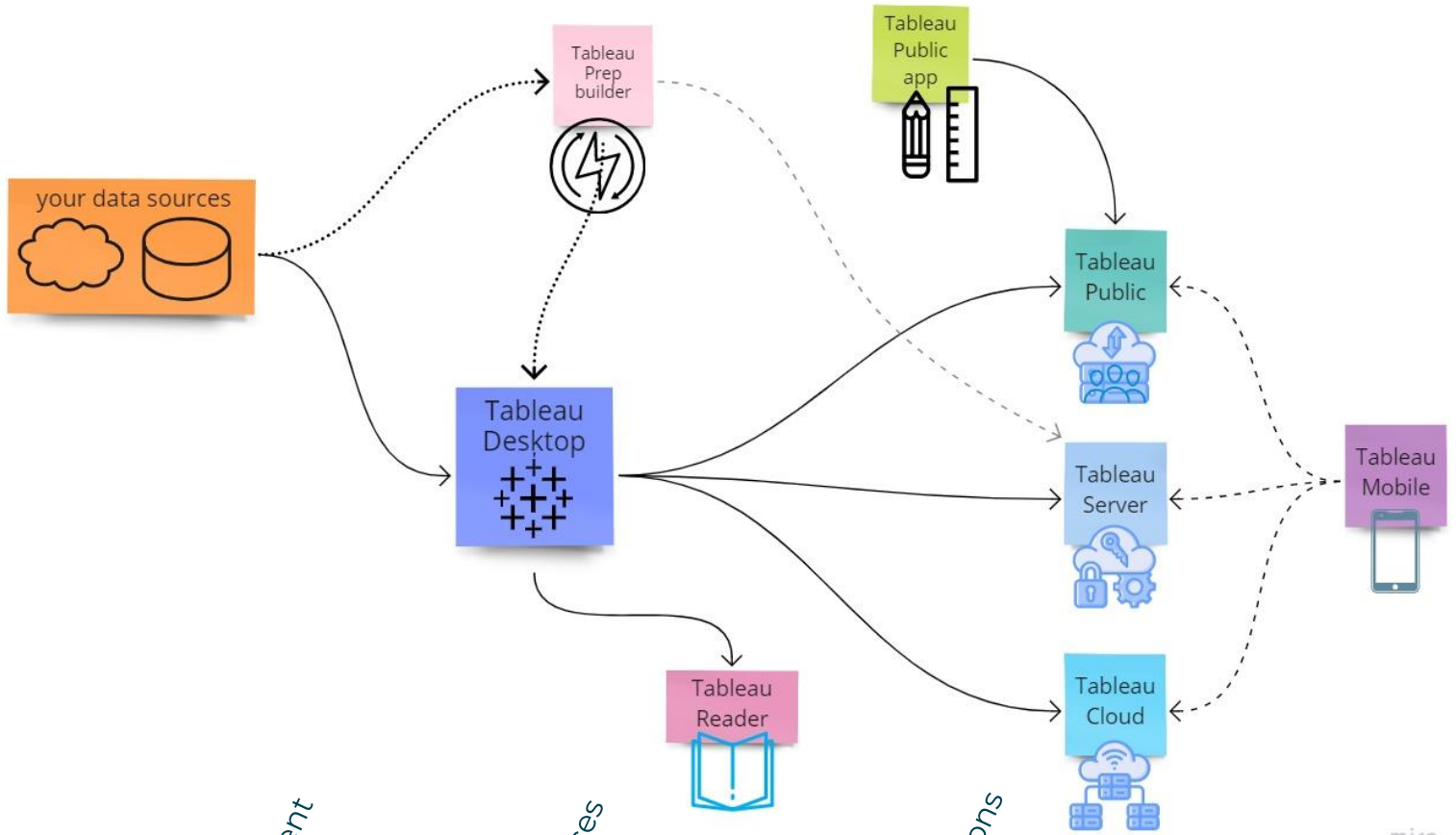
POWERING POTENTIAL

Tableau for Technical Users

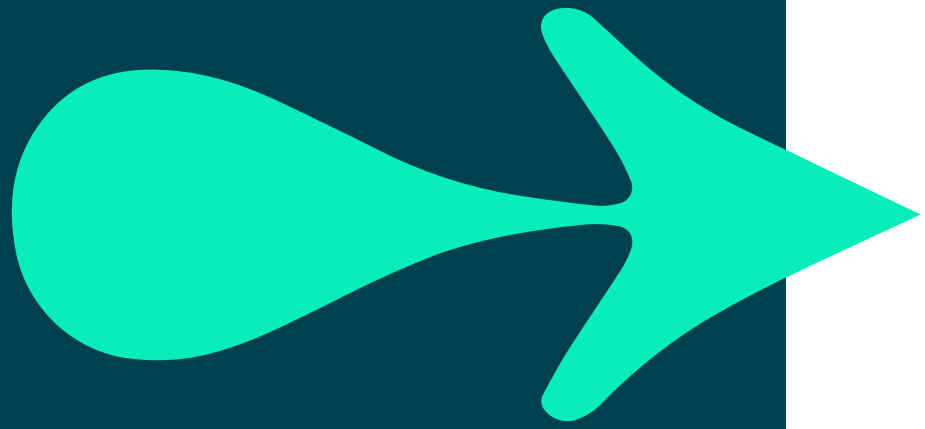
Tableau v 2022.2 +

Orientation



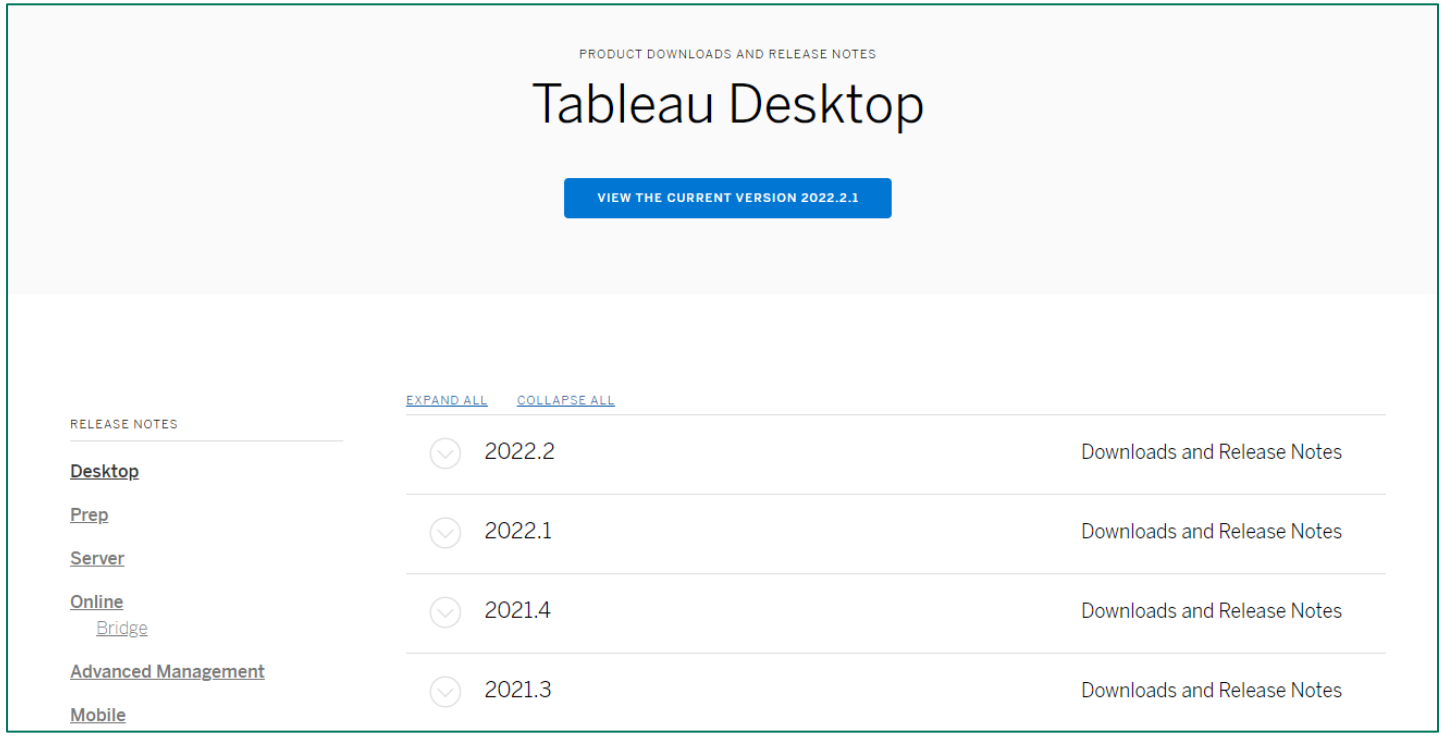
Course Outcomes

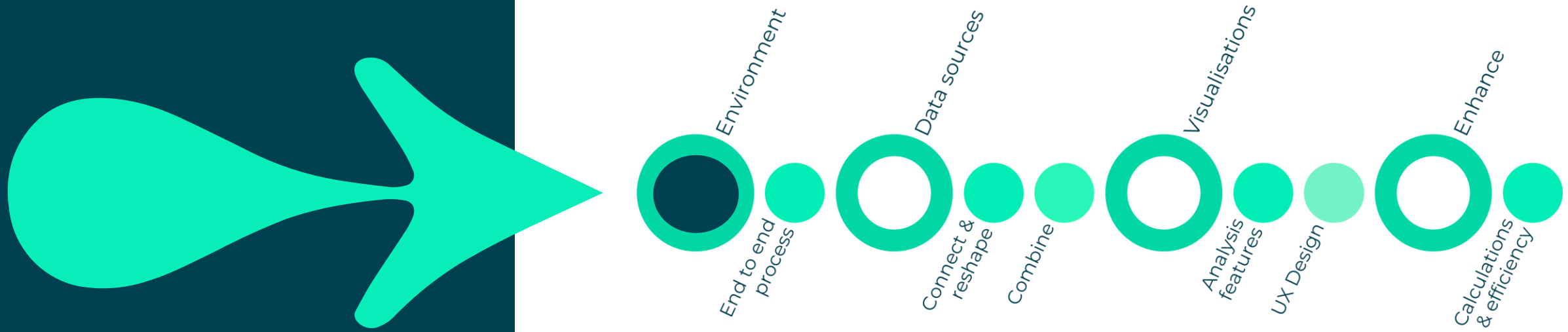
- Curate data sources
- Add knowledge layer on top of data
- Design engaging, interactive vizzes
- Super user tips and tricks
- Enhance product knowledge



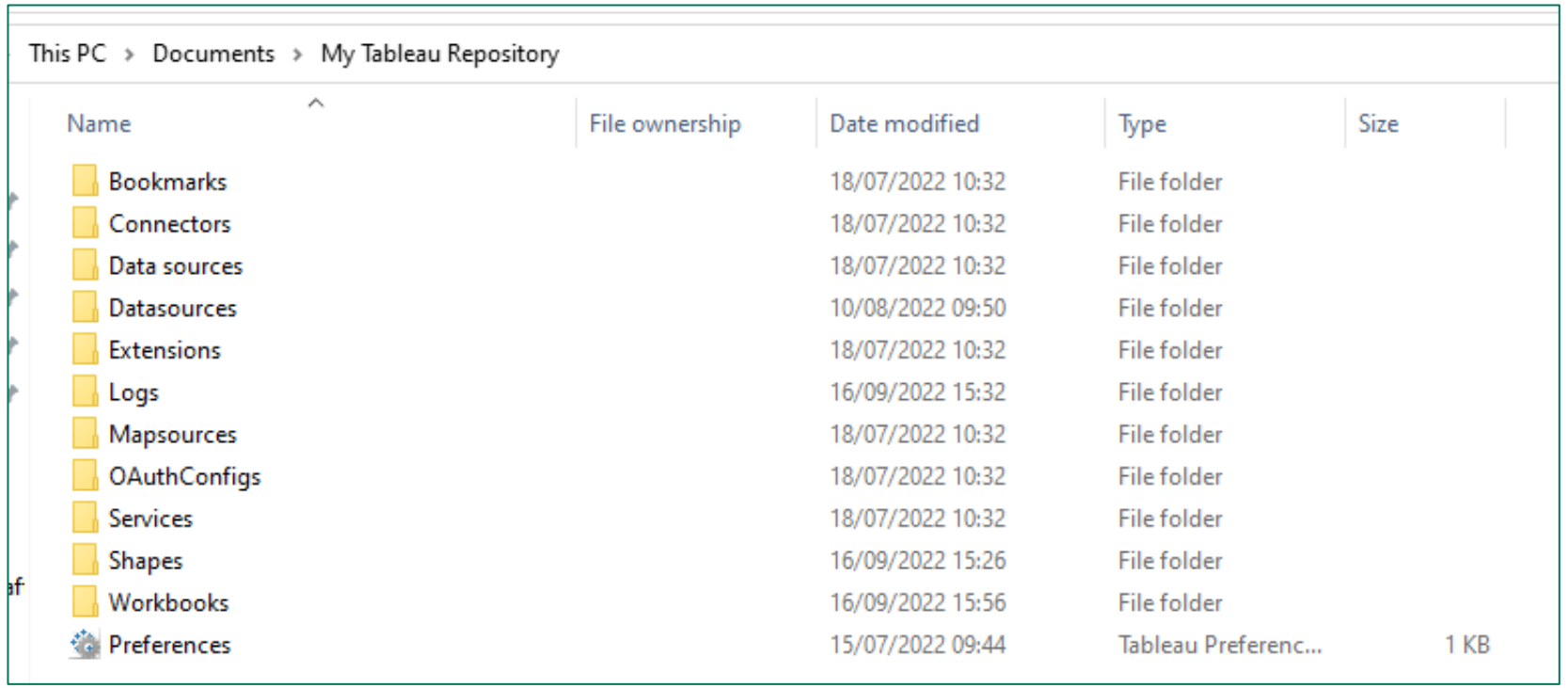
Module 1
Product and Overview

Product releases

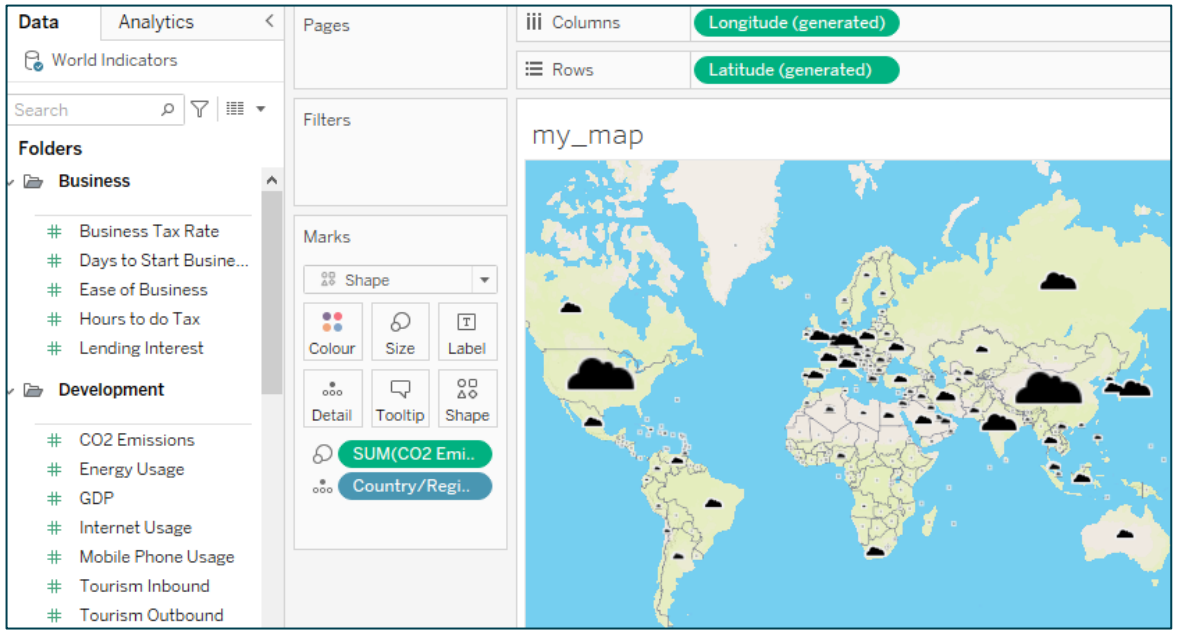




My Tableau Repository

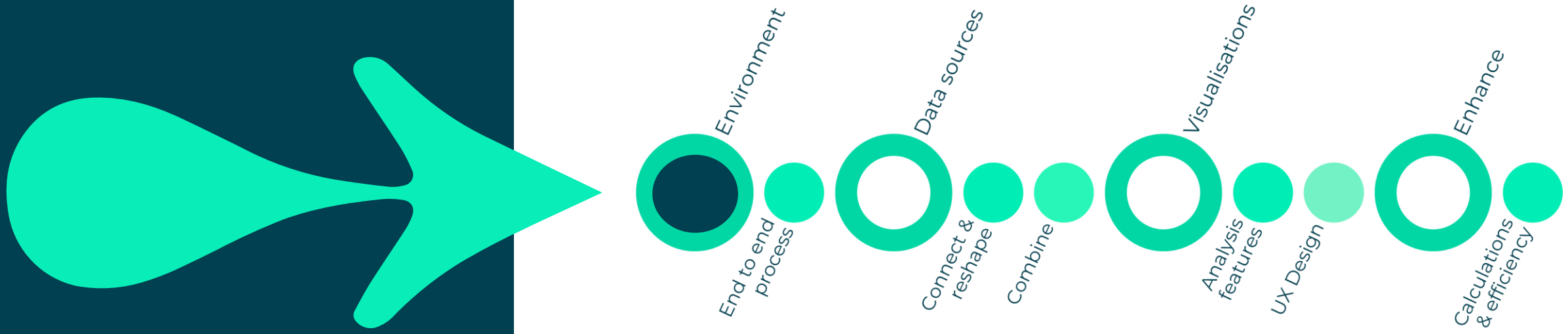


Open .tds and create a viz for publishing



Q - Which country produces the most CO2 emissions?

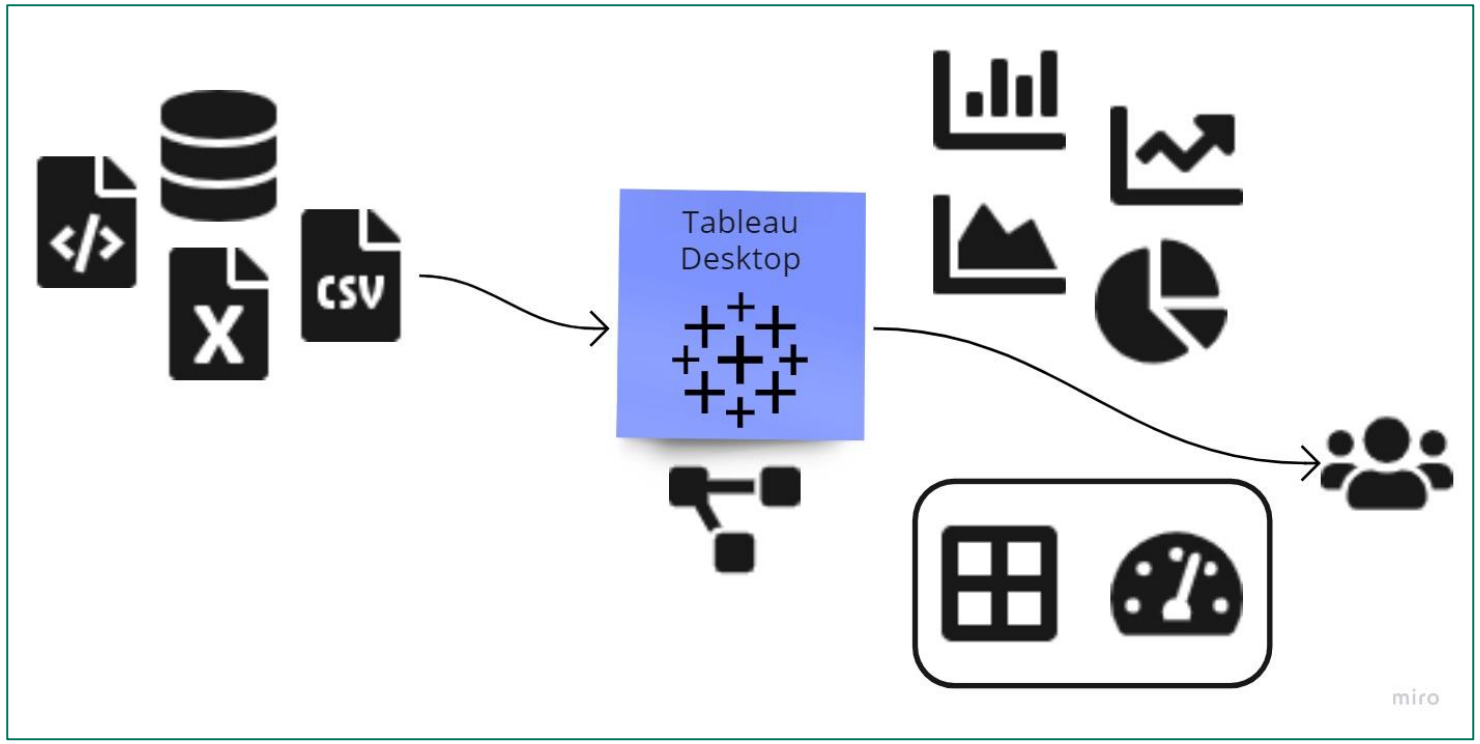
1. Connect to data source
2. Create viz
3. Publish



Activity 1.1:
Set-up for publishing

- Find specific version of Tableau
- View **Documents/My Tableau Repository**
  - ◊ Open sample tds
  - ◊ Register product
- Log in to tableau public
- Create map viz and publish

End to end flow



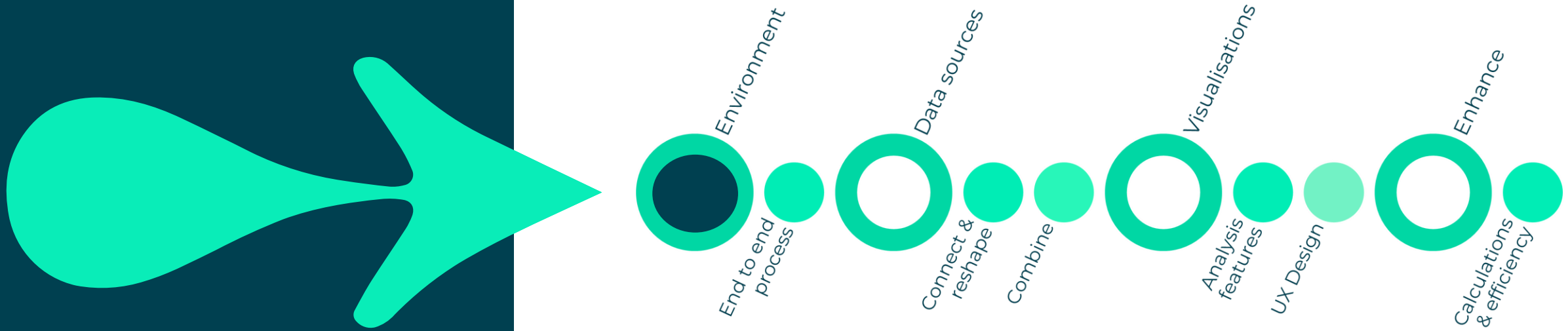
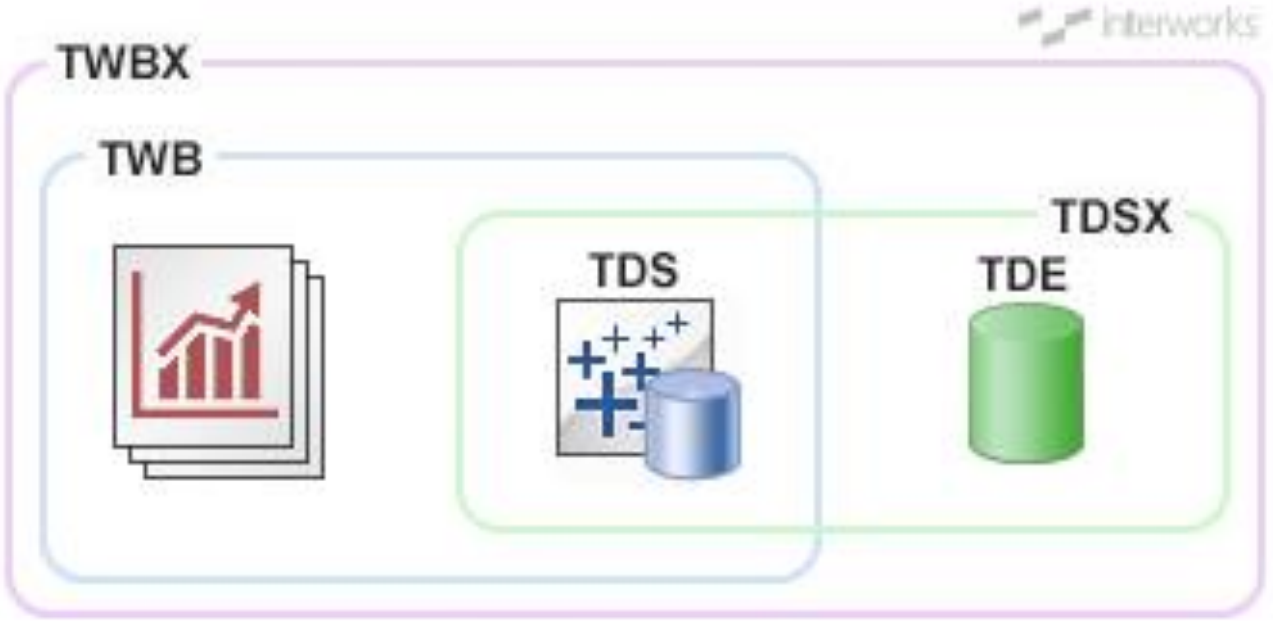
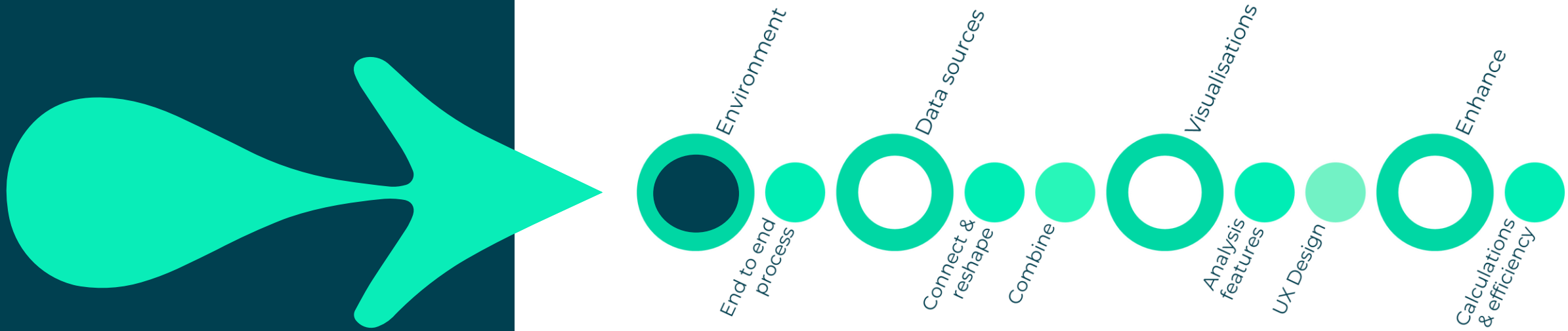


Tableau file types

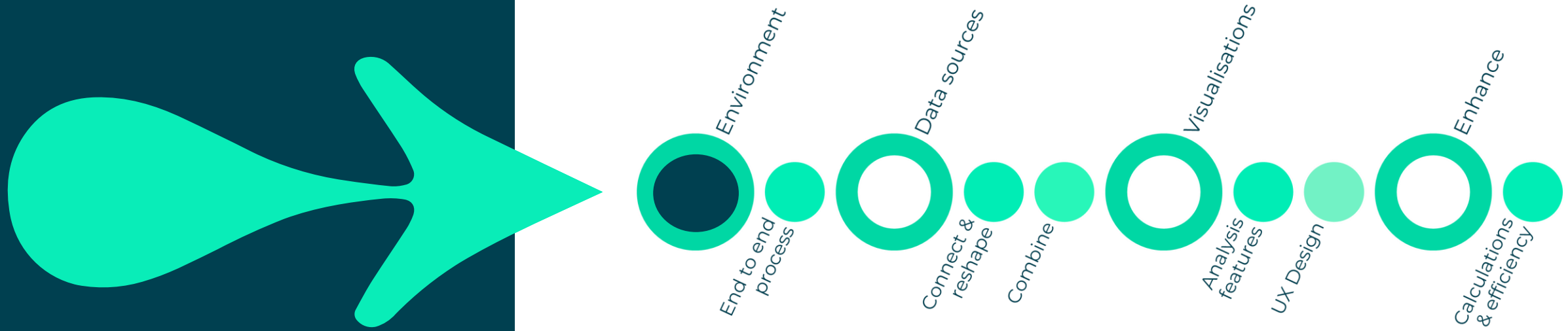


Credit – Robert Curtis



Interactivity

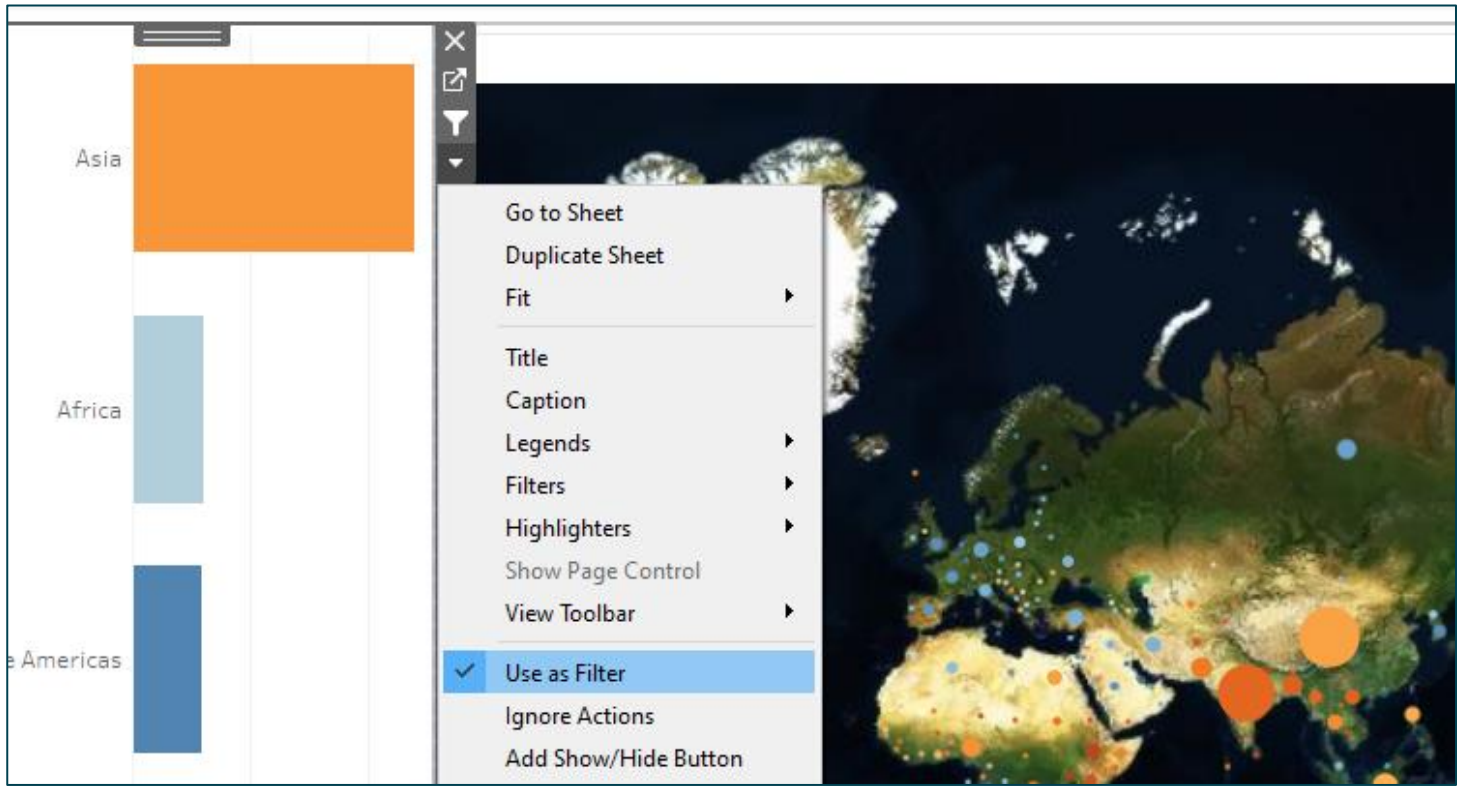
Use a filter on continent to make the viz more interactive



Activity 1.2: Introduce interactivity

- Create a second worksheet
- Place on dashboard
- Use second sheet as a filter
- Publish again

User Interaction



Licenses

Every deployment requires at least one Creator

Tableau Creator

$70

USD/user/month
billed annually

Discover insights with a powerful suite of products that support your end-to-end analytics workflow.

Includes
- TABLEAU DESKTOP
- TABLEAU PREP

And one Creator license of
- TABLEAU SERVER

Tableau Explorer

$35

USD/user/month
billed annually

Explore trusted data and answer your own questions faster with full self-service analytics.

Includes one Explorer license of
- TABLEAU SERVER

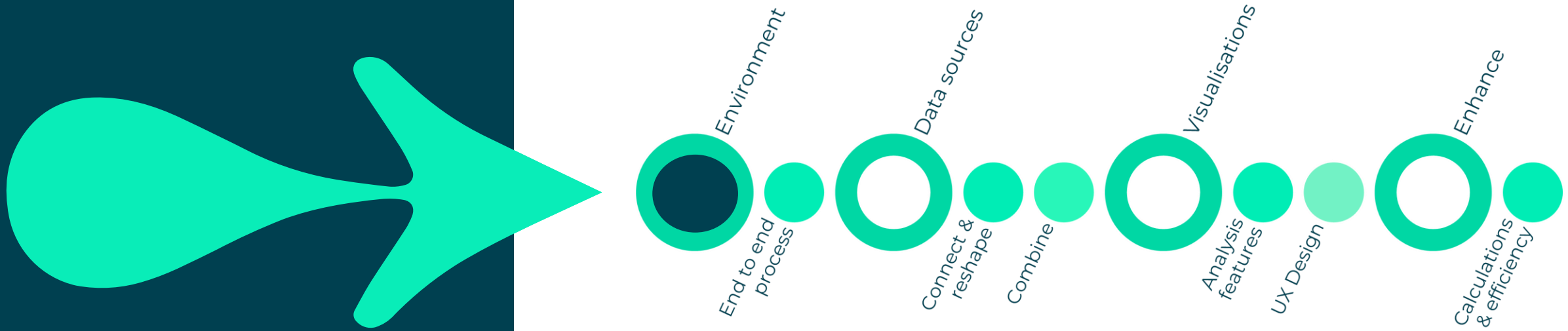
Tableau Viewer

$12

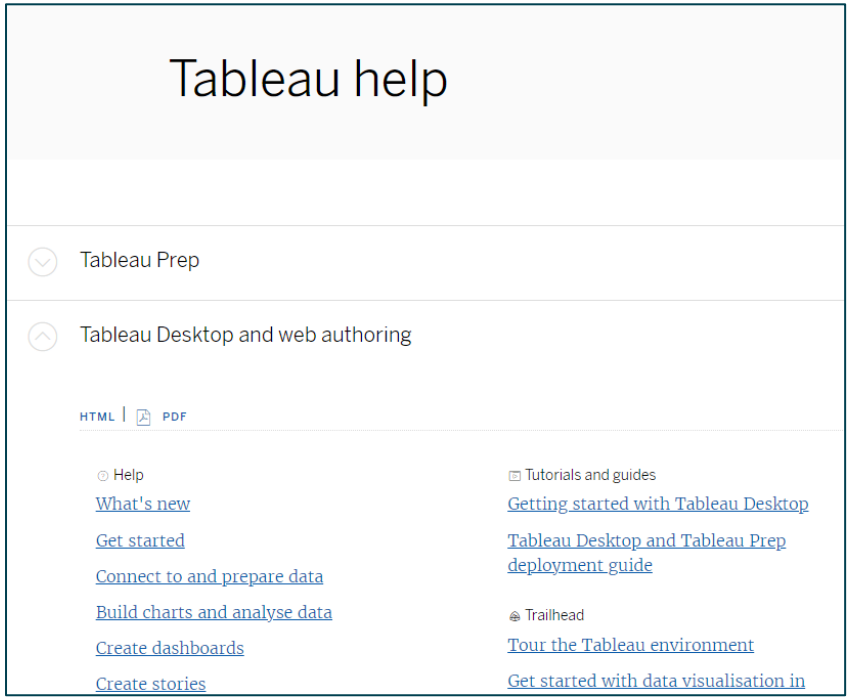
USD/user/month
billed annually | min. 100 Viewers required

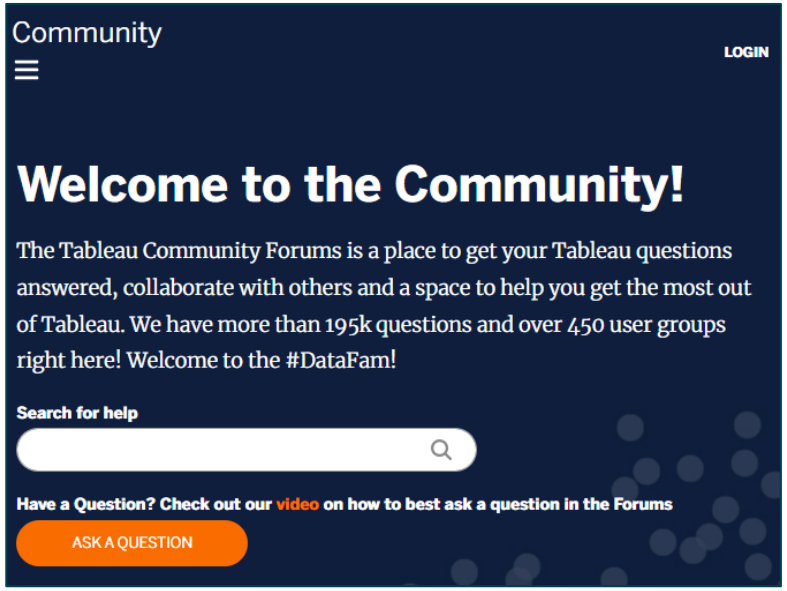
View and interact with dashboards and visualizations in a secure, easy-to-use platform.

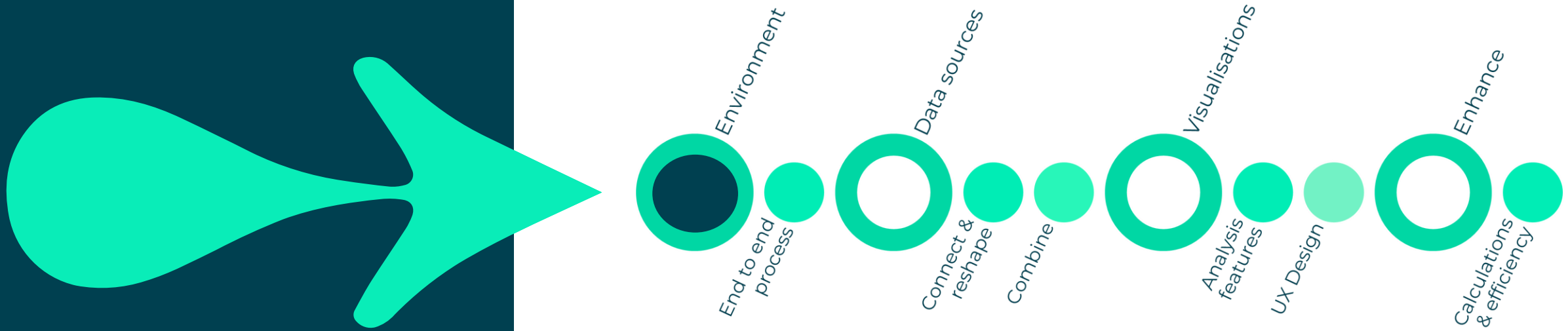
Includes one Viewer license of
- TABLEAU SERVER



Getting technical help







Activity 1.3: Using the Help

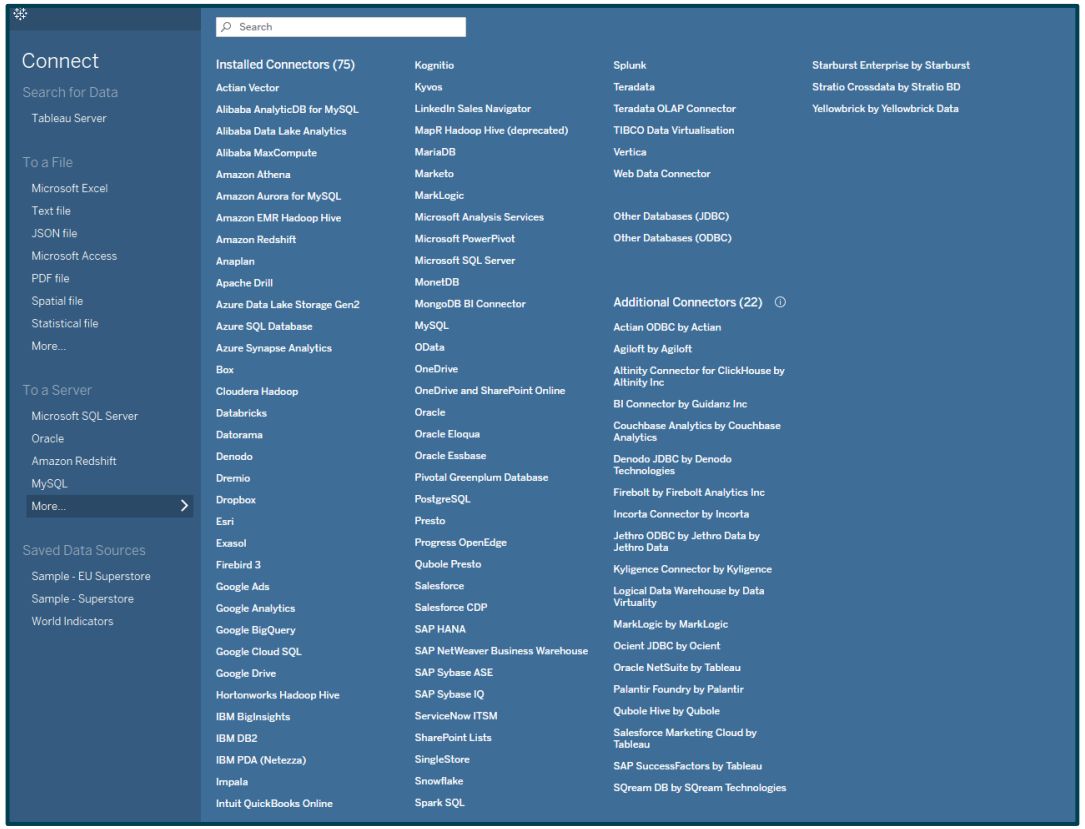
- Navigate around the Help resources
- Filter by Product and Topic
- Find ‘Rebrand a Dashboard’
  - Change workbook theme font and size
  - Optional -add an image

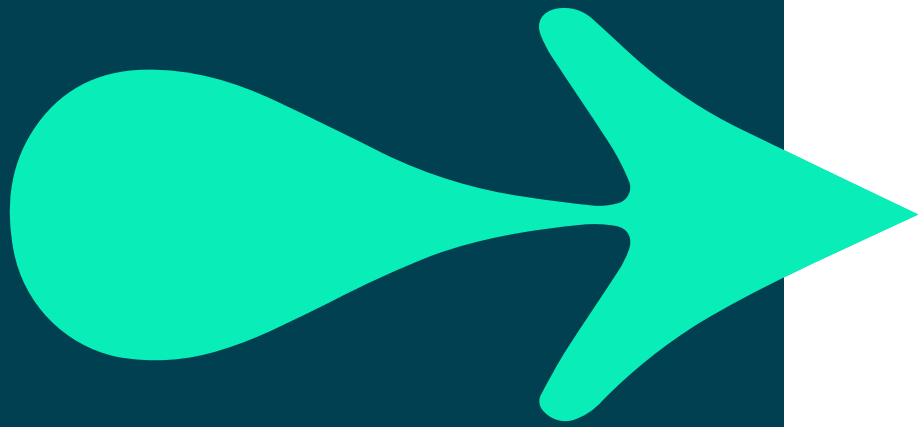
Summary of what we learnt

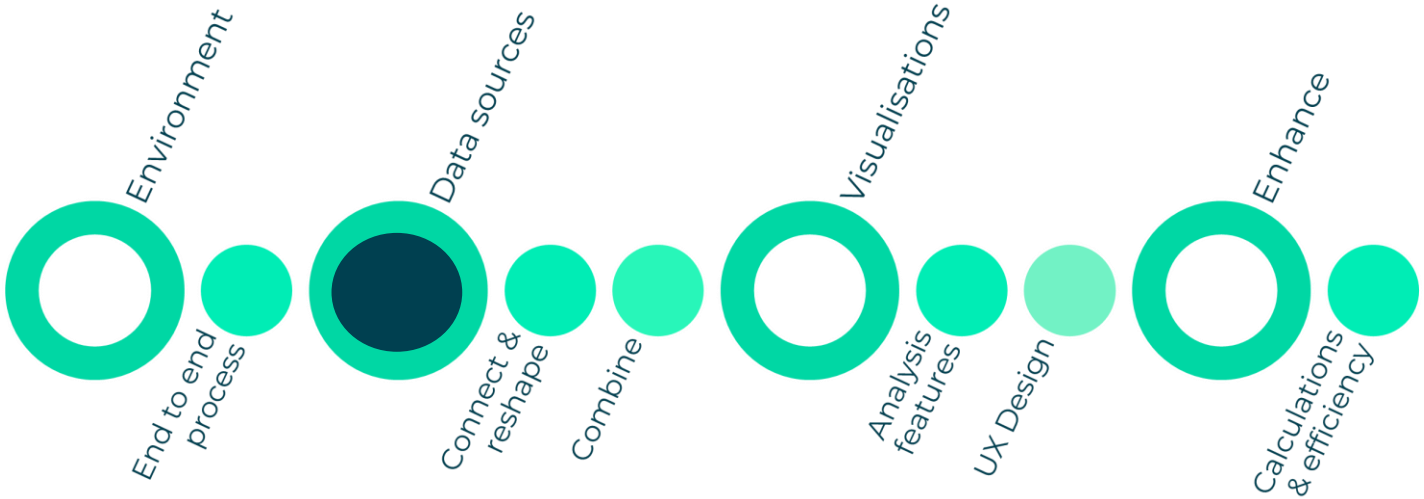
1. The product(s)
2. Installation and Releases
3. Licensing
4. Sharing what you create

Module 2
Data Sources: Connections & Purpose

Data source connections







Server sources - drivers

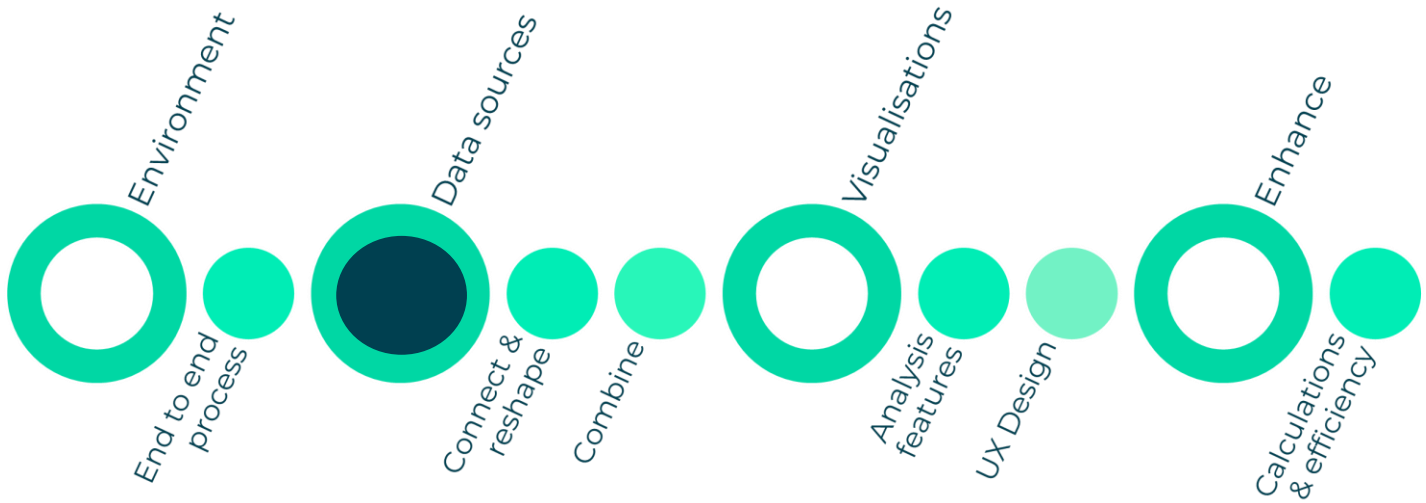
Data Source: Amazon Athena | Operating System: Windows | Bit Version: 64-bit

Amazon Athena

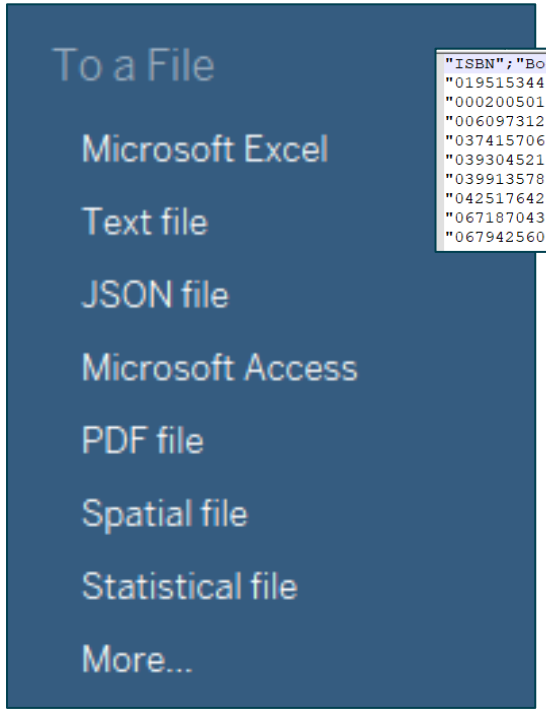
Tableau Desktop, Tableau Server: 2020.2 - 2022.2.2

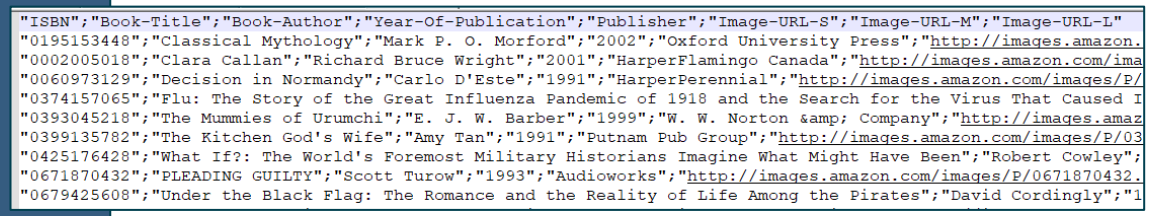
Complete the following steps to install the JDBC driver for Amazon Athena on your Windows computer:

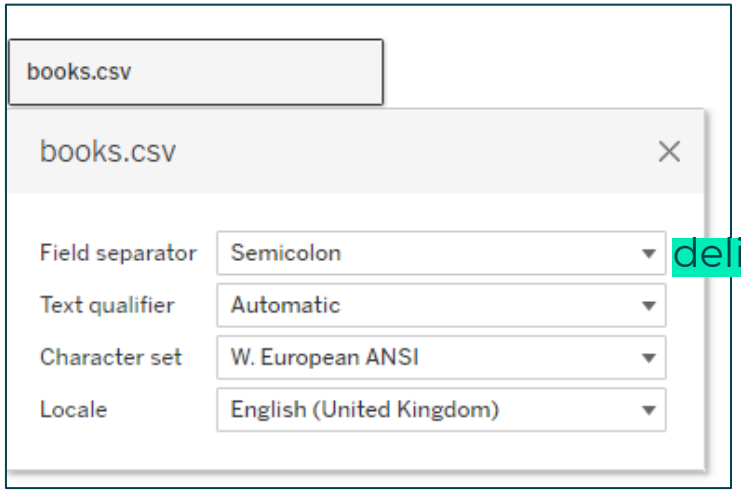
1. Download the JDBC Driver with AWS SDK (.zip file) from the Amazon Athena User Guide on Amazon's website.
2. Extract the contents of the .zip file and move the JDBC 4.2 version of the extracted .jar file to C:\Program Files\Tableau\Drivers.



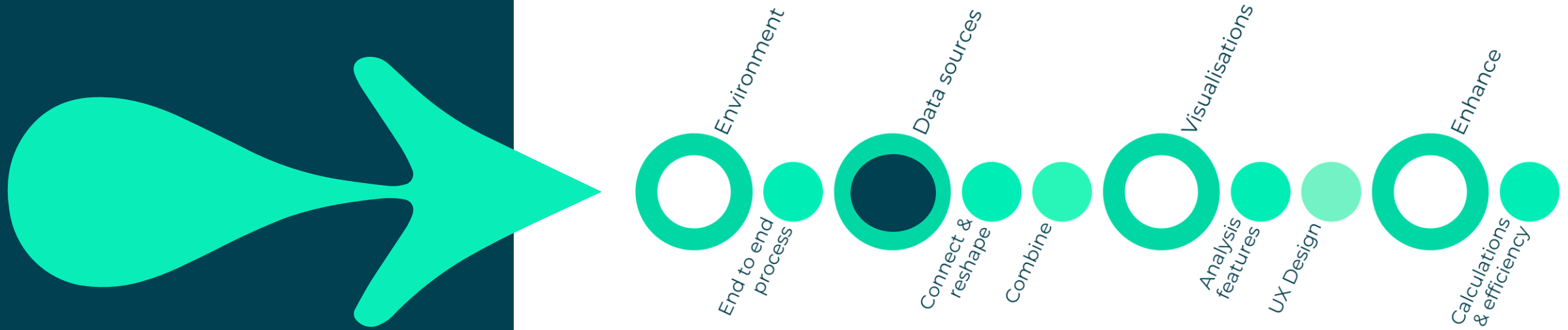
File sources



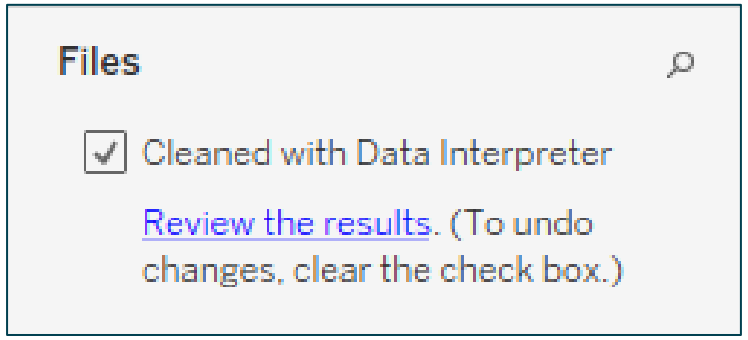




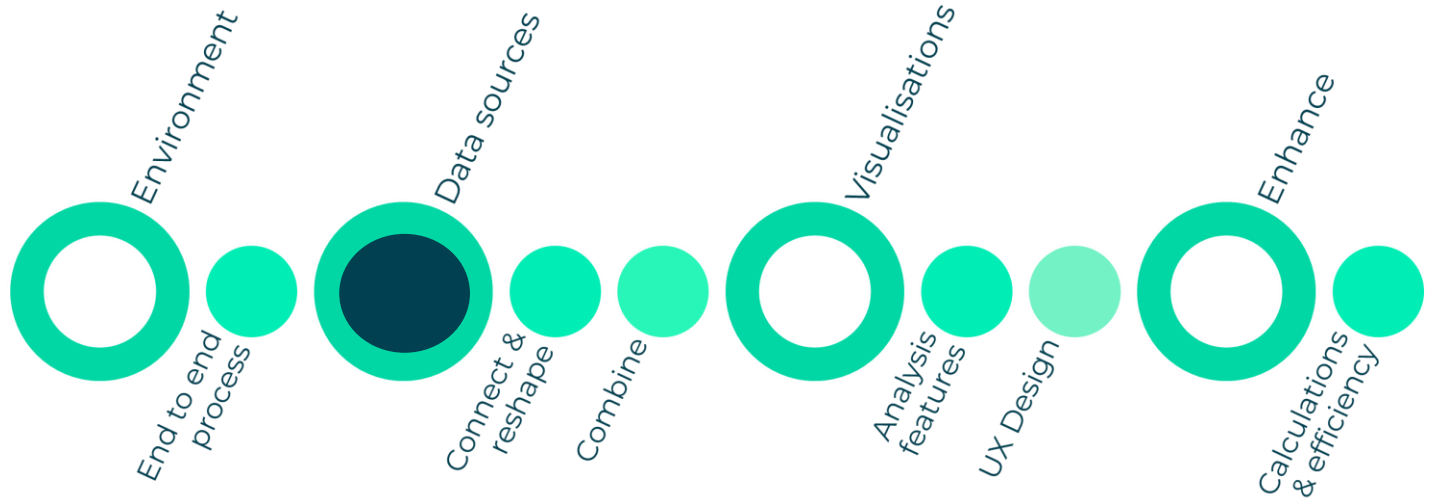
delimiter



Interpretation of data sources

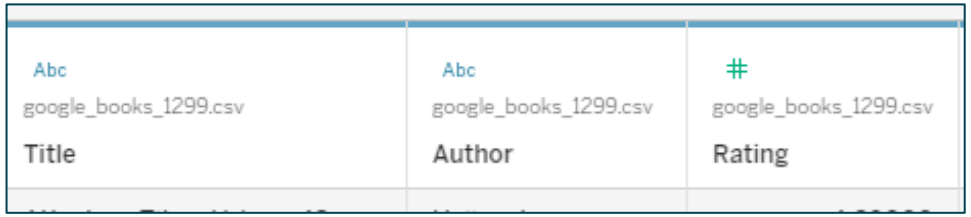


Key:
Data is interpreted as column headers (field names).
Data is interpreted as values in your data source.
Data derived from an Excel merged cell is interpreted as value in your data source.
Data is ignored and not included as part of your data source.
Data has been excluded from your data source.
Note: To search for all excluded data, use CRTL +F on Windows or Command F on the Mac, and then type '***DATA REMOVED***'.

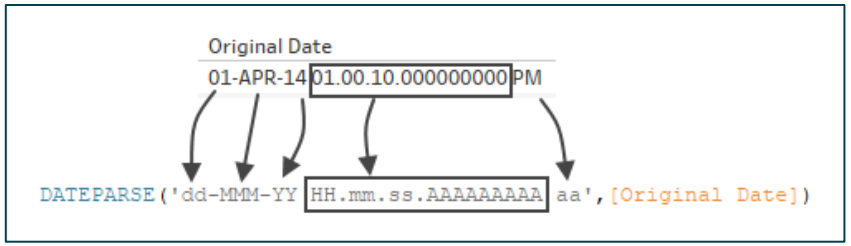


Data types and roles

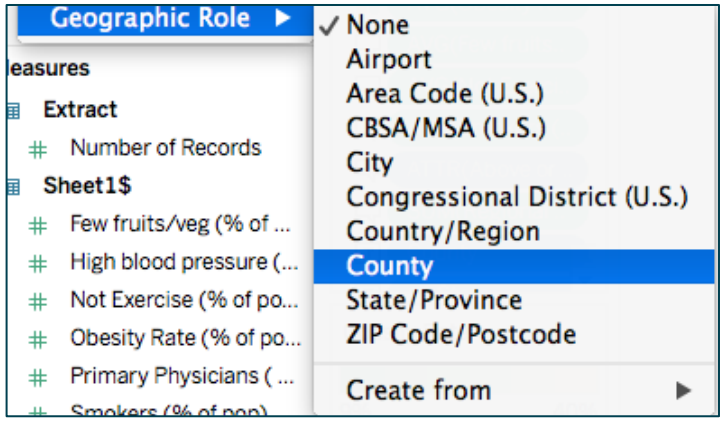
Data type icons

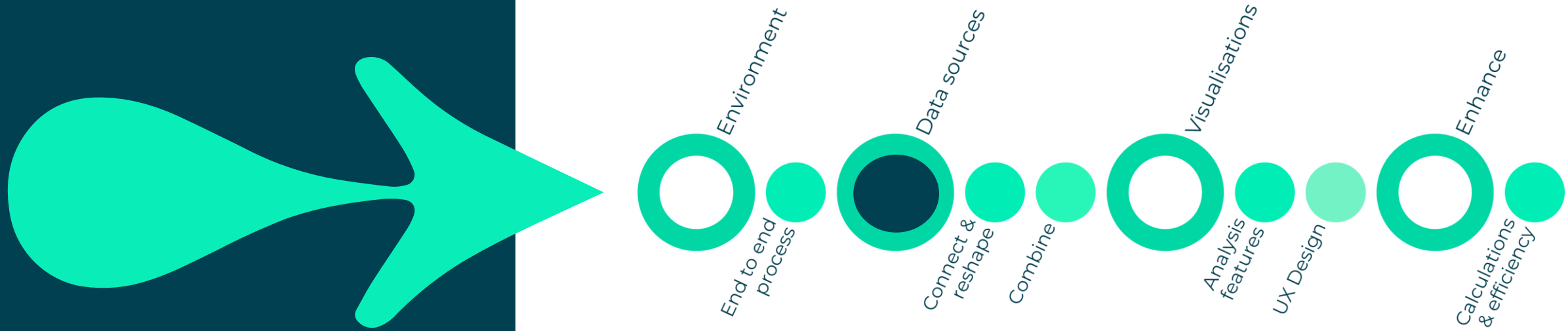


Date parsing

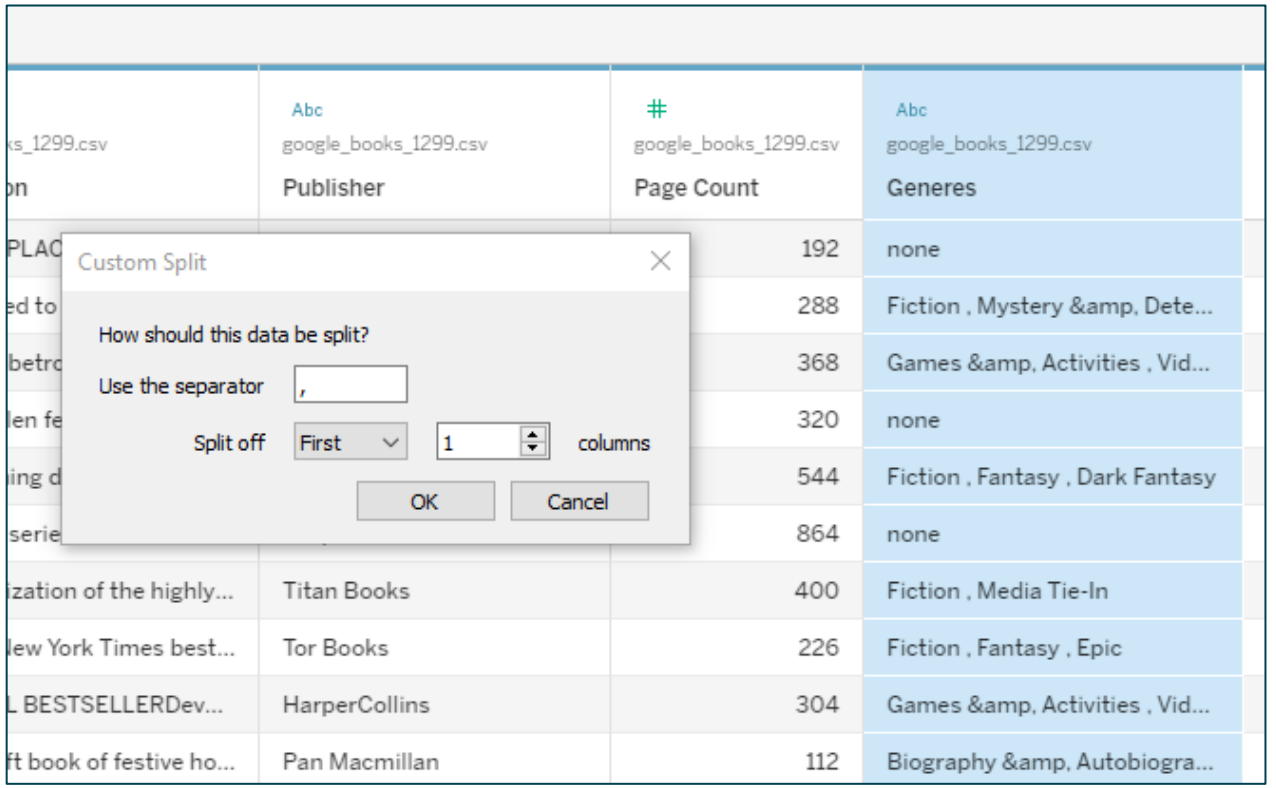


Roles

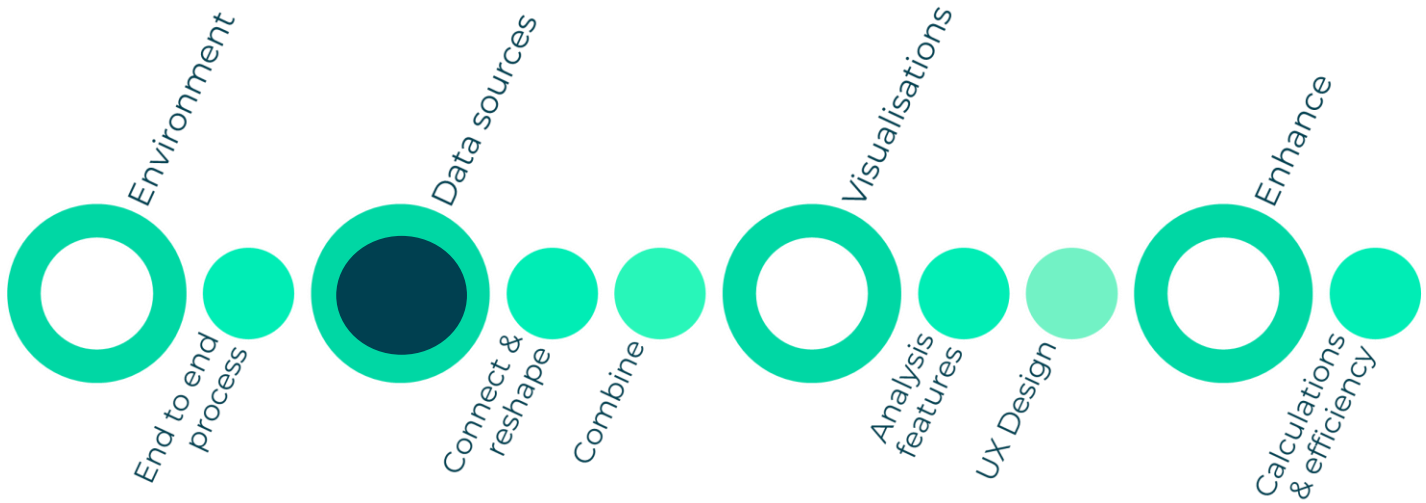




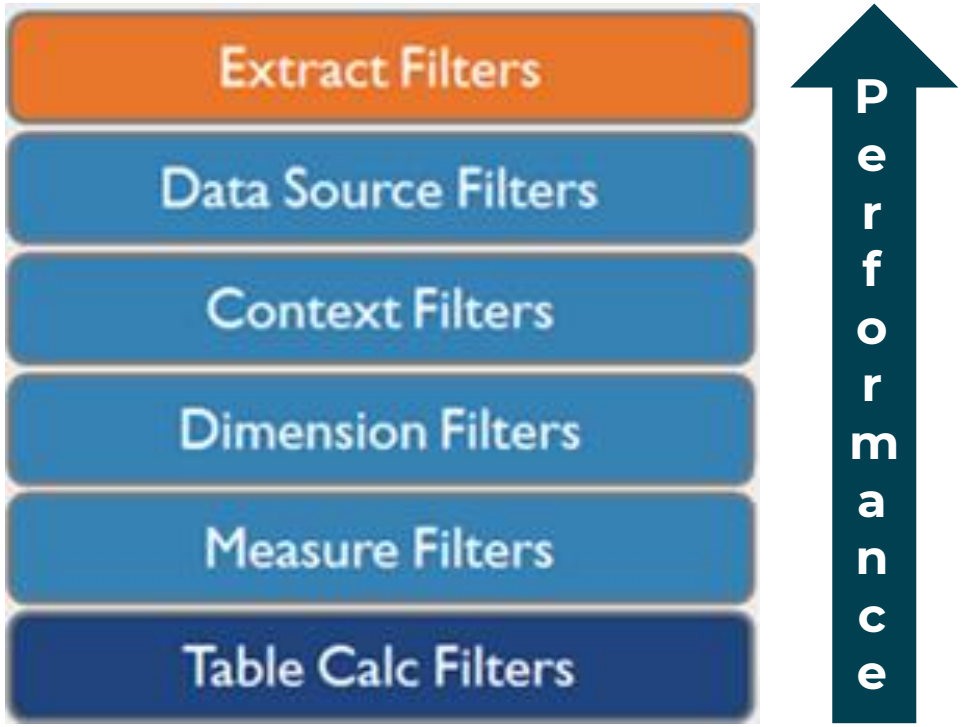
Splitting columns



ks_1299.csv on	Abc google_books_1299.csv Publisher	# google_books_1299.csv Page Count	Abc google_books_1299.csv Generes
PLAC		192	none
ed to		288	Fiction , Mystery &amp, Dete...
betro		368	Games &amp, Activities , Vid...
len fe		320	none
ing d		544	Fiction , Fantasy , Dark Fantasy
serie		864	none
ization of the highly...	Titan Books	400	Fiction , Media Tie-In
lew York Times best...	Tor Books	226	Fiction , Fantasy , Epic
L BESTSELLERDev...	HarperCollins	304	Games &amp, Activities , Vid...
ft book of festive ho...	Pan Macmillan	112	Biography &amp, Autobiogra...



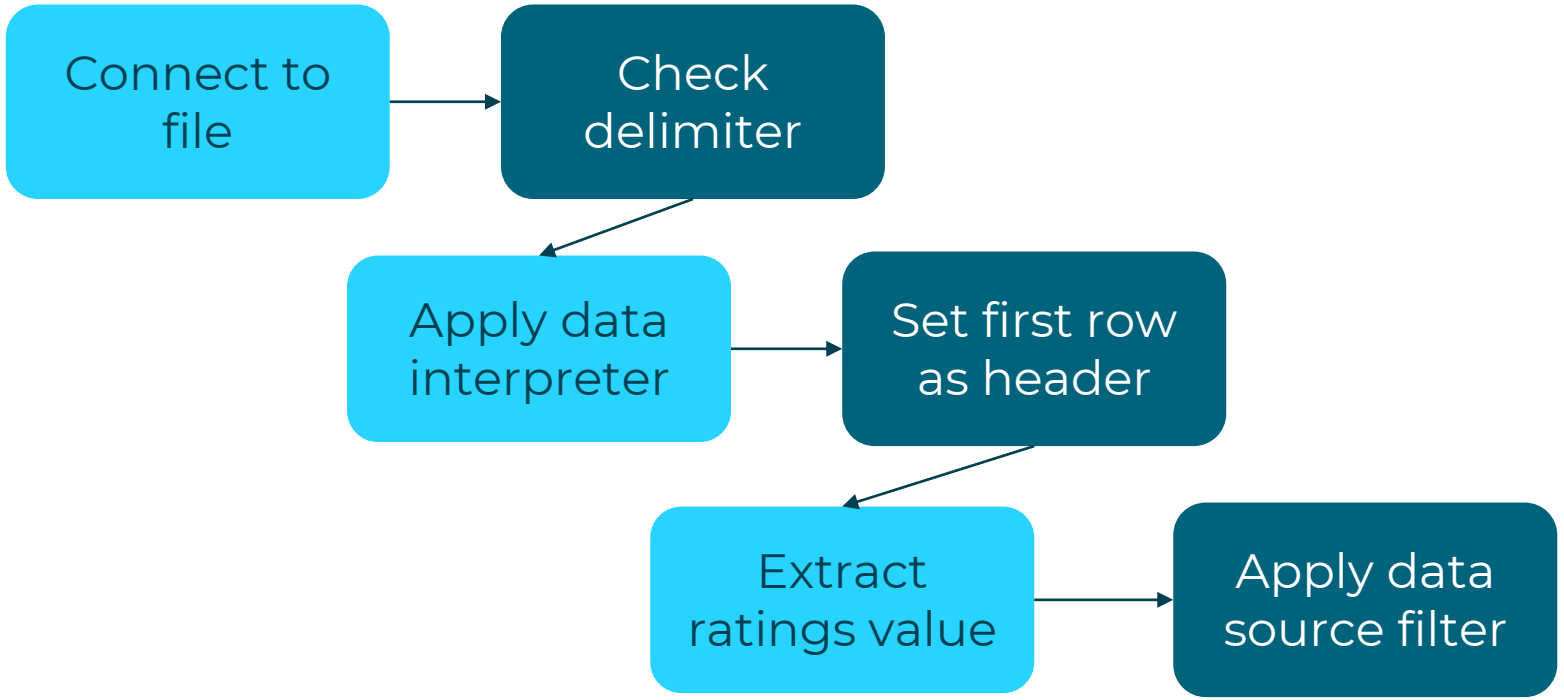
Filtering for performance

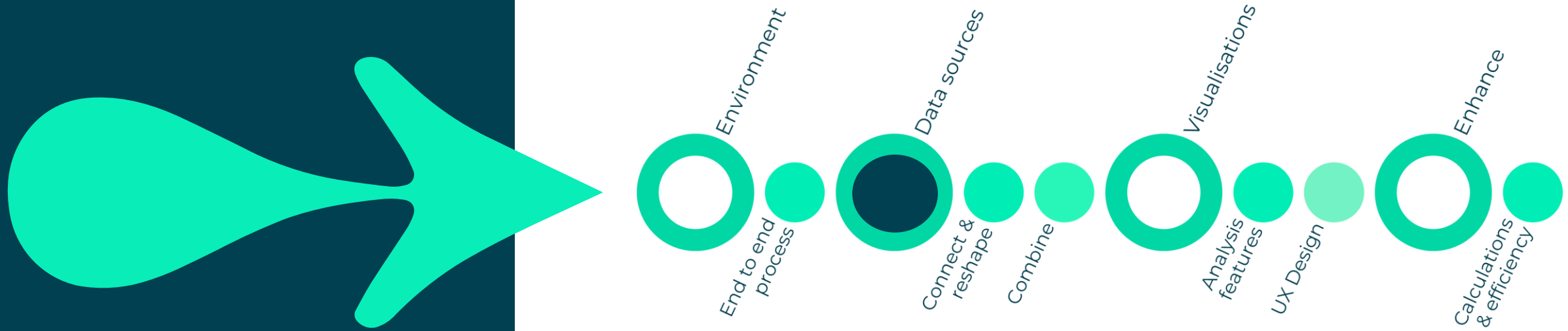


Activity 2.1: Connect to problematic text file

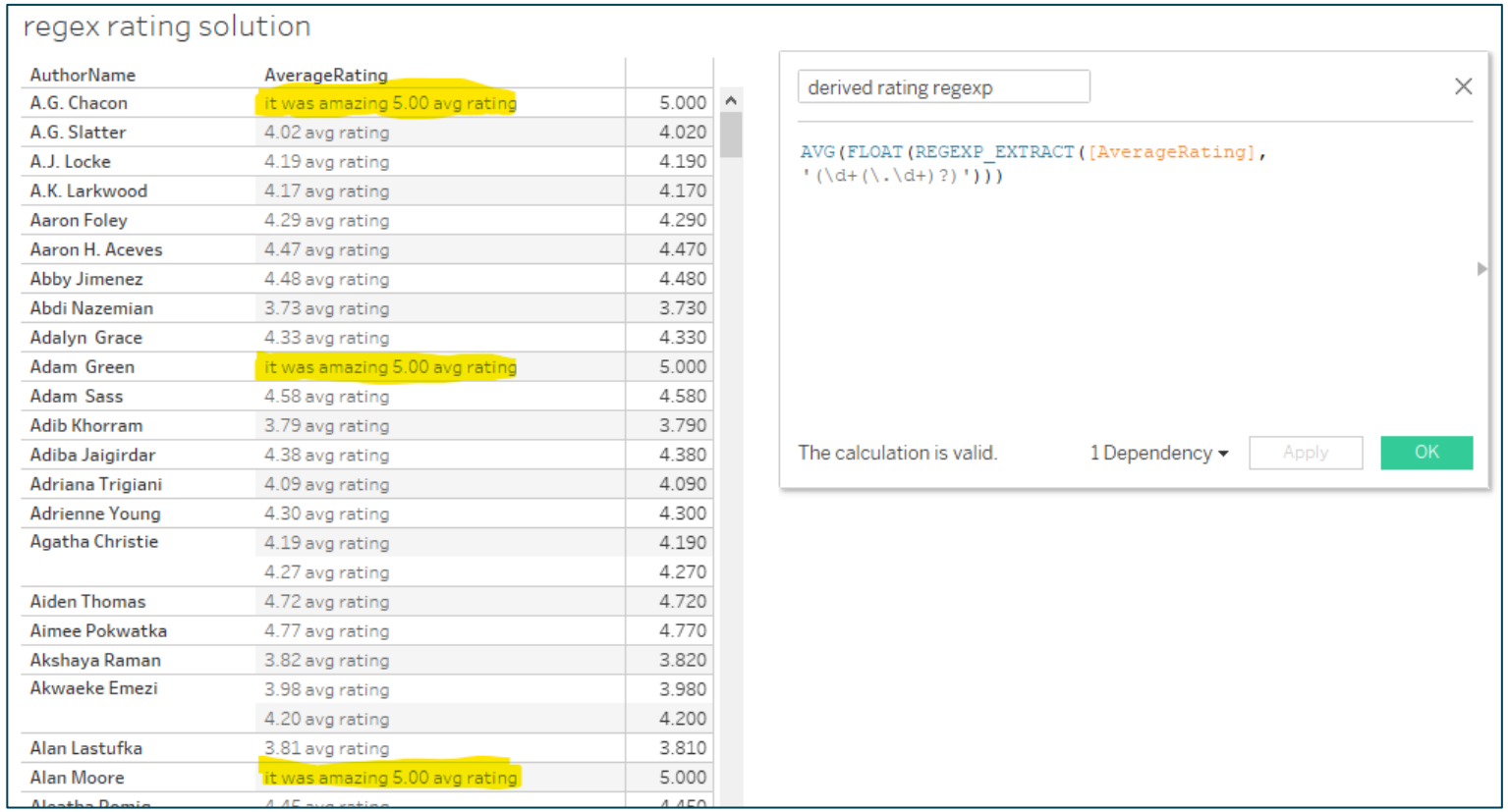
- Connect to a text file
- Data reshaping needed?
- Review data types
- Keep only books with > 100 votes

Review: working with a problematic text file

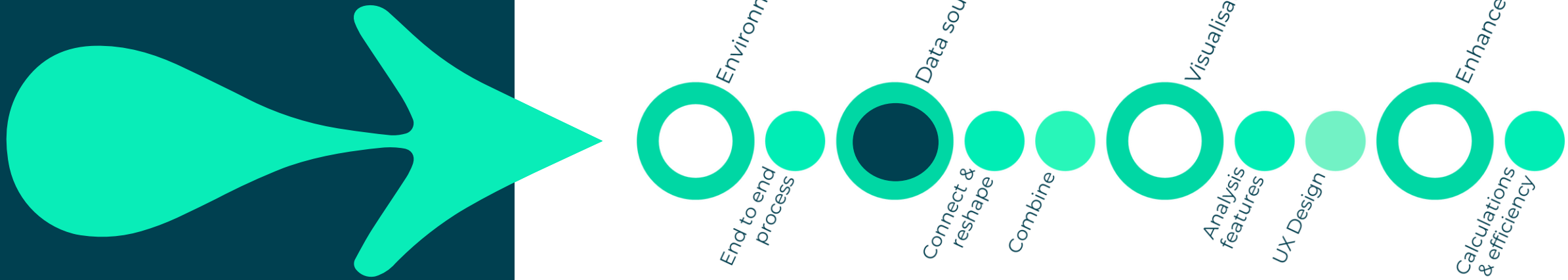




Extension: working with a problematic text file



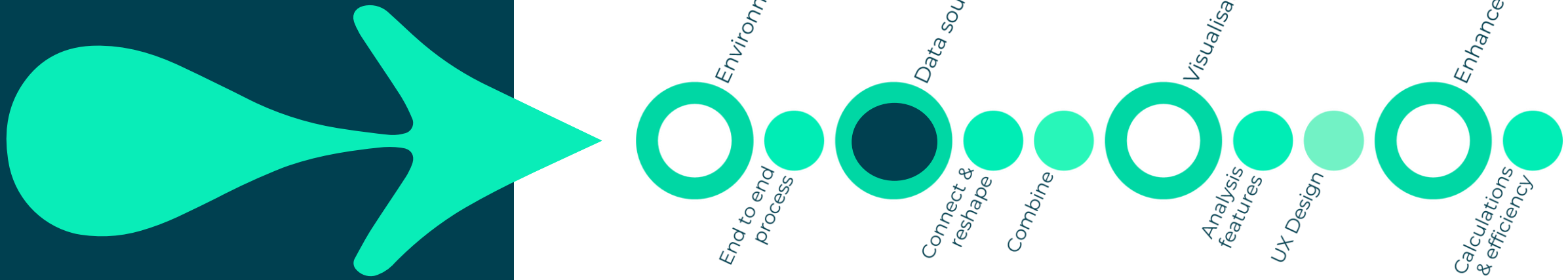
AuthorName	AverageRating	
A.G. Chacon	it was amazing 5.00 avg rating	5.000
A.G. Slatter	4.02 avg rating	4.020
A.J. Locke	4.19 avg rating	4.190
A.K. Larkwood	4.17 avg rating	4.170
Aaron Foley	4.29 avg rating	4.290
Aaron H. Aceves	4.47 avg rating	4.470
Abby Jimenez	4.48 avg rating	4.480
Abdi Nazemian	3.73 avg rating	3.730
Adalyn Grace	4.33 avg rating	4.330
Adam Green	it was amazing 5.00 avg rating	5.000
Adam Sass	4.58 avg rating	4.580
Adib Khorram	3.79 avg rating	3.790
Adiba Jaigirdar	4.38 avg rating	4.380
Adriana Trigiani	4.09 avg rating	4.090
Adrienne Young	4.30 avg rating	4.300
Agatha Christie	4.19 avg rating	4.190
	4.27 avg rating	4.270
Aiden Thomas	4.72 avg rating	4.720
Aimee Pokwatka	4.77 avg rating	4.770
Akshaya Raman	3.82 avg rating	3.820
Akwaeke Emezi	3.98 avg rating	3.980
	4.20 avg rating	4.200
Alan Lastufka	3.81 avg rating	3.810
Alan Moore	it was amazing 5.00 avg rating	5.000



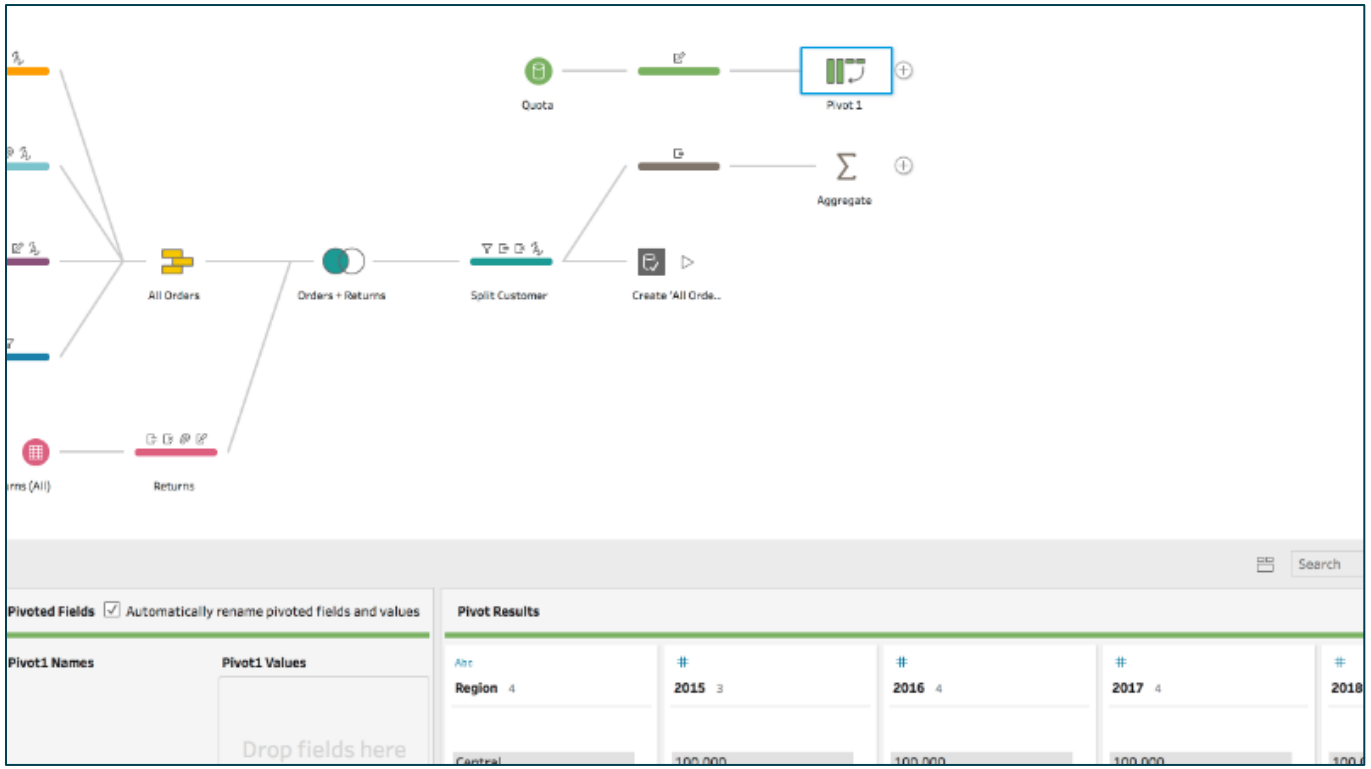
Pivot columns to rows

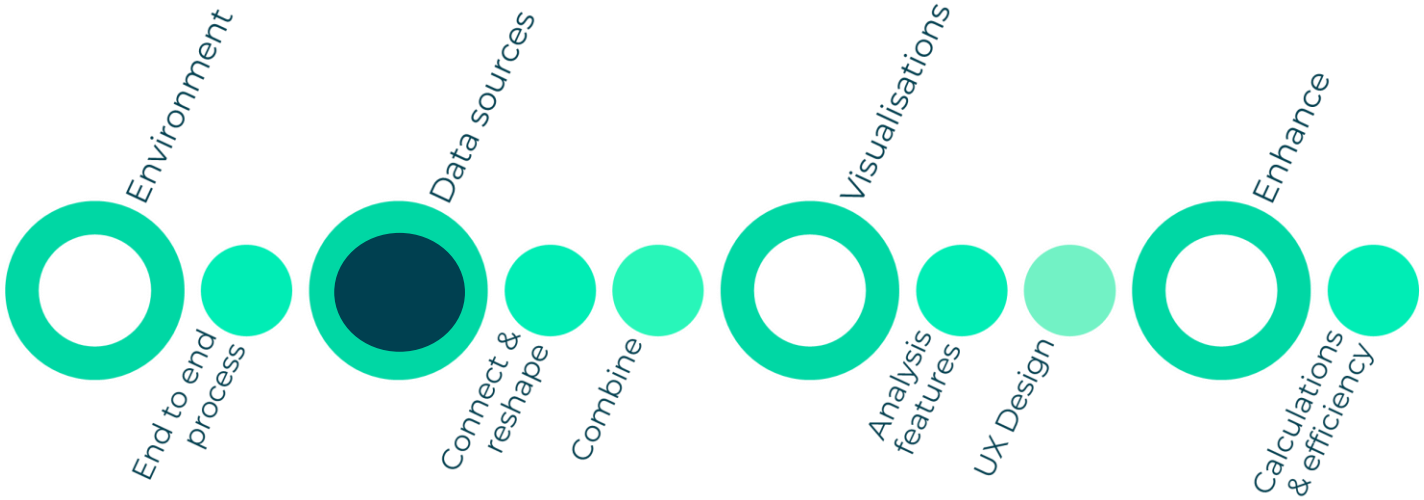
Abc Data Quarter	# Data Samsung	# Data Nokia	# Data Apple
Q1 '12	89.2800	83.1600	33.1200
Q2 '12	90.4300	83.4200	28.9400
Q3 '12	97.9600	82.3000	24.6200
Q4 '12	106.9600	85.0500	43.4600
Q1 '13	100.6600	63.2200	38.3300
Q2 '13	107.5300	60.9500	31.9000
Q3 '13	117.0500	63.0500	30.3300
Q4' 13	119.2100	63.5800	50.2200

Abc Data Quarter	Abc Pivot Pivot Field Names	# Pivot Pivot Field Values
Q4 '12	Apple	43.460
Q1 '13	Apple	38.330
Q2 '13	Apple	31.900
Q3 '13	Apple	30.330
Q4' 13	Apple	50.220
Q1 '10	Nokia	110.110
Q2 '10	Nokia	111.470
Q3 '10	Nokia	117.460
Q4 '10	Nokia	122.280

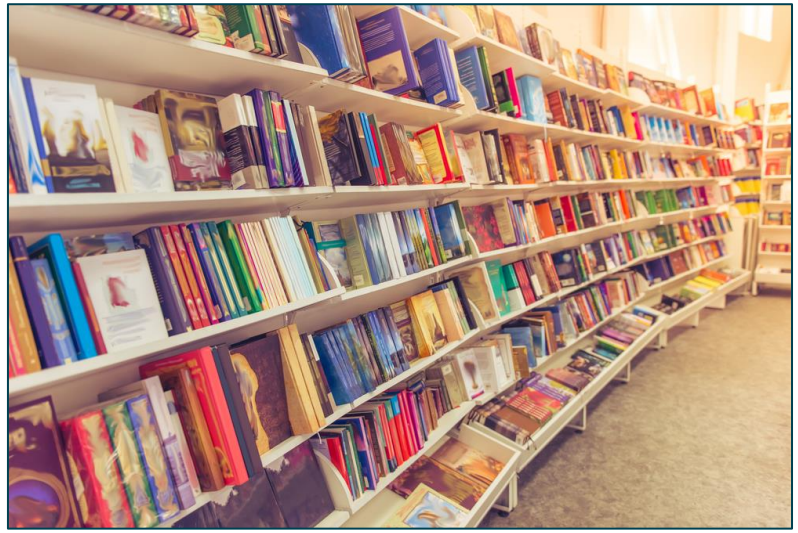


Prep builder & data sources





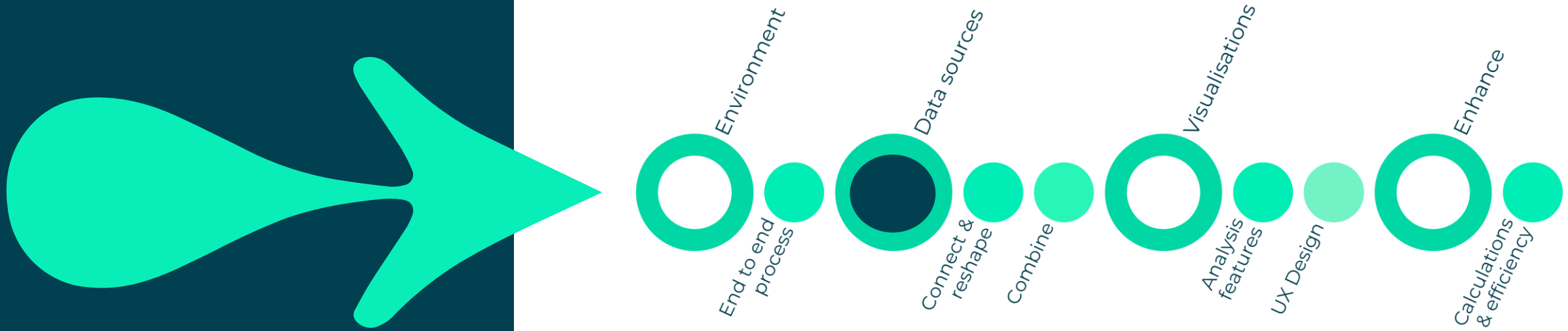
Case study: discussion



Independent Book Shop

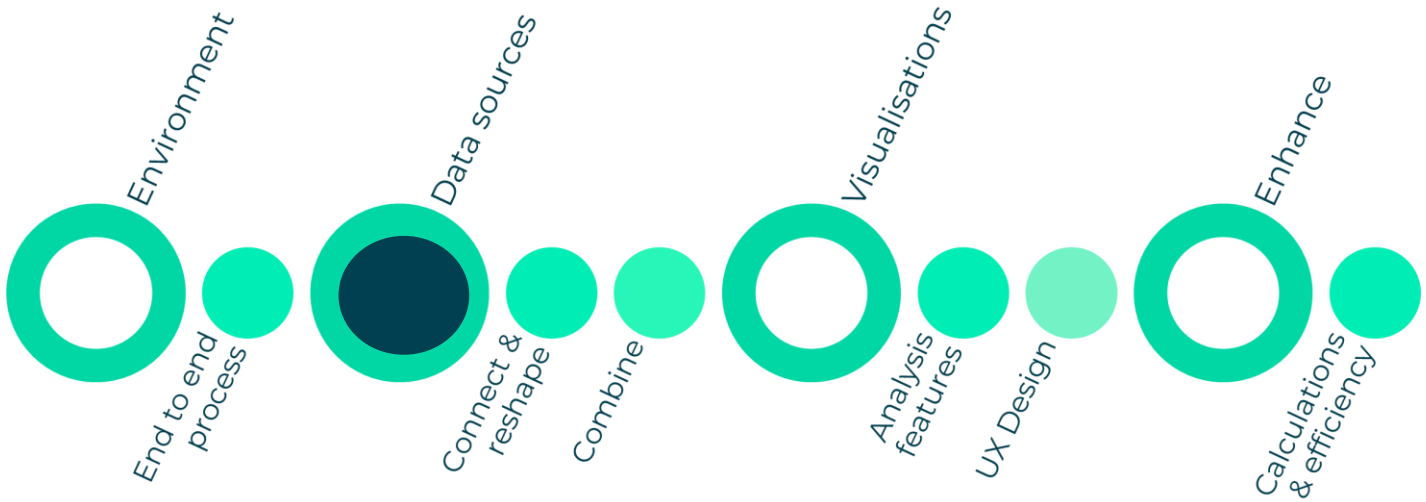
Aim: attract more customers...

What are the best sellers?
Which new titles should we stock?
Which authors are popular now?



Case study: available data

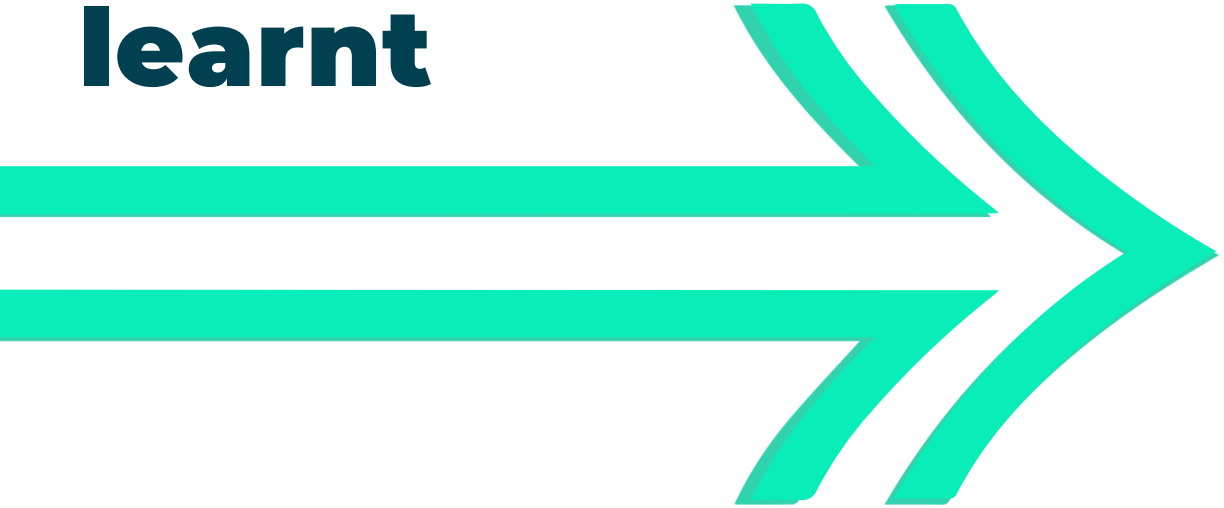
Name	File ownership	Type	Size
Amazon_book_reviews		File folder	
Books_Ratings		File folder	
Bookshop_Sales		File folder	
google_books		File folder	
amazon_bestsellers_categories		Microsoft Excel Comma Separated Values...	50 KB
Amazon_stock_prices		Microsoft Edge PDF Document	208 KB
Books_amazon_bs_20102020		Microsoft Excel Comma Separated Values...	98 KB
Bookshop		Microsoft Excel Worksheet	1,496 KB
Bookshop_Series		Microsoft Edge PDF Document	76 KB
competitor_sales		Microsoft Excel Comma Separated Values...	153 KB
goodreads_books.json		JSON File	8,986,558 KB
goodreads_cantwait_2022		Microsoft Excel Comma Separated Values...	92 KB
goodreads_reviews_1.5k		Microsoft Excel Comma Separated Values...	1,648 KB
goodreads_reviews_11k		Microsoft Excel Comma Separated Values...	1,524 KB
goodreads-twitter		Microsoft Excel Worksheet	53 KB
leeds_library_checkouts		Microsoft Excel Comma Separated Values...	3 KB
man-booker-prize-winners		Microsoft Edge PDF Document	4,859 KB



Activity 2.2:
Explore data sources

- Assess source contents, size, type
- Preview with excel, text reader or tableau
- Consider if data is useful to case study
- Any needed data preparation/interpretation?

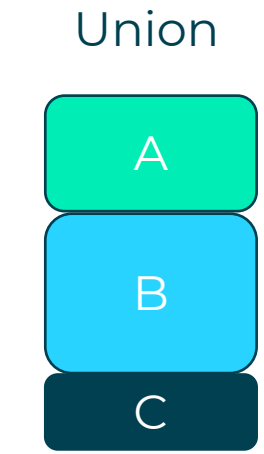
Summary of what we learnt

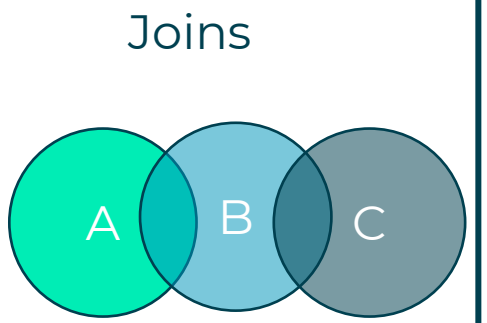


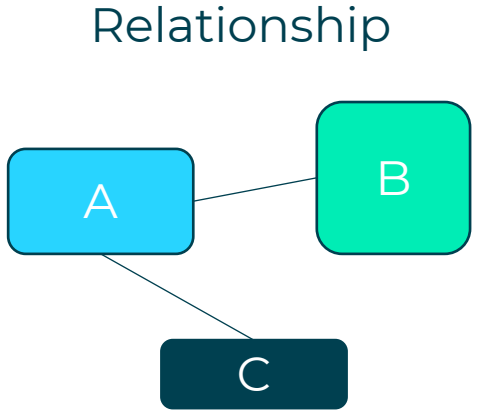
1. How to connect to data sources
2. Reshaping data options
3. Desktop v Prep features
4. What we do need to know about data sources before using them?

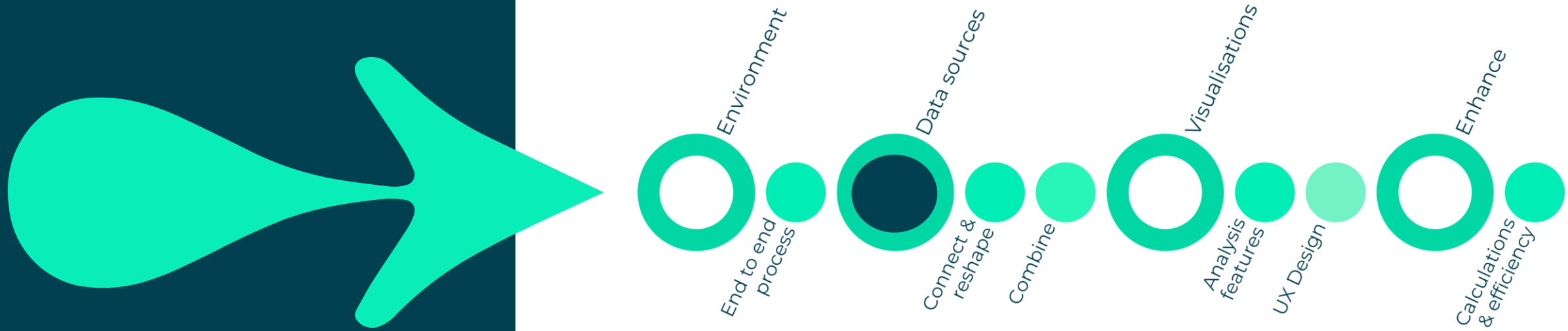
Module 3
Combining Data Sources

DS methods of combining data

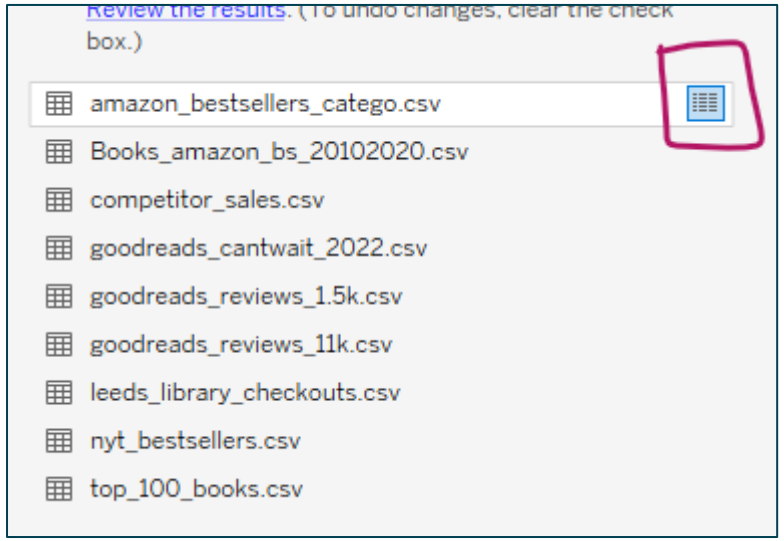


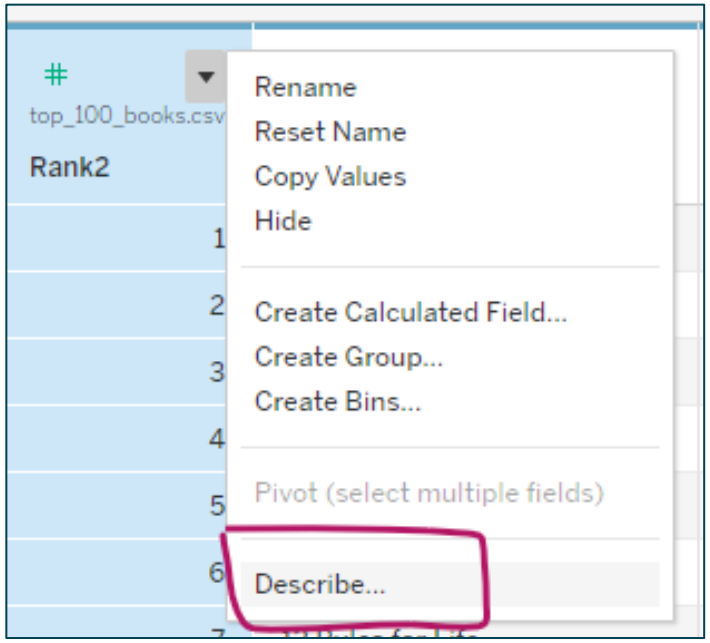


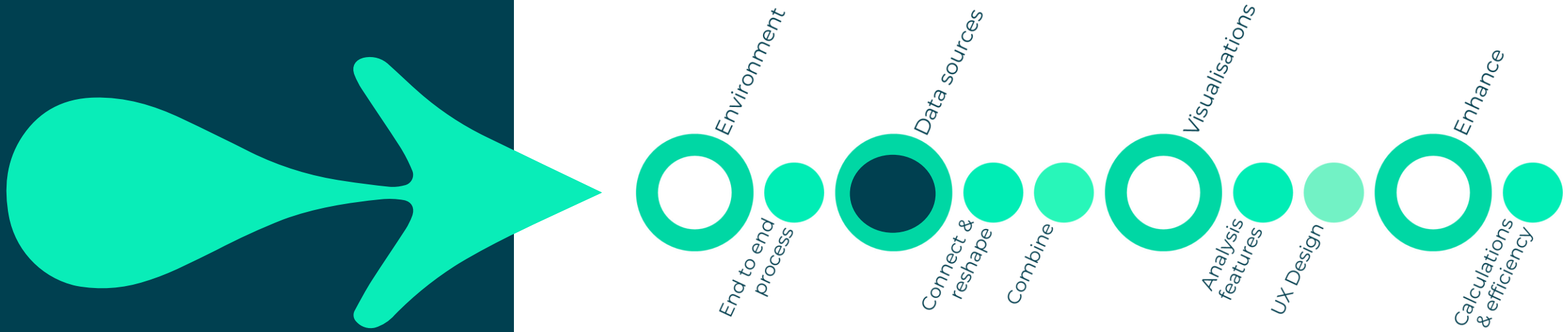




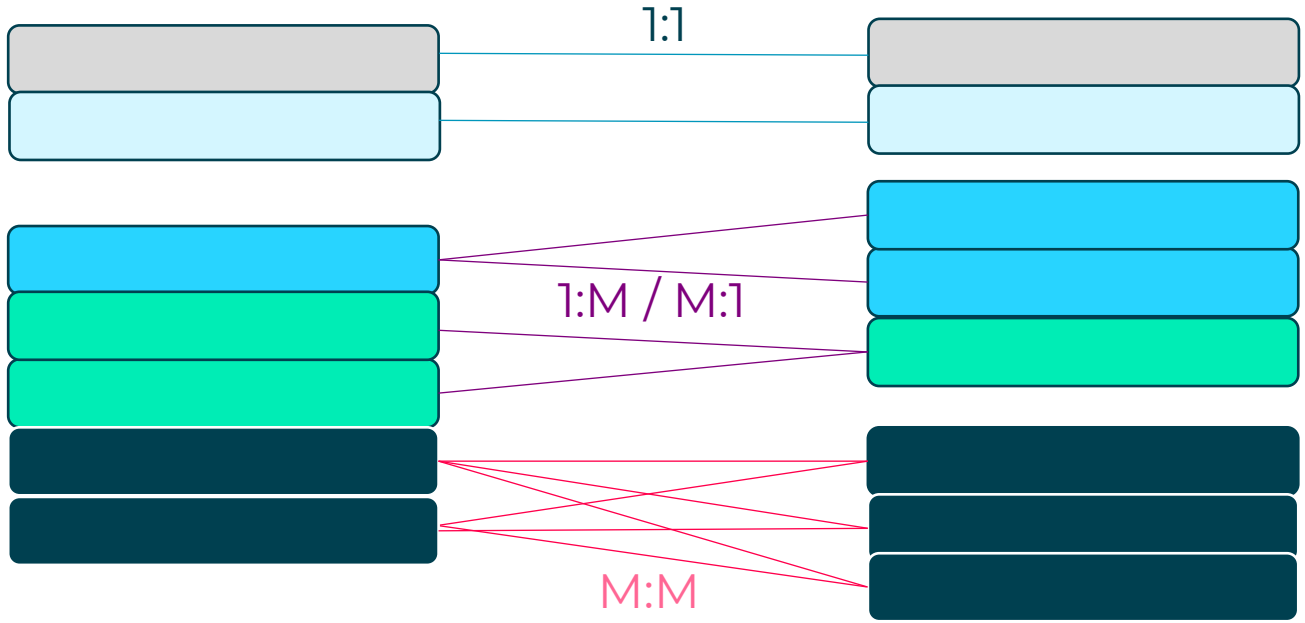
Linking data sources

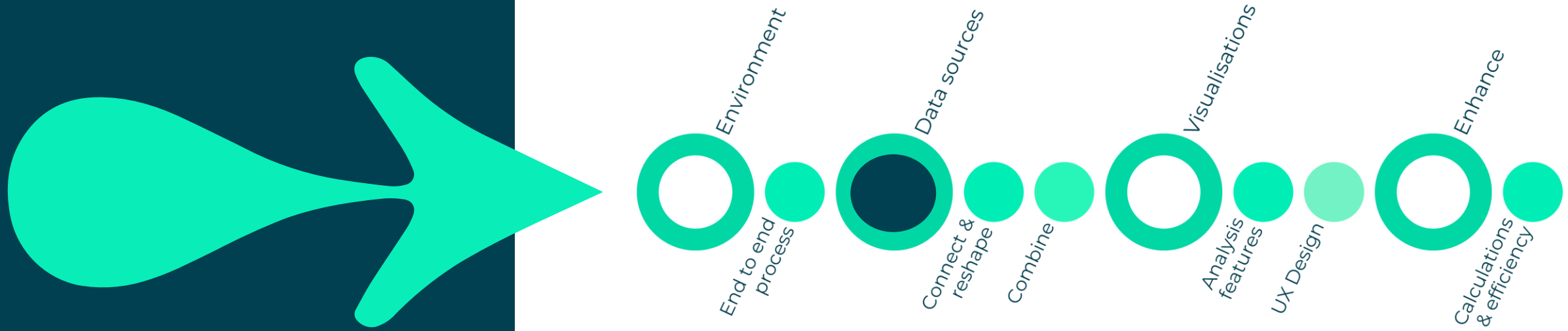




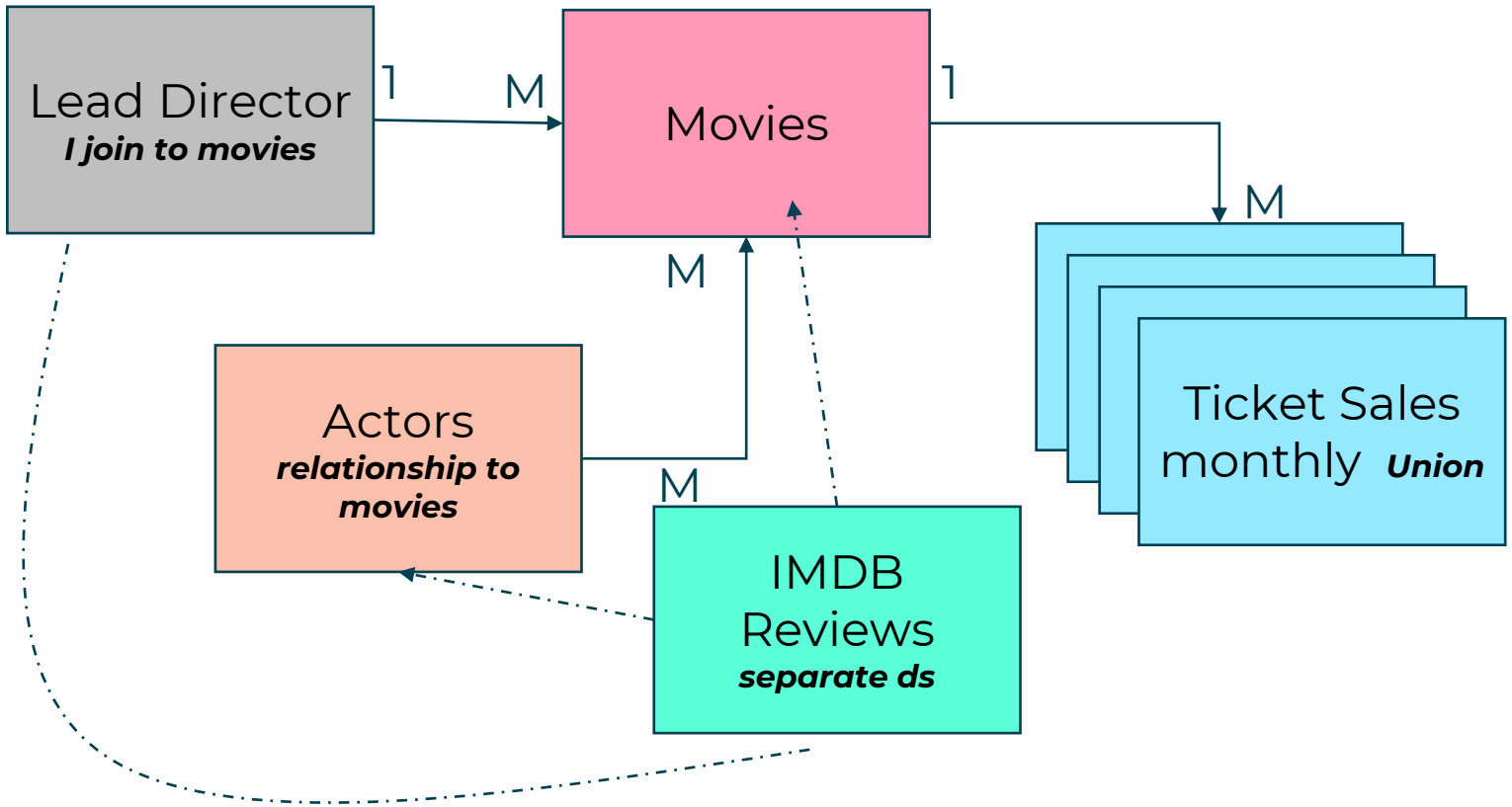


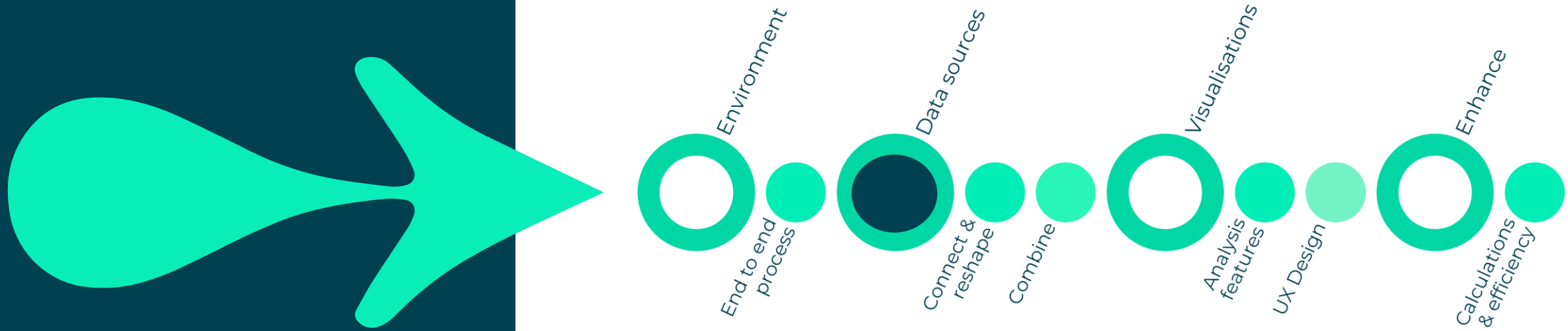
Cardinality





Simplified data schema



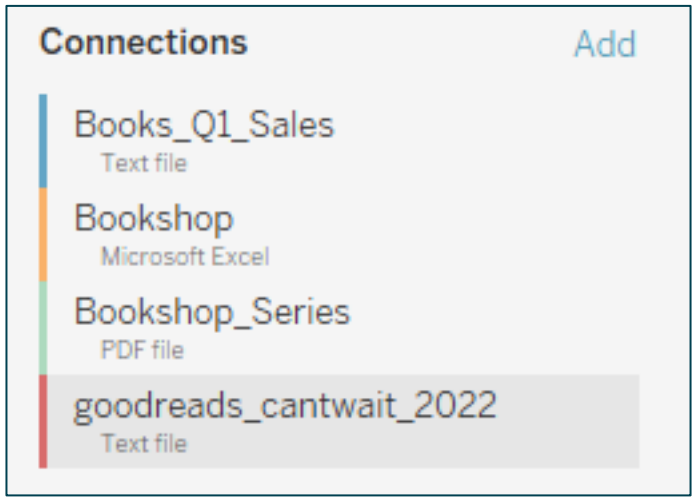


Activity 3.1: Cardinality and design

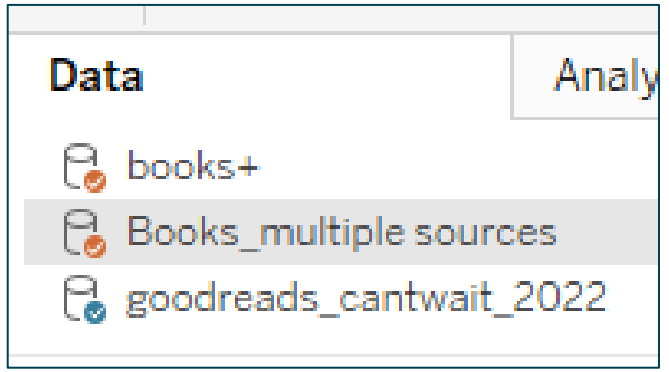
- Open three data sources in tableau
- Identify potential linking fields
- Assess the cardinality in each direction
- Draw and label a simplified schema

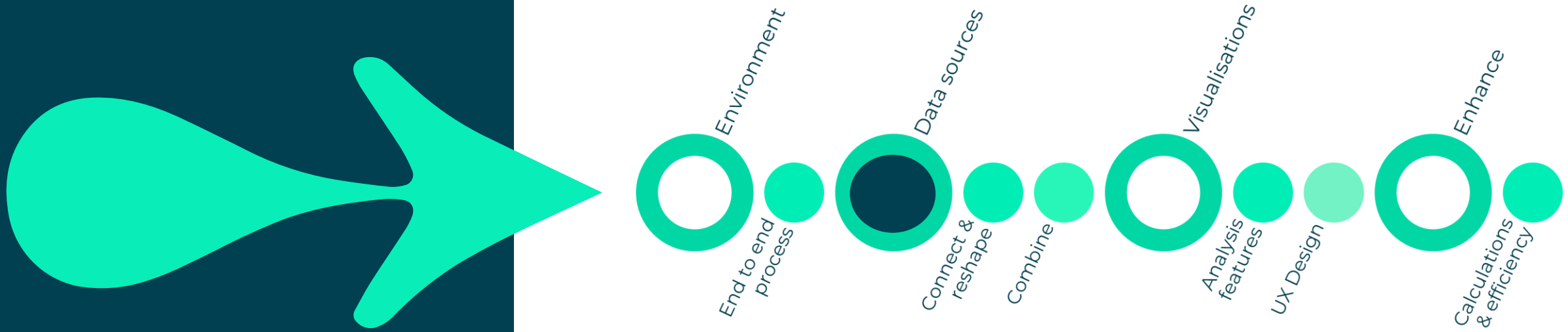
Primary and secondary colours

Combining data in the data source screen

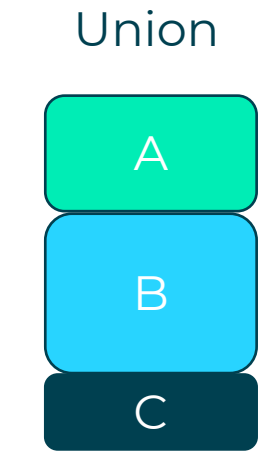


Using blend relationships in the worksheet canvas

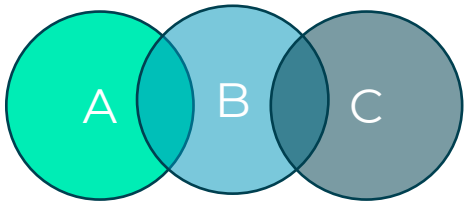




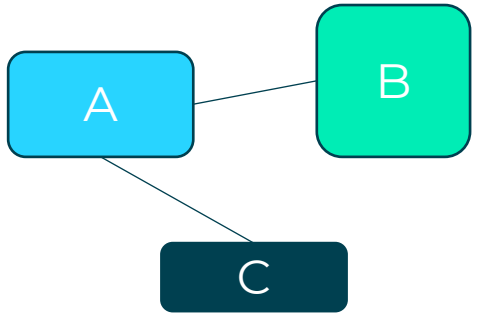
Demonstration - combining data sources



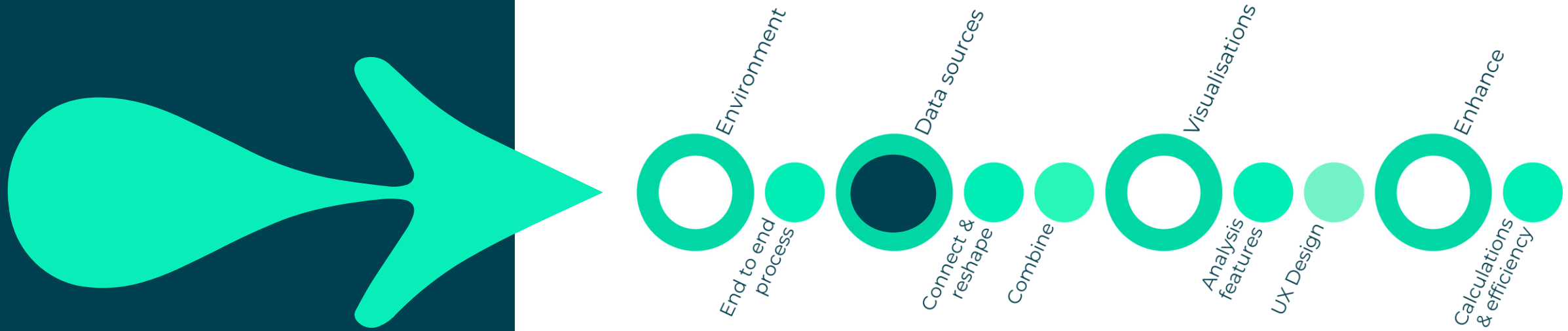
Union



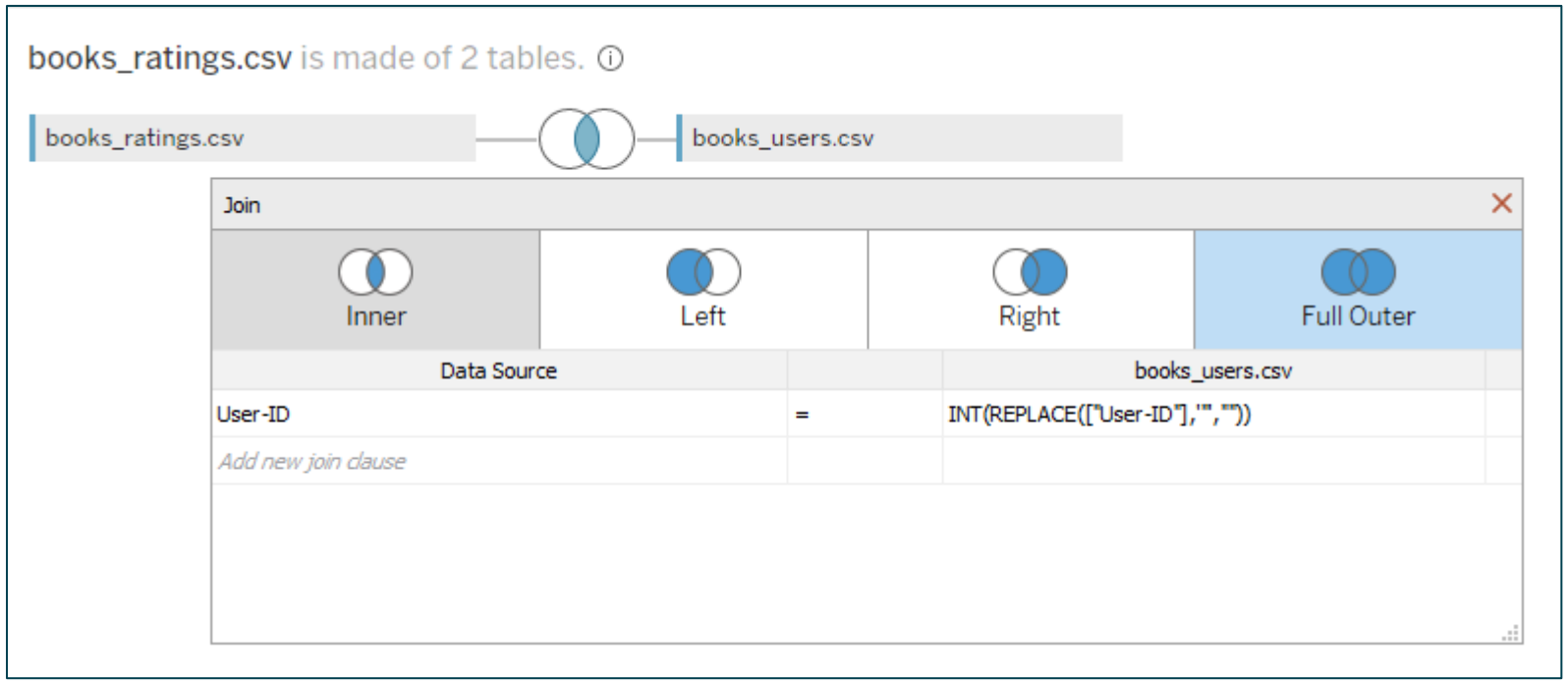
Joins

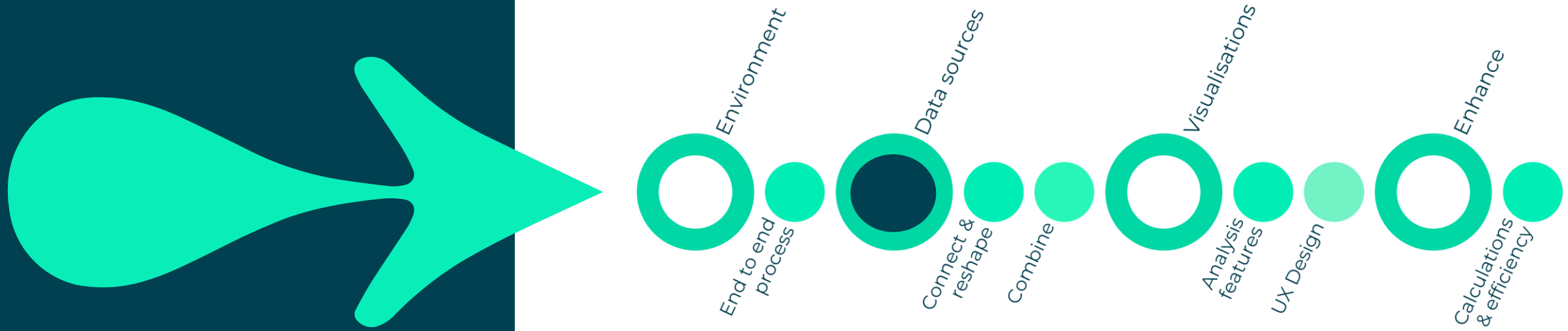


Relationship



Combine mis-matching fields with calculations

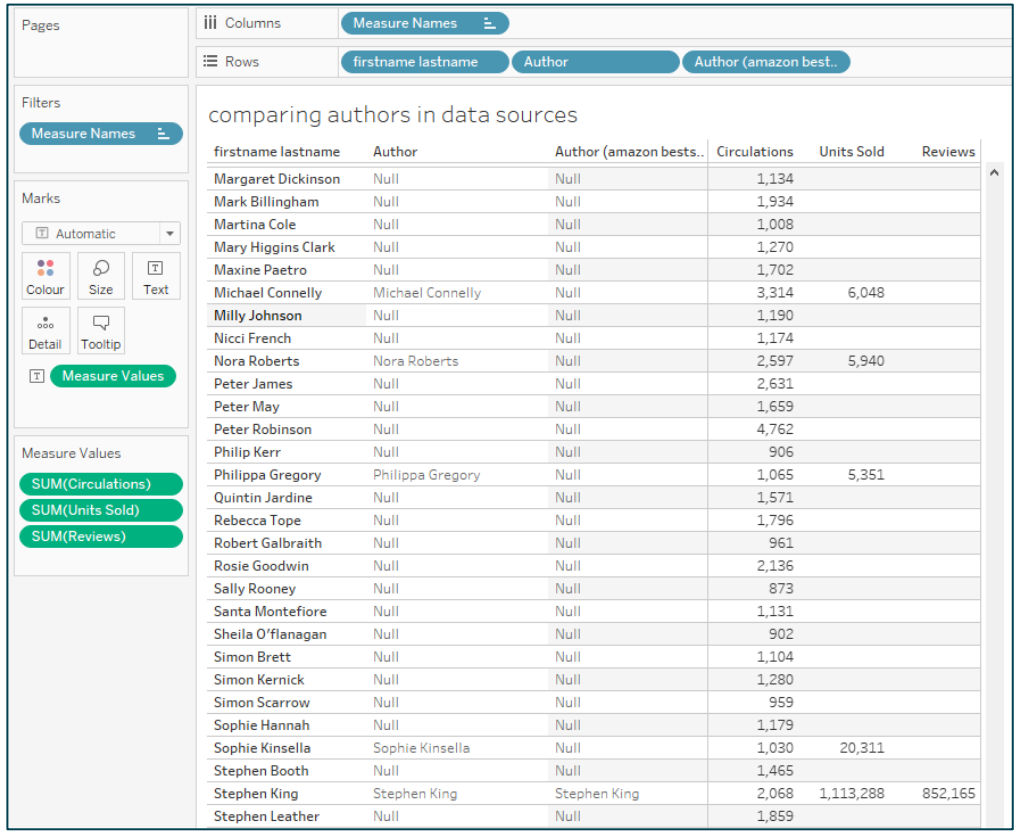




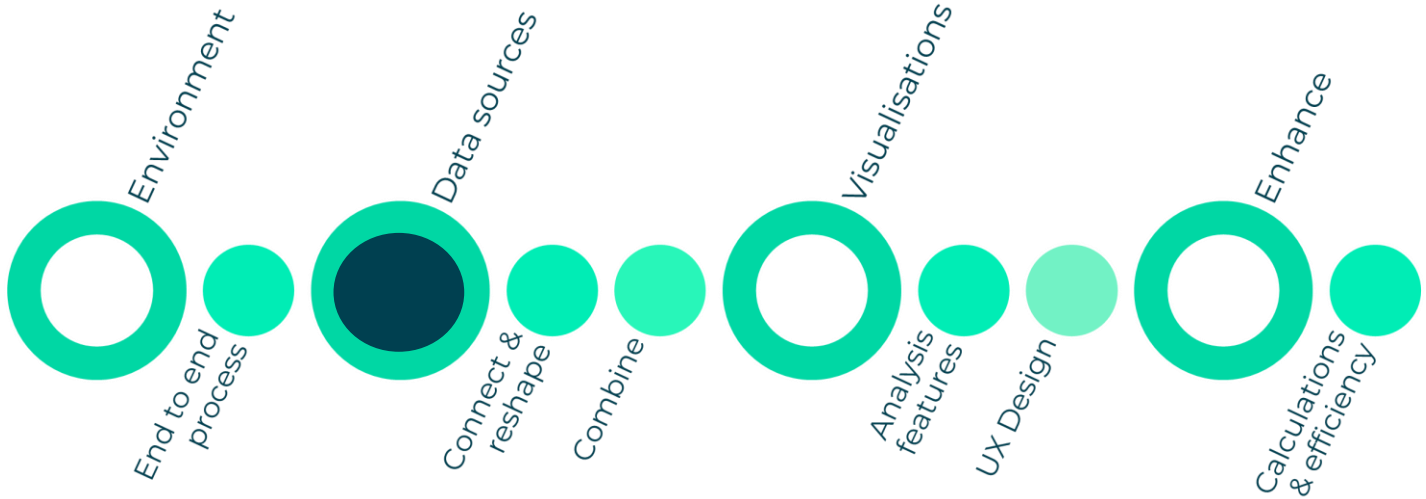
Activity 3.2: joining or relating?

- Review 3 new data sources
- identify matching criteria
- join and relate with join calculation

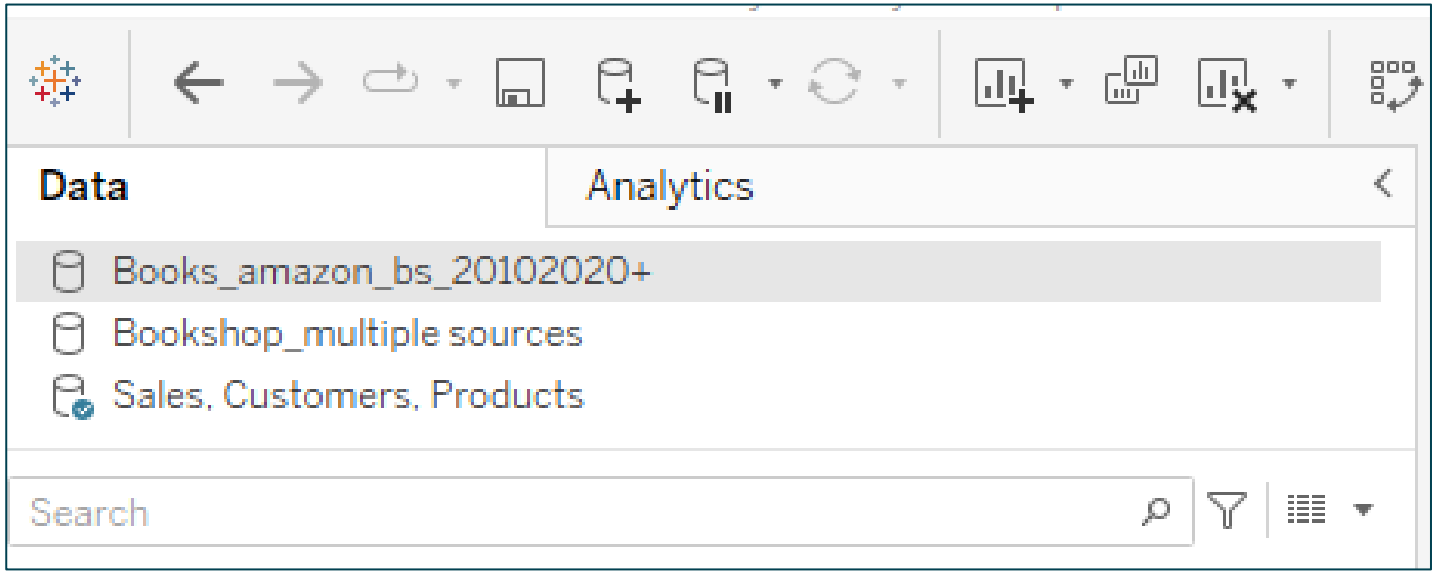
Review: activity 3.2

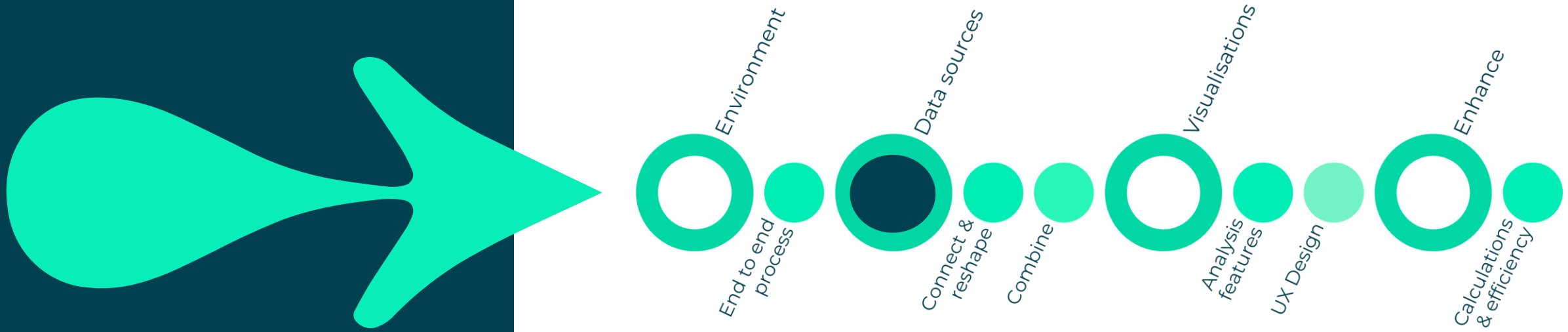


firstname lastname	Author	Author (amazon bests..	Circulations	Units Sold	Reviews
Margaret Dickinson	Null	Null	1,134		
Mark Billingham	Null	Null	1,934		
Martina Cole	Null	Null	1,008		
Mary Higgins Clark	Null	Null	1,270		
Maxine Paetro	Null	Null	1,702		
Michael Connelly	Michael Connelly	Null	3,314	6,048	
Milly Johnson	Null	Null	1,190		
Nicci French	Null	Null	1,174		
Nora Roberts	Nora Roberts	Null	2,597	5,940	
Peter James	Null	Null	2,631		
Peter May	Null	Null	1,659		
Peter Robinson	Null	Null	4,762		
Philip Kerr	Null	Null	906		
Philippa Gregory	Philippa Gregory	Null	1,065	5,351	
Quintin Jardine	Null	Null	1,571		
Rebecca Tope	Null	Null	1,796		
Robert Galbraith	Null	Null	961		
Rosie Goodwin	Null	Null	2,136		
Sally Rooney	Null	Null	873		
Santa Montefiore	Null	Null	1,131		
Sheila O'flanagan	Null	Null	902		
Simon Brett	Null	Null	1,104		
Simon Kernick	Null	Null	1,280		
Simon Scarrow	Null	Null	959		
Sophie Hannah	Null	Null	1,179		
Sophie Kinsella	Sophie Kinsella	Null	1,030	20,311	
Stephen Booth	Null	Null	1,465		
Stephen King	Stephen King	Stephen King	2,068	1,113,288	852,165
Stephen Leather	Null	Null	1,859		



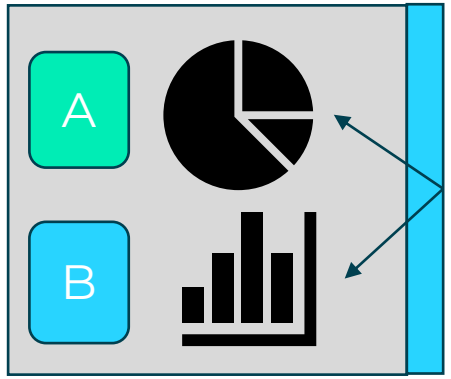
One workbook, many data sources



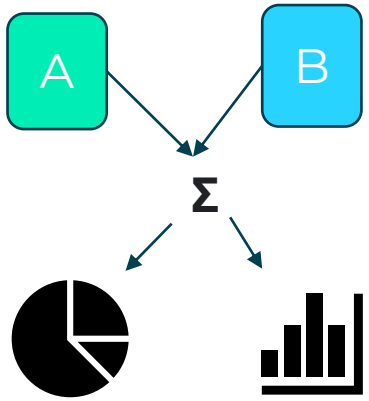


Viz methods of combining data

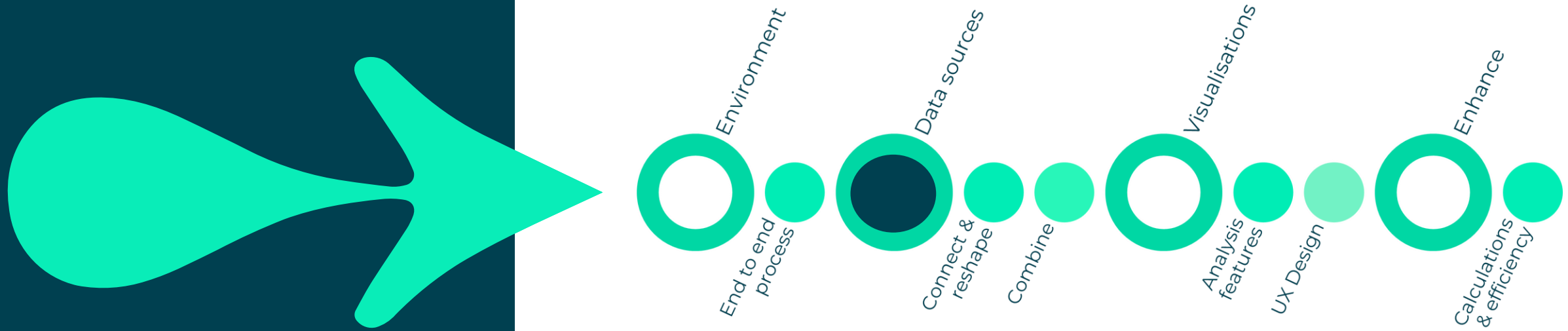
Cross DS filtering



Blends



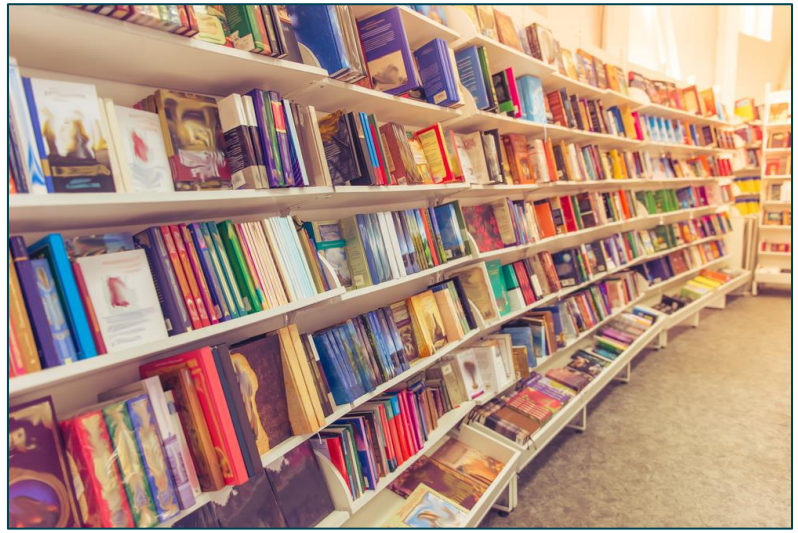
Presentation only



Activity 3.3:
Cross source filtering

- Open the pre packaged workbook
- Test out the filters on the dashboard
- Make notes on the filter behaviour

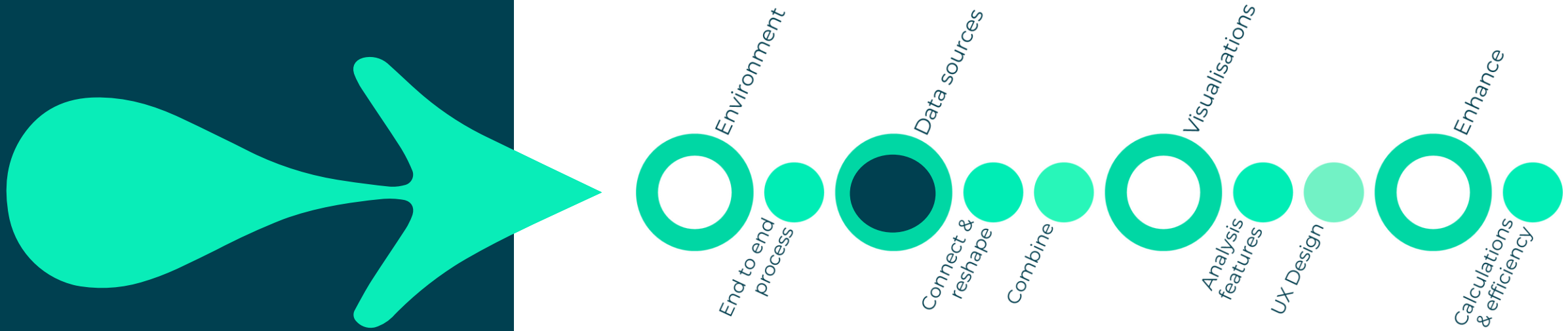
Case study: planning



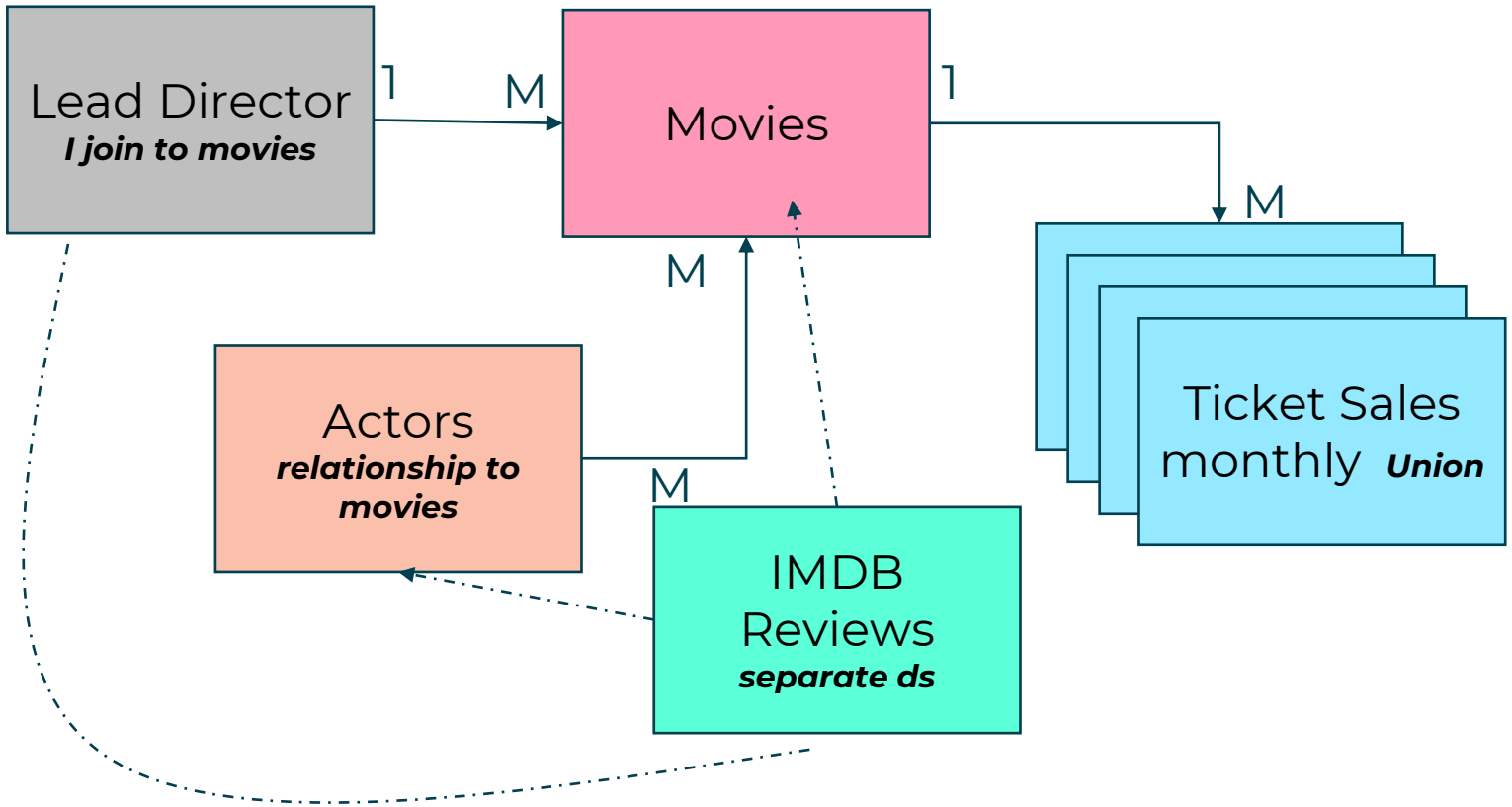
Independent Book Shop

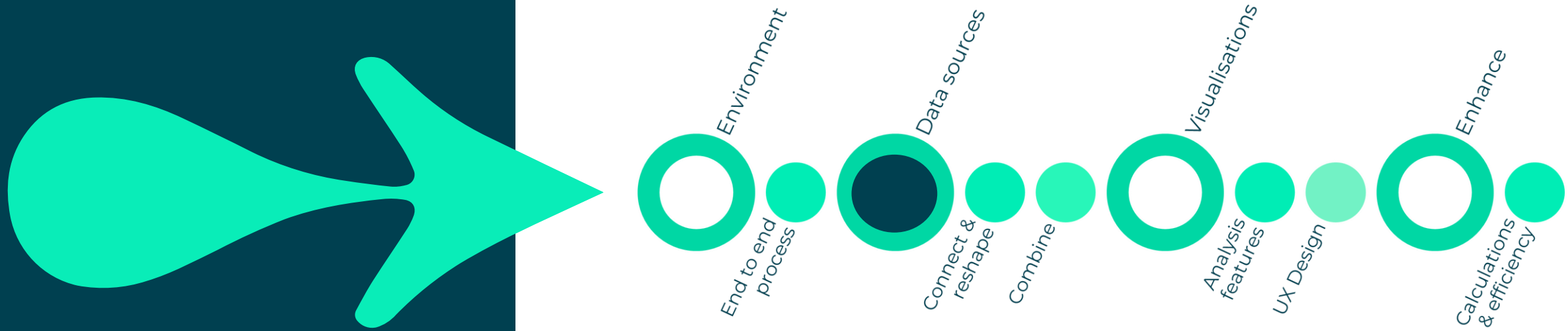
Aim: attract more customers...

What are the best sellers?
Which new titles should we stock?
Which authors are popular now?



Selective data schema





Activity 3.4:
Design and build your model

- Review what you have learnt
- Sketch out a data model for your case study
- Add the bookshop data sources and combine using your chosen approach
- add at least one other data source to your workbook

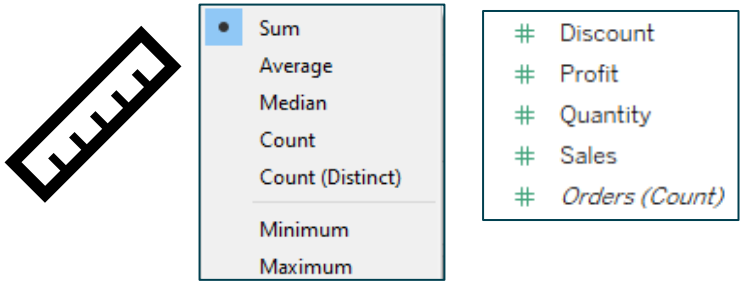
Summary of what we learnt

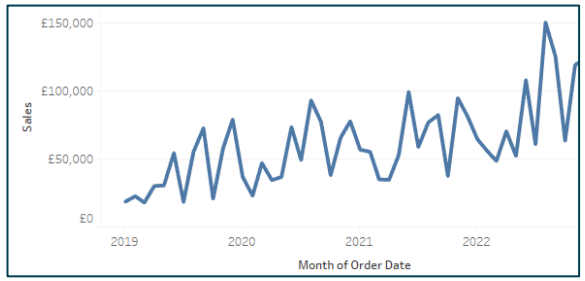
1. Methods to combine data sources
2. Limitations & requirements for combining data
3. Designing a data model for a case study

Module 4
Visualising and Interactivity

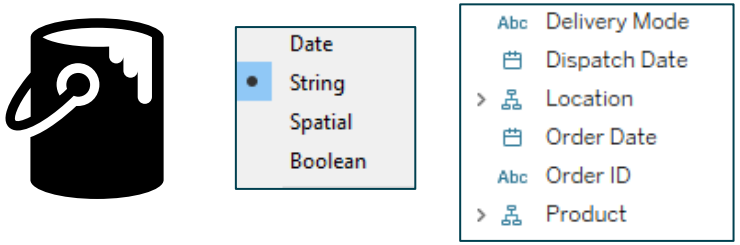
Viz design concepts

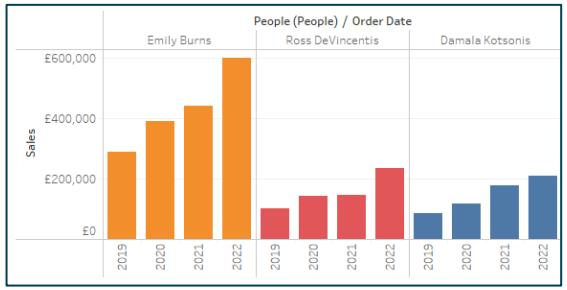
Continuous



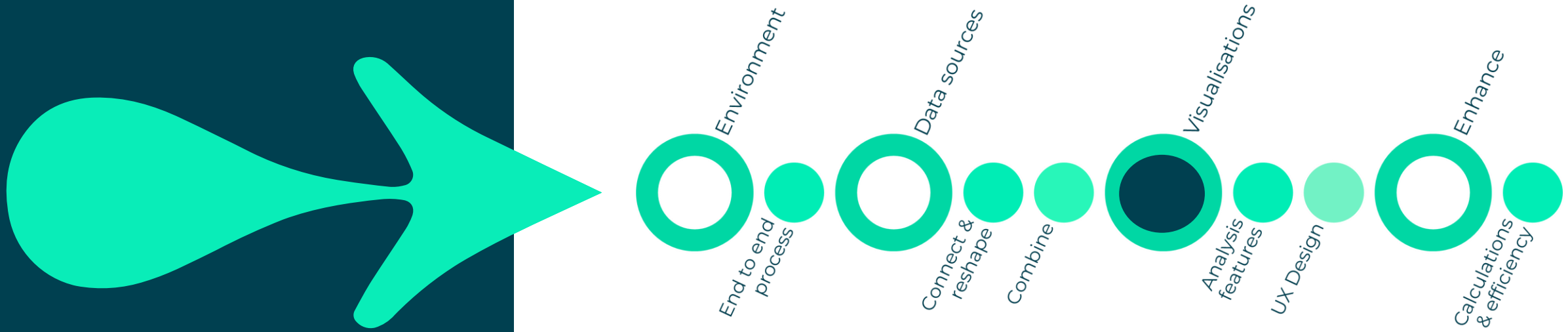


Discrete





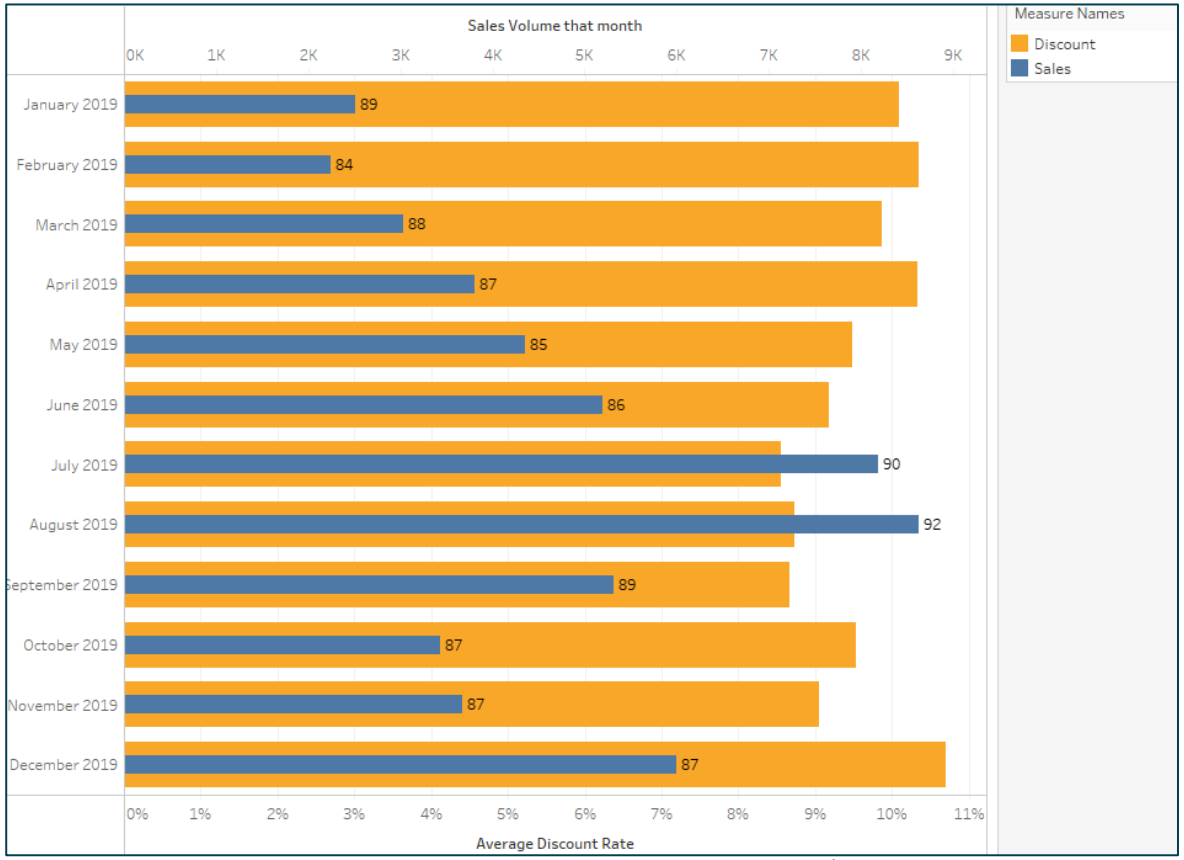
Bar in bar chart

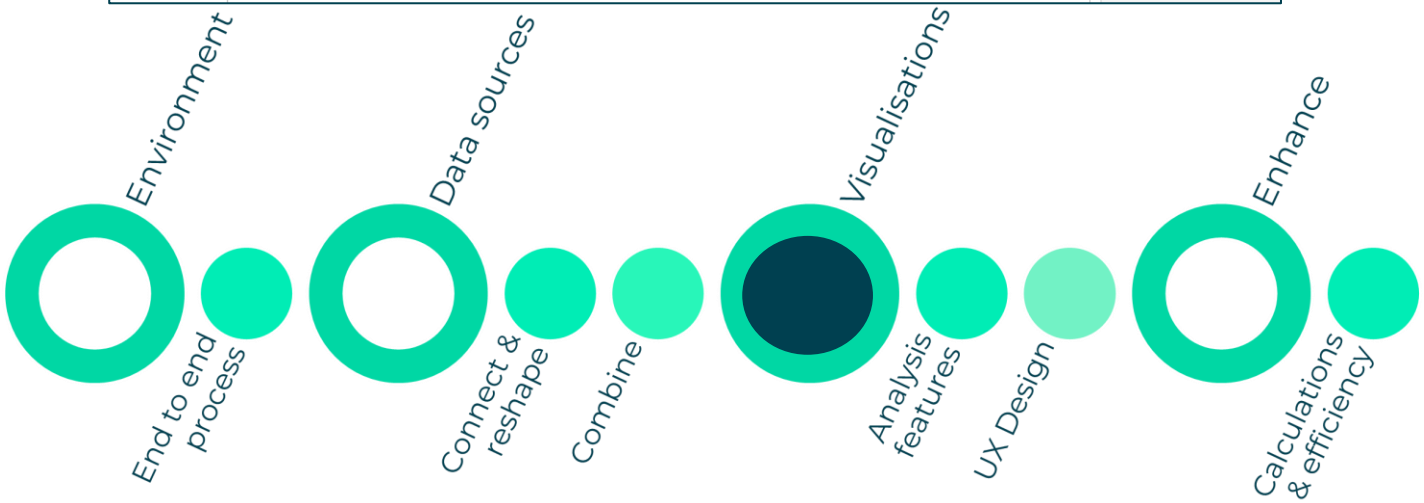


Activity 4.1:
sales viz with 3 measures

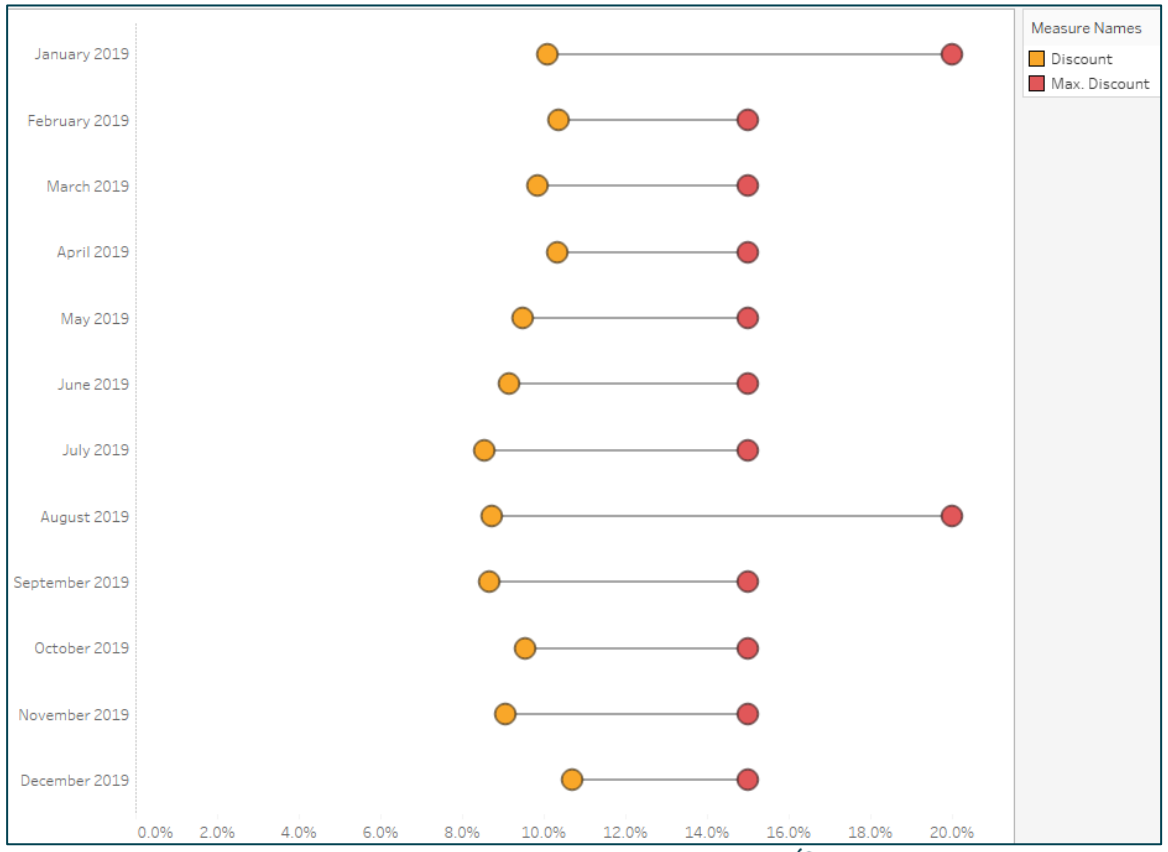
- Using your books analysis model workbook
- Dual axis viz – volume of sales v discount %, per month
- Add a third measure as reference label – no of unique edition/publications sold in the month
- Edit axis labels, select colours & mark size

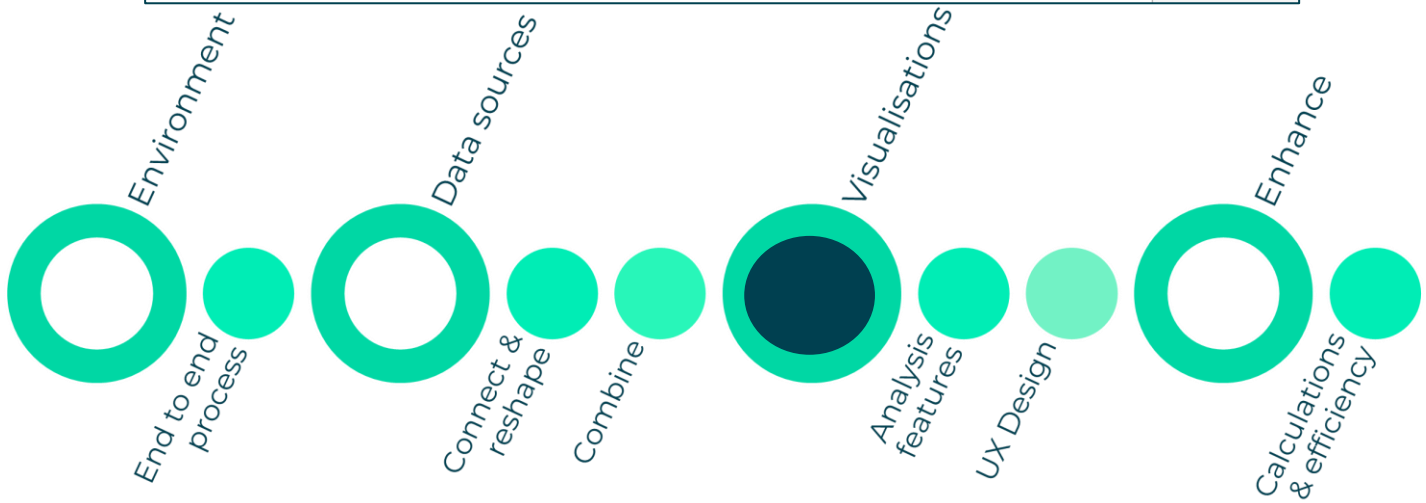
Review: multiple measure sales review



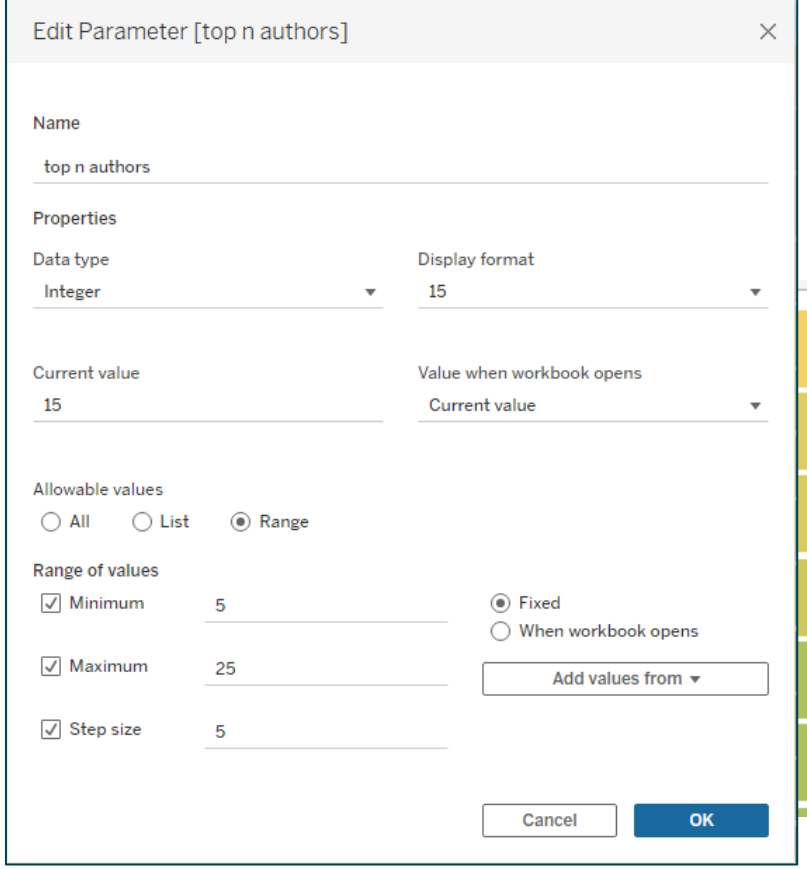


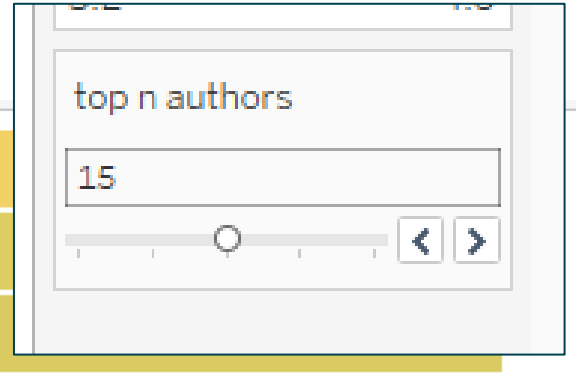
Span chart of discount rates

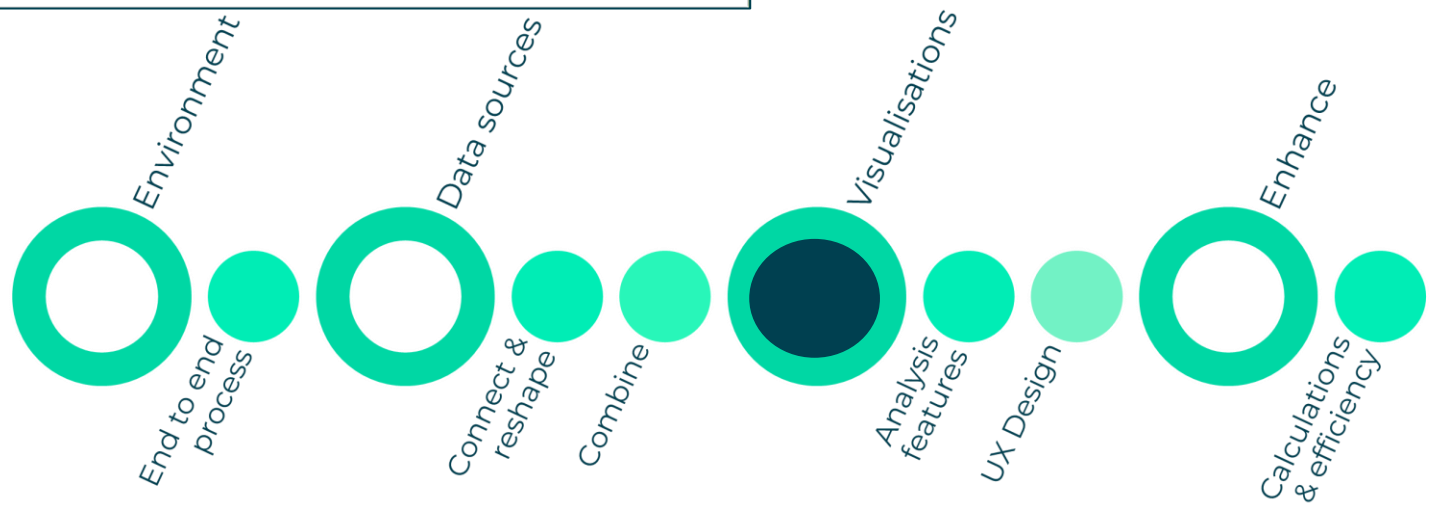




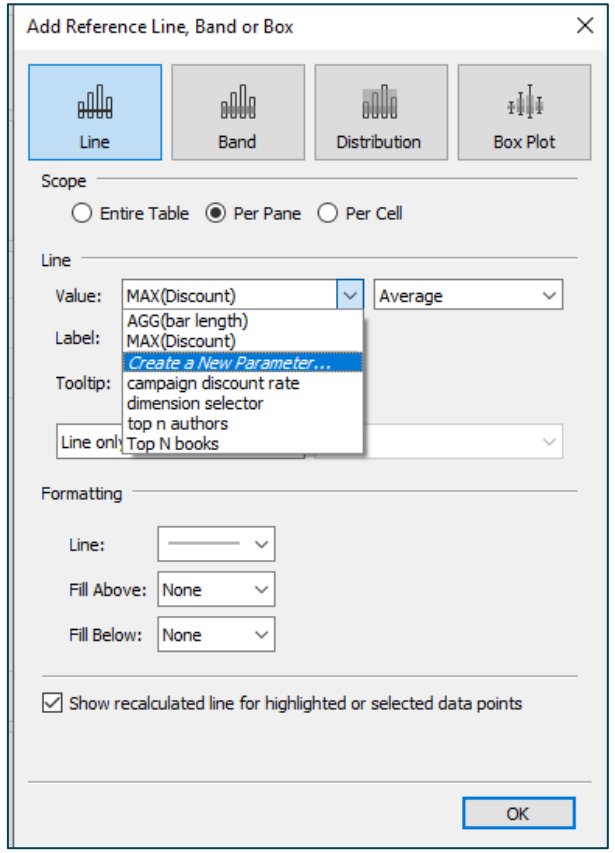
Parameterise filters for flexibility

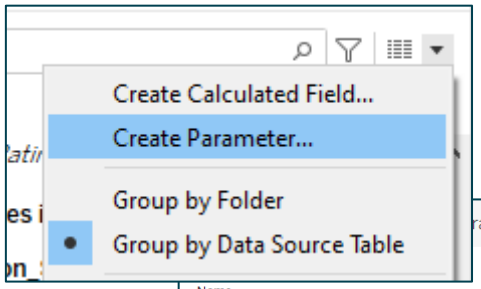


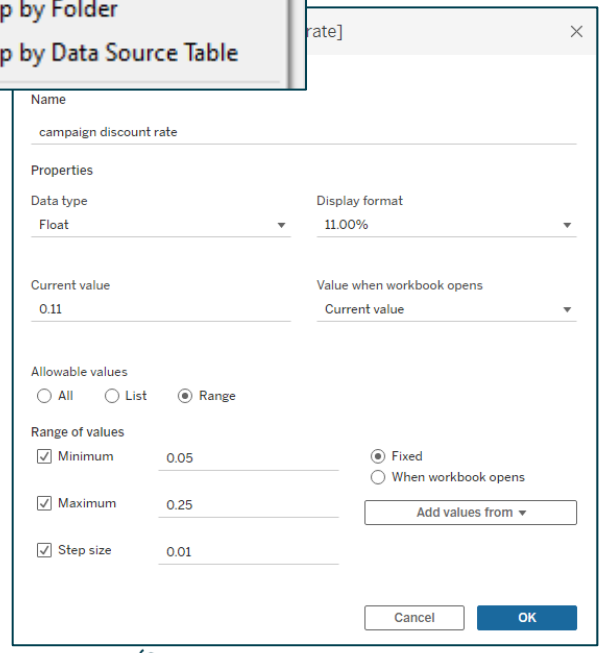


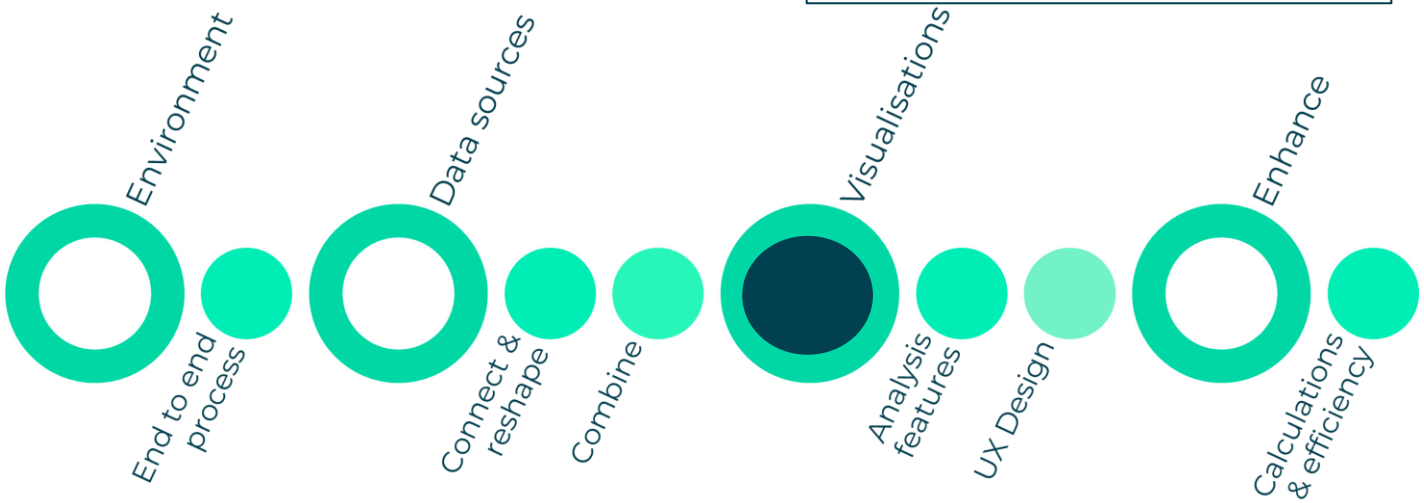


Creating and using parameters





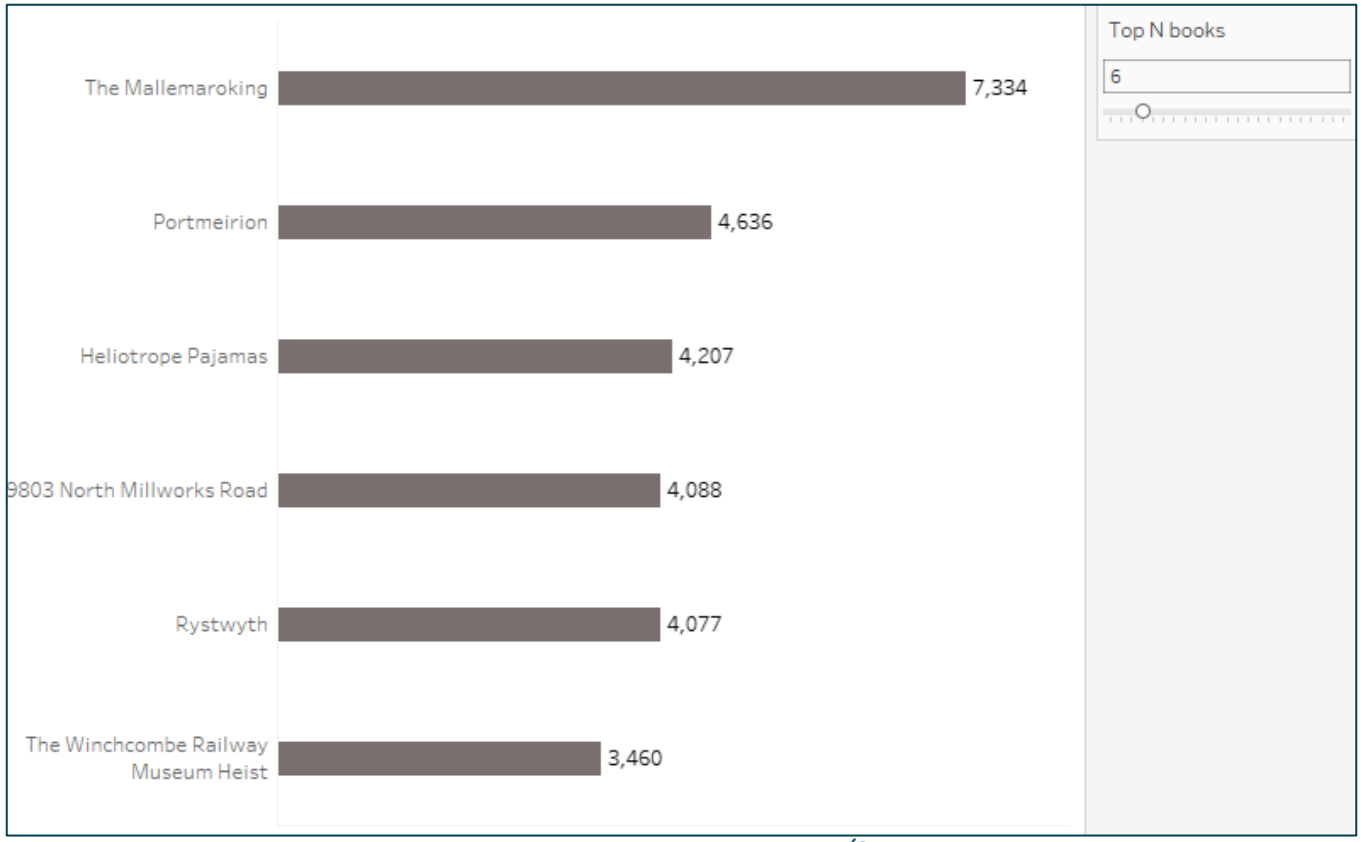


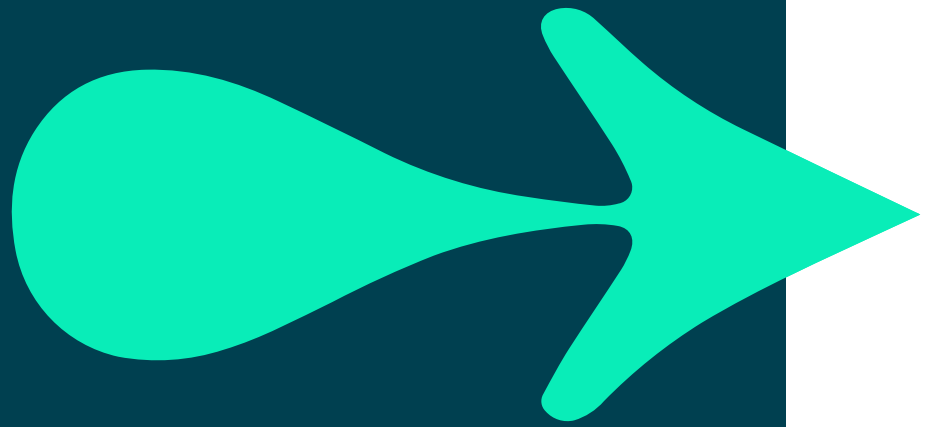


Activity 4.2: parameters for flexible filtering

- Create base viz –book titles and total sales
- Add a simple filter – top 10 titles by sales
- Modify the filter, replacing 10 by N

Review: top N filter





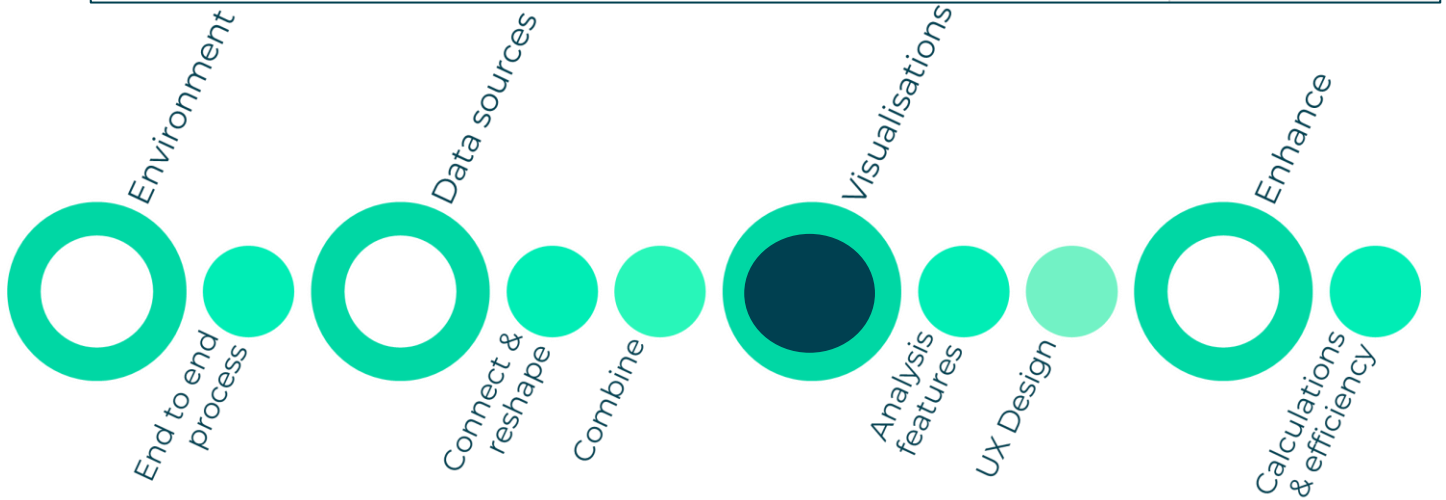
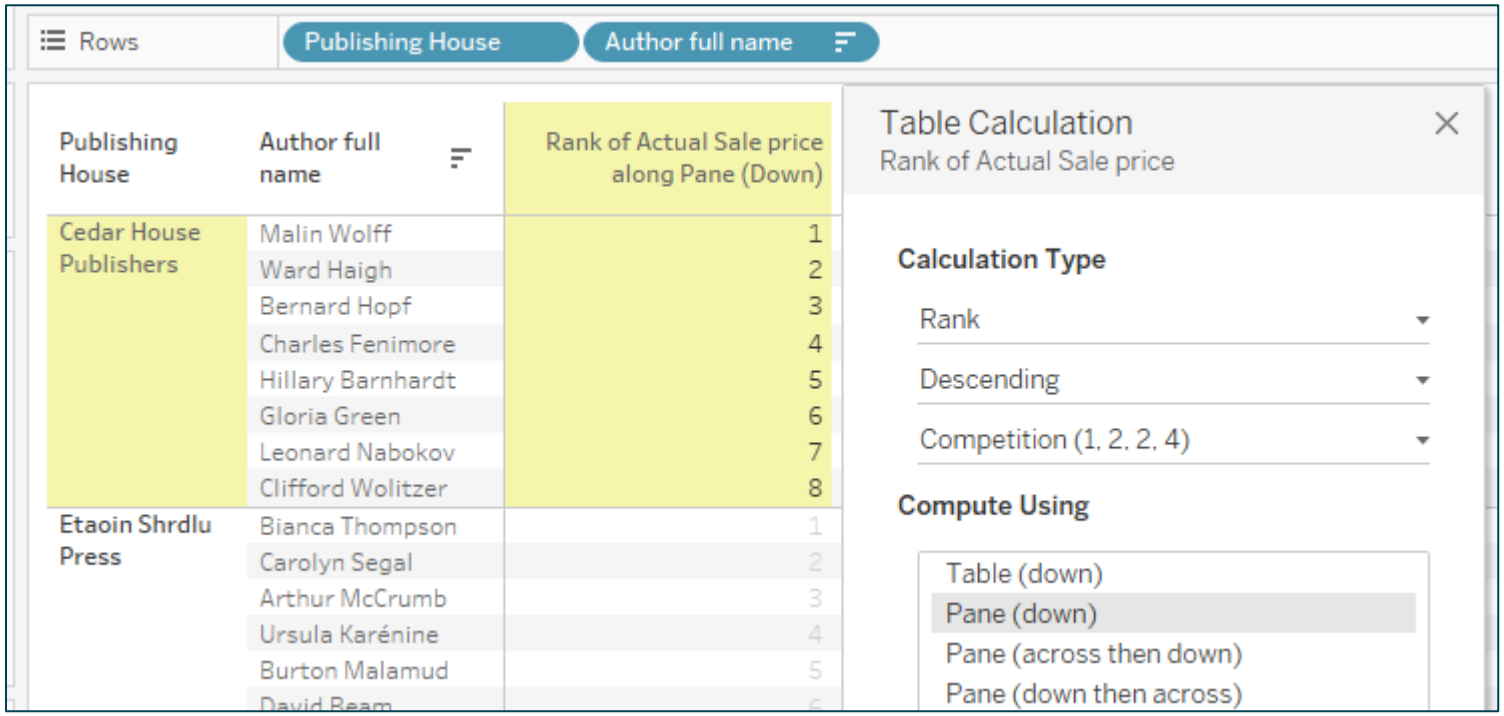
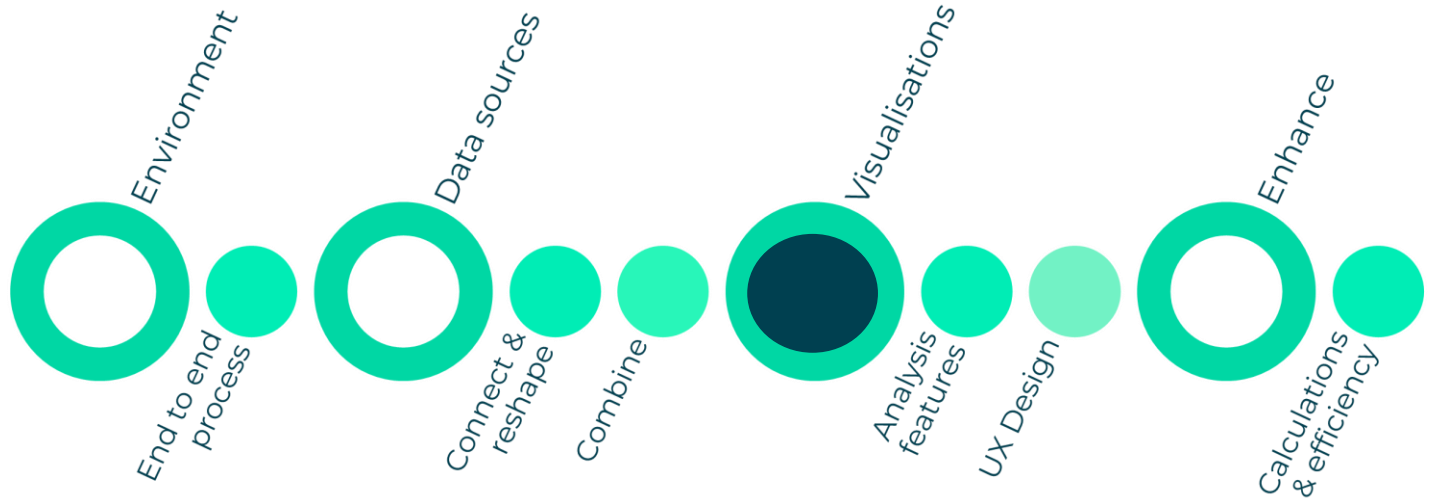
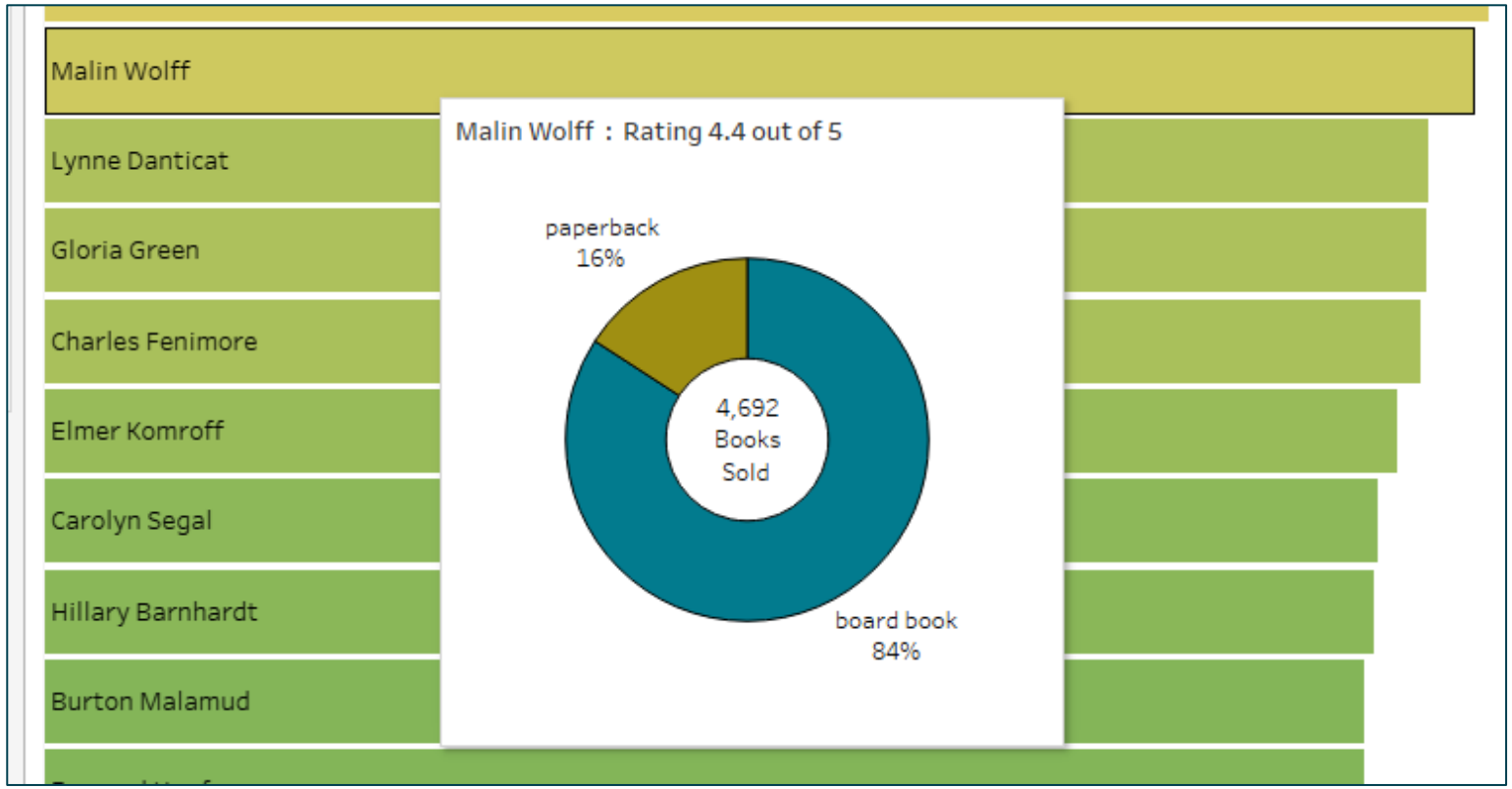


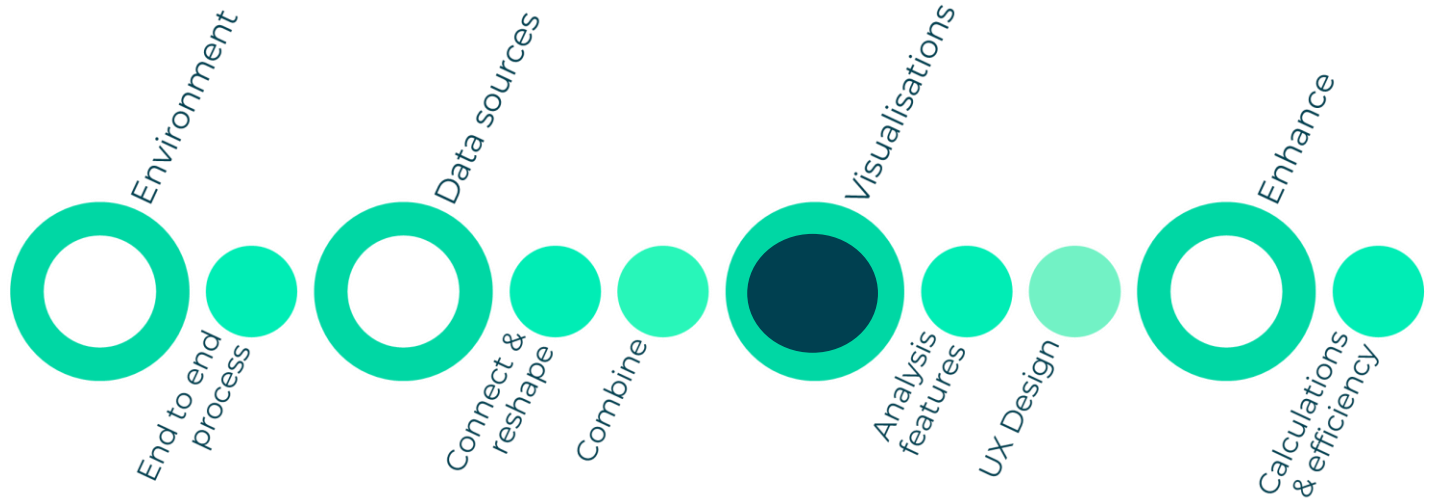
Table calculations





Viz in tooltip adds insight

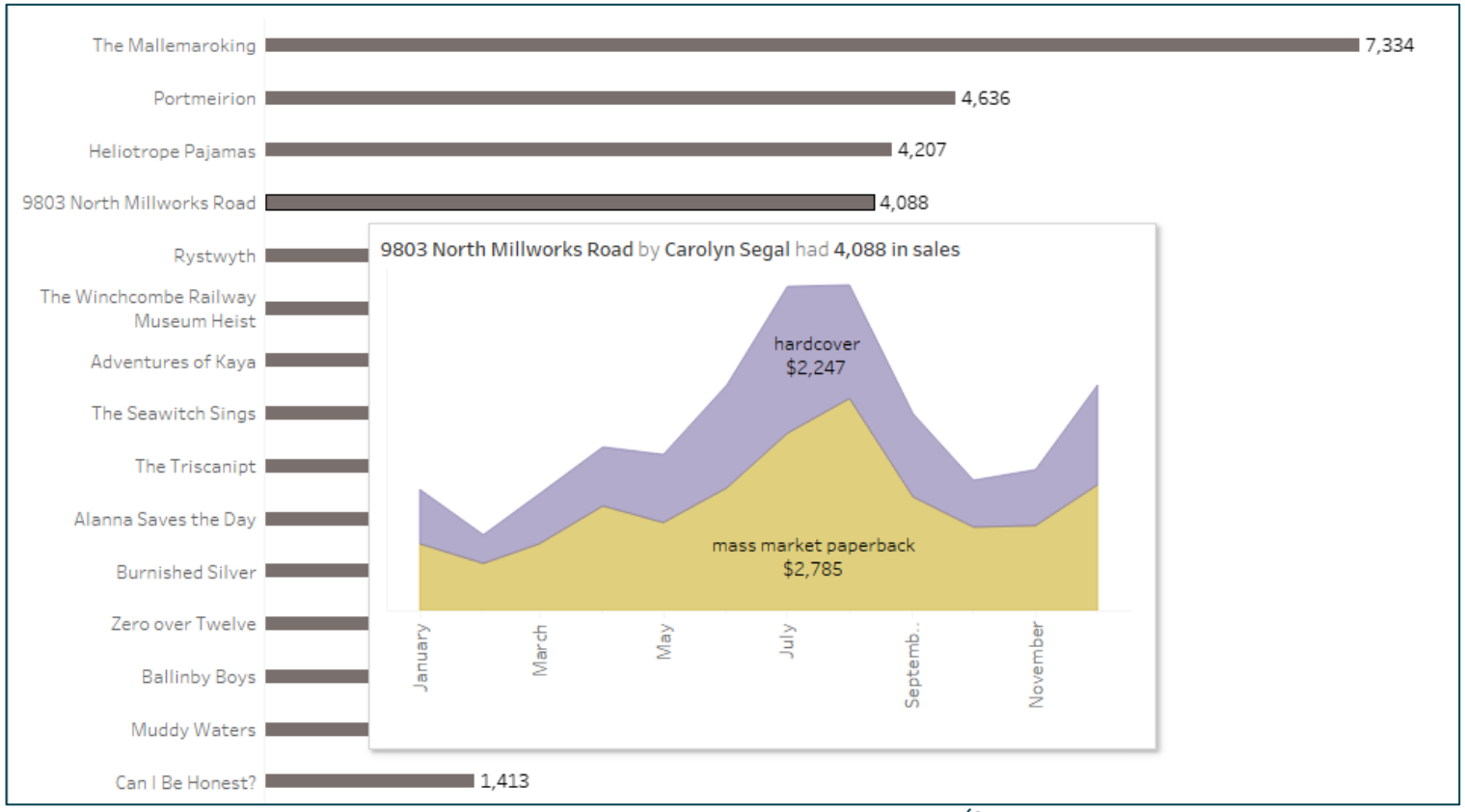




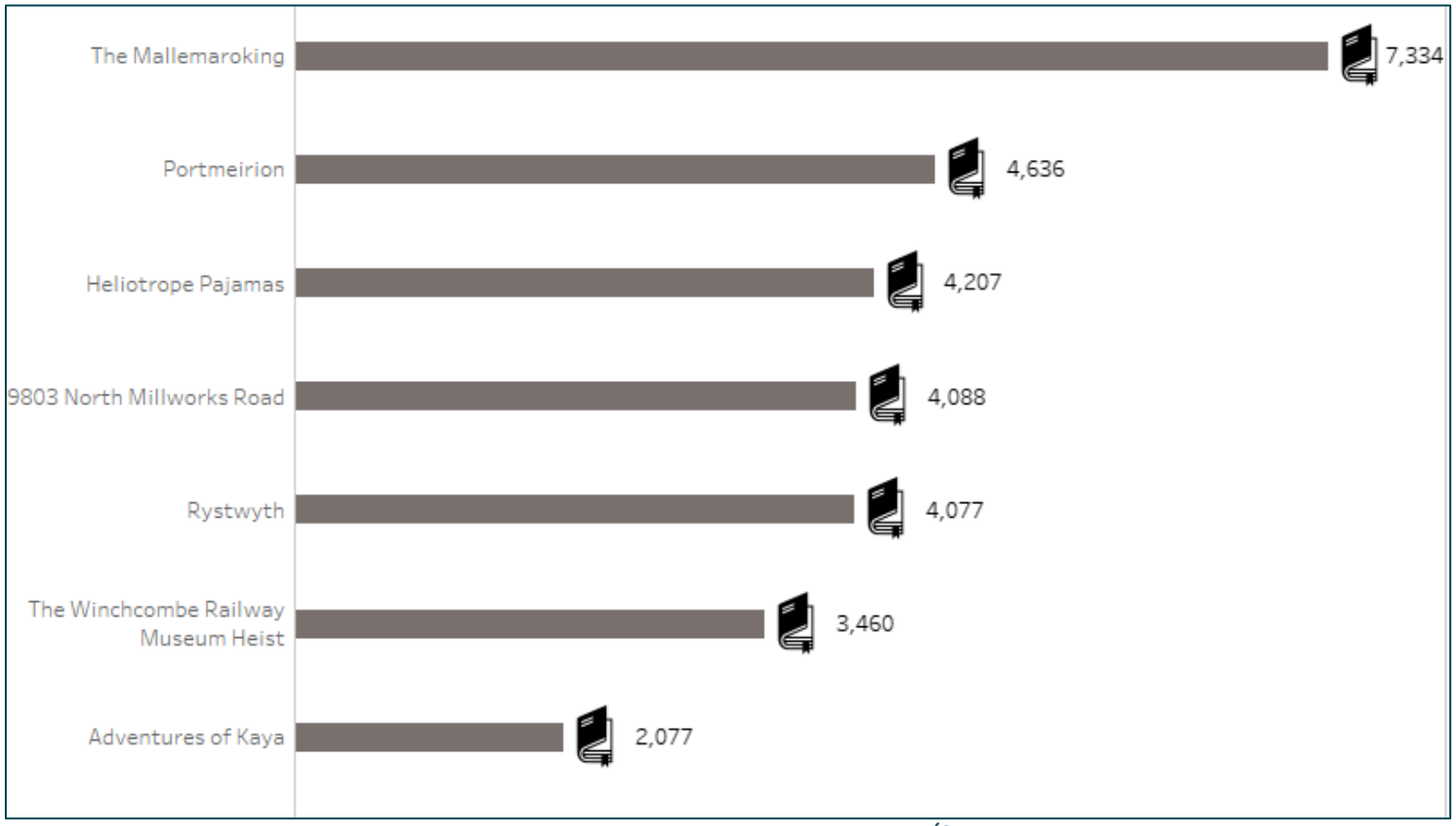
Activity 4.3: add a tooltip to top N titles

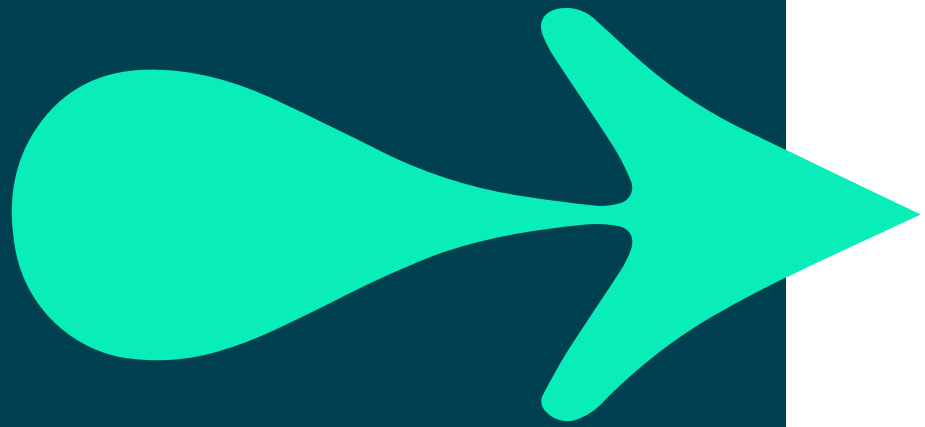
- Use your top N book titles by sales
- Add a copy of the sales measure to the tooltip, as table calculation rank
- Create second viz as revenue over time
- Configure the viz for the tooltip
- Add to base viz and test

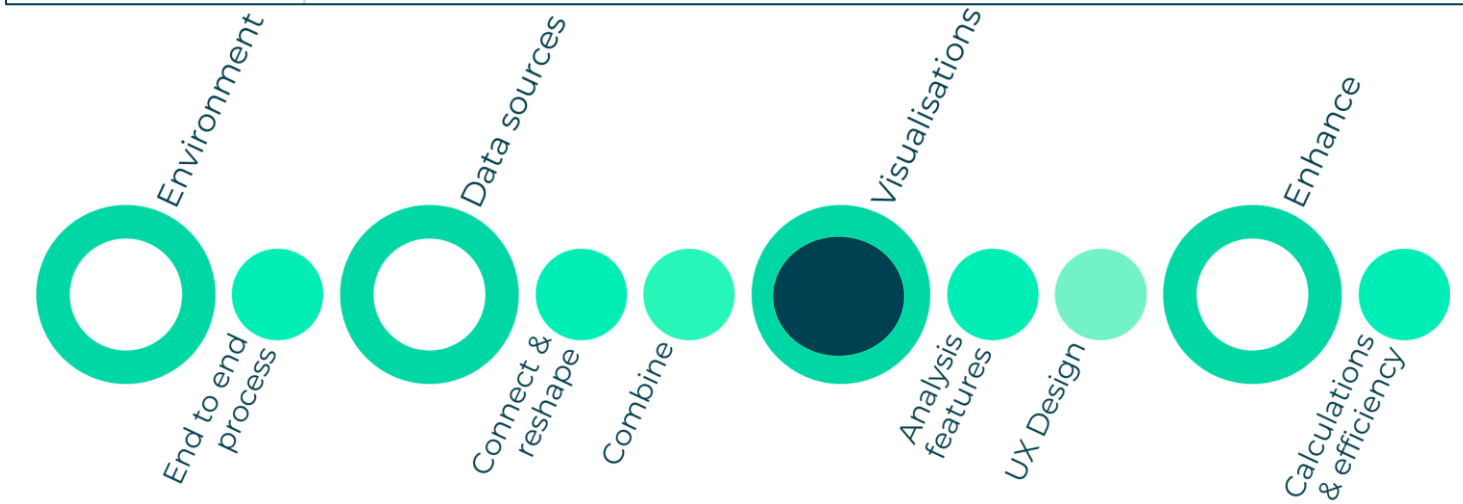
Review: viz in tooltip



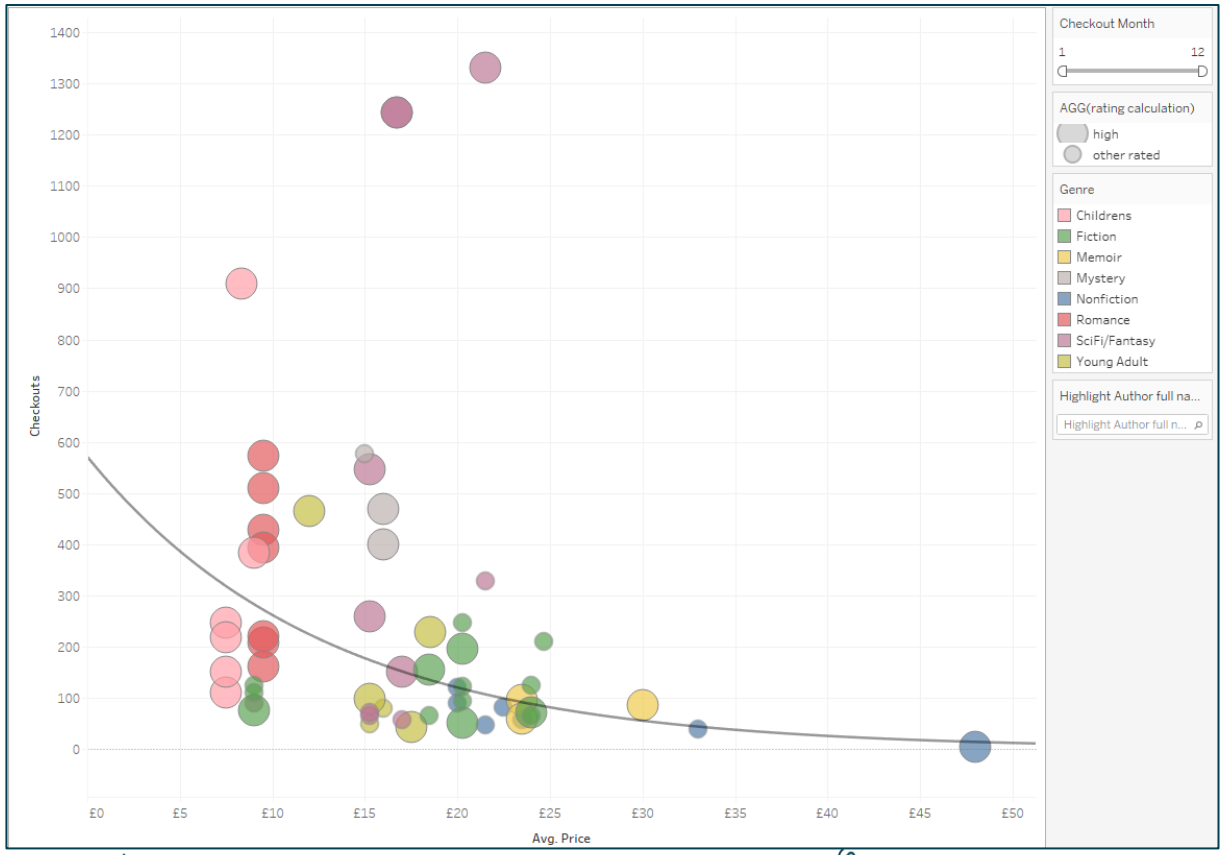
Add a custom book shape



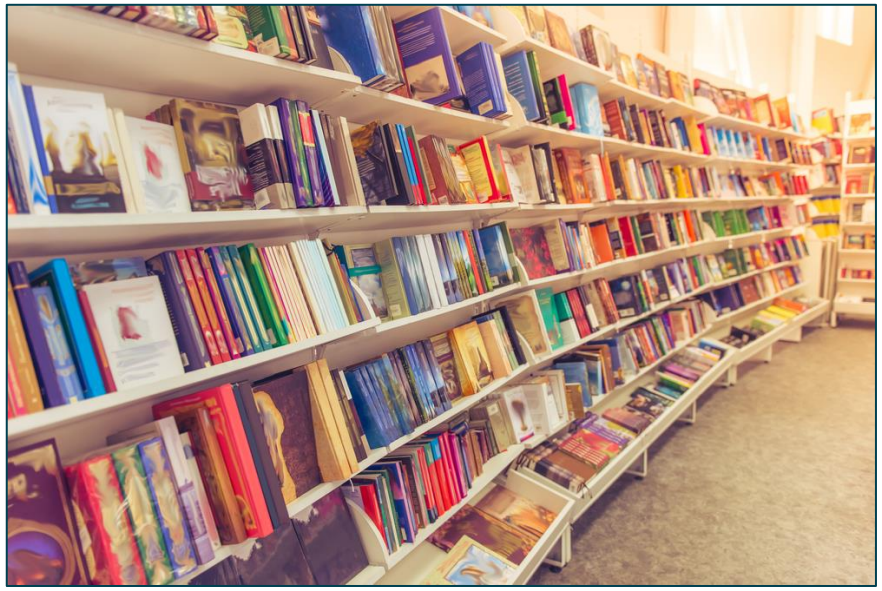


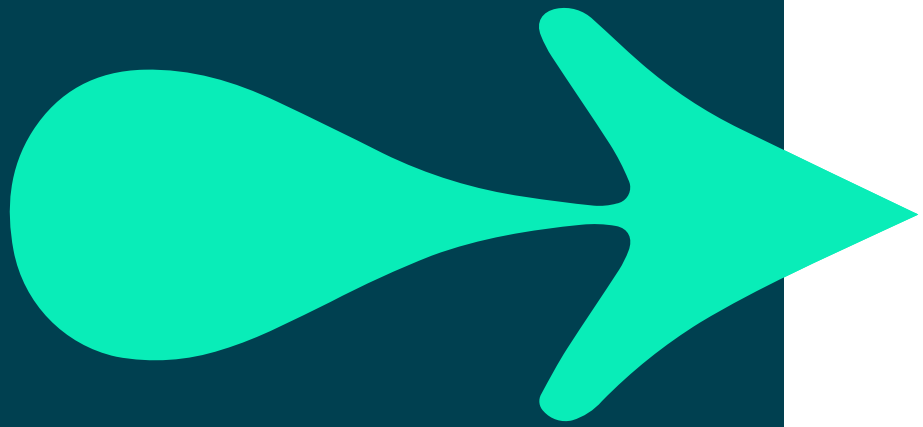


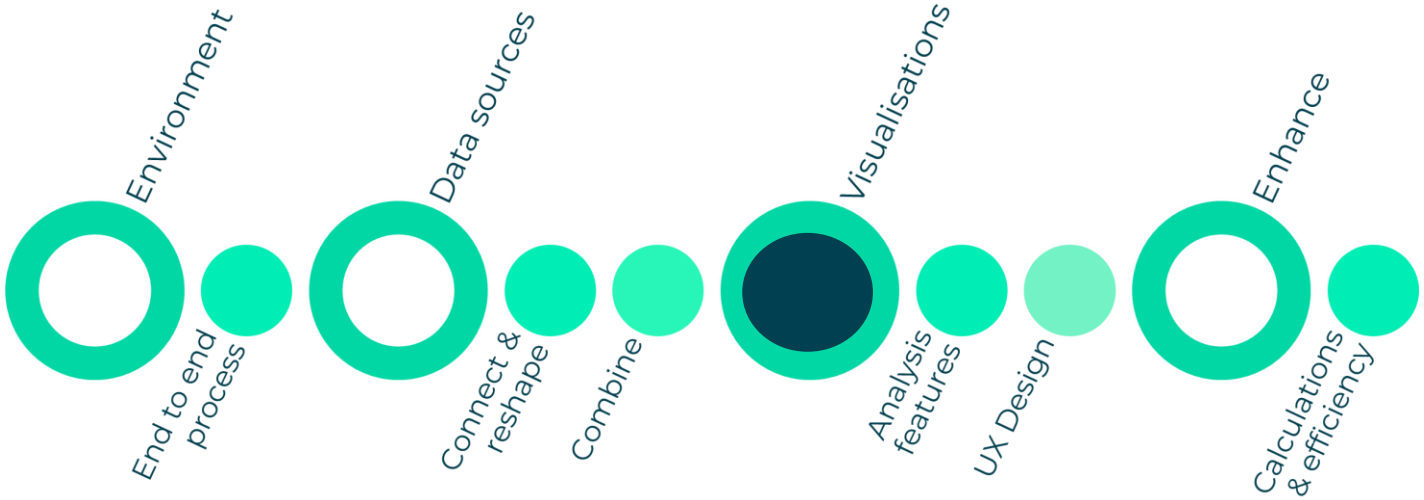
Dive into detail with scatter plots



Which new titles do we want to stock?



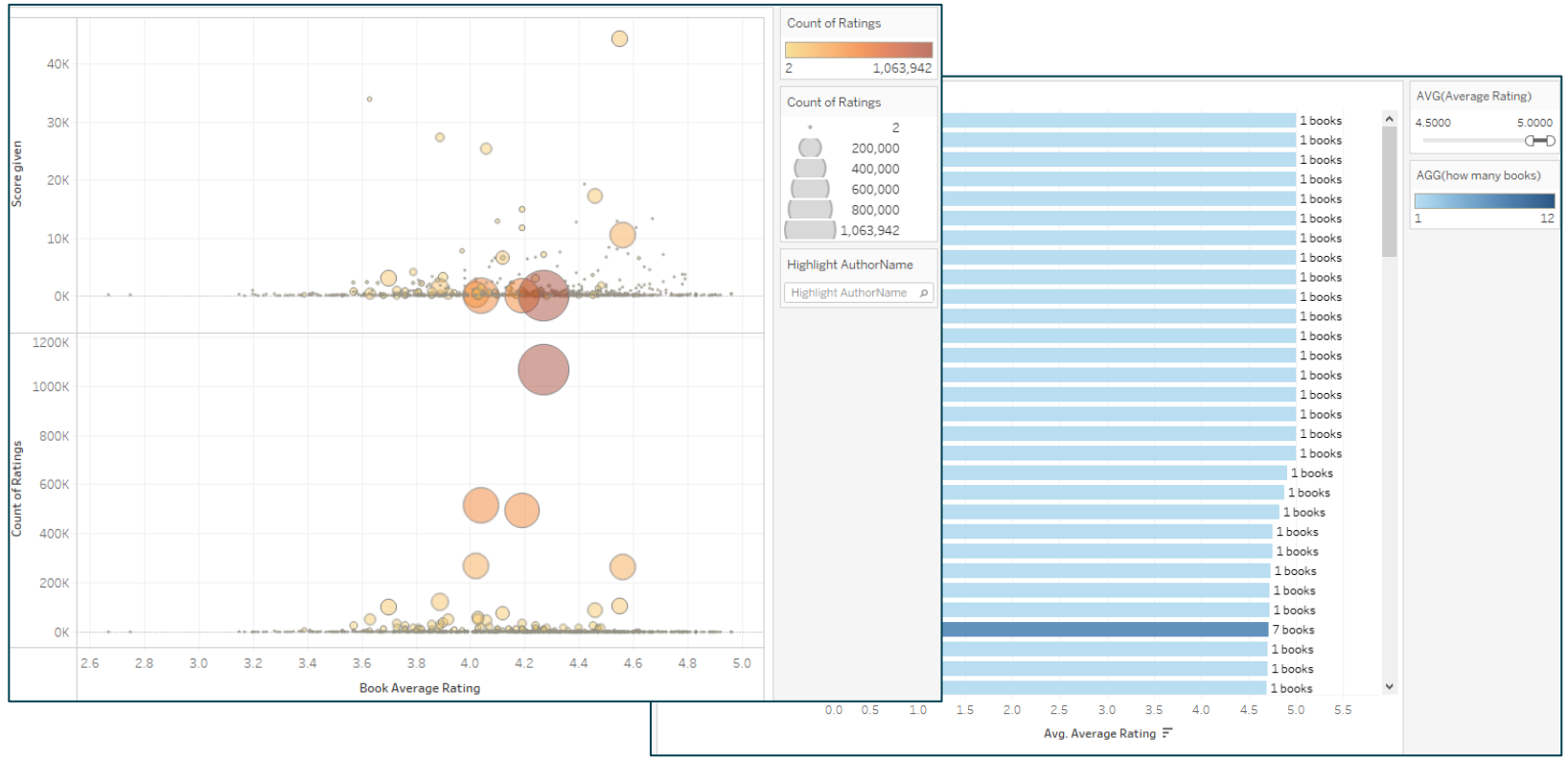


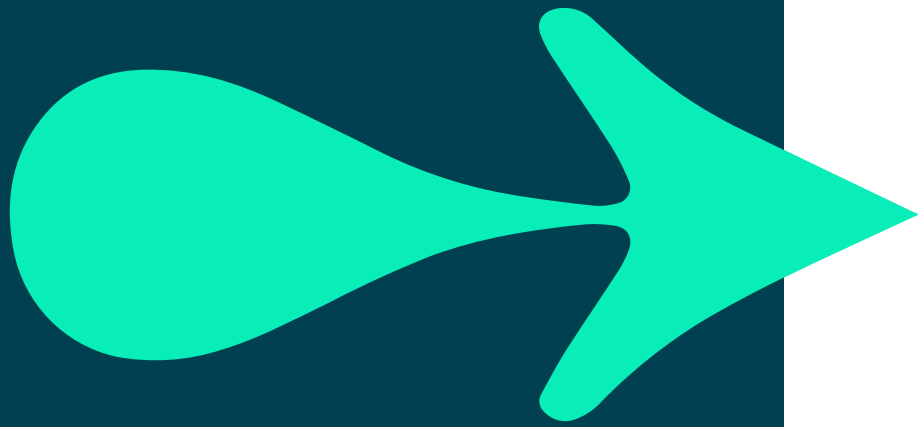


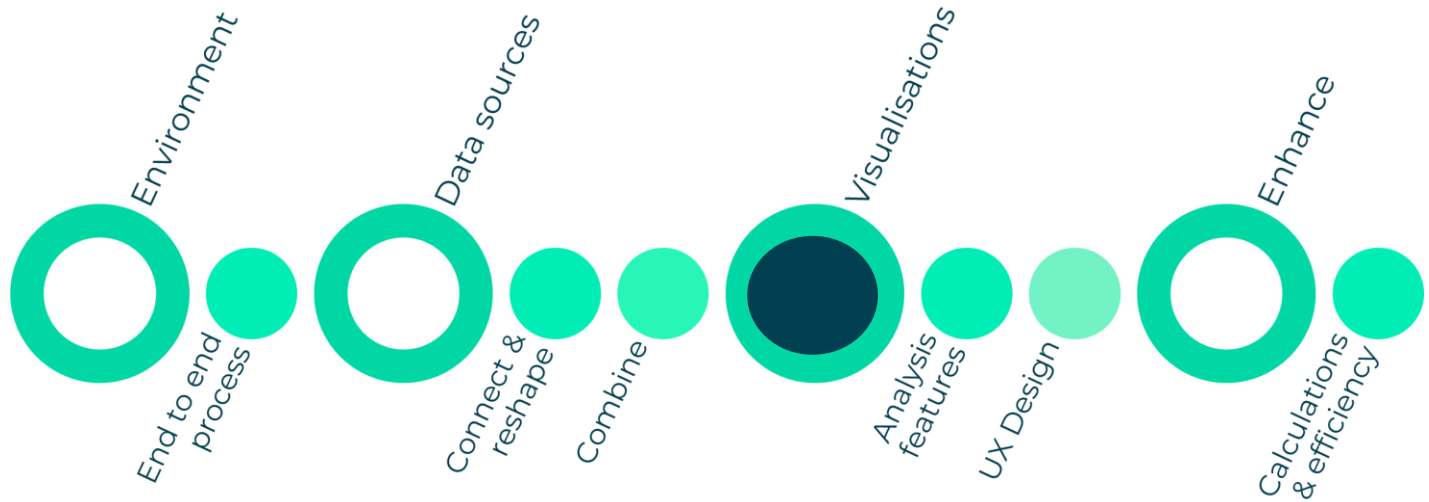
Activity 4.4:
Scatter plot new titles

- Select a data source(s) which contains ratings
- Derive data as needed
- Create a scatter plot showing the ratings and one other measure of interest
- Add useful information to the tooltip
- Add relevant highlighter, filter, pages

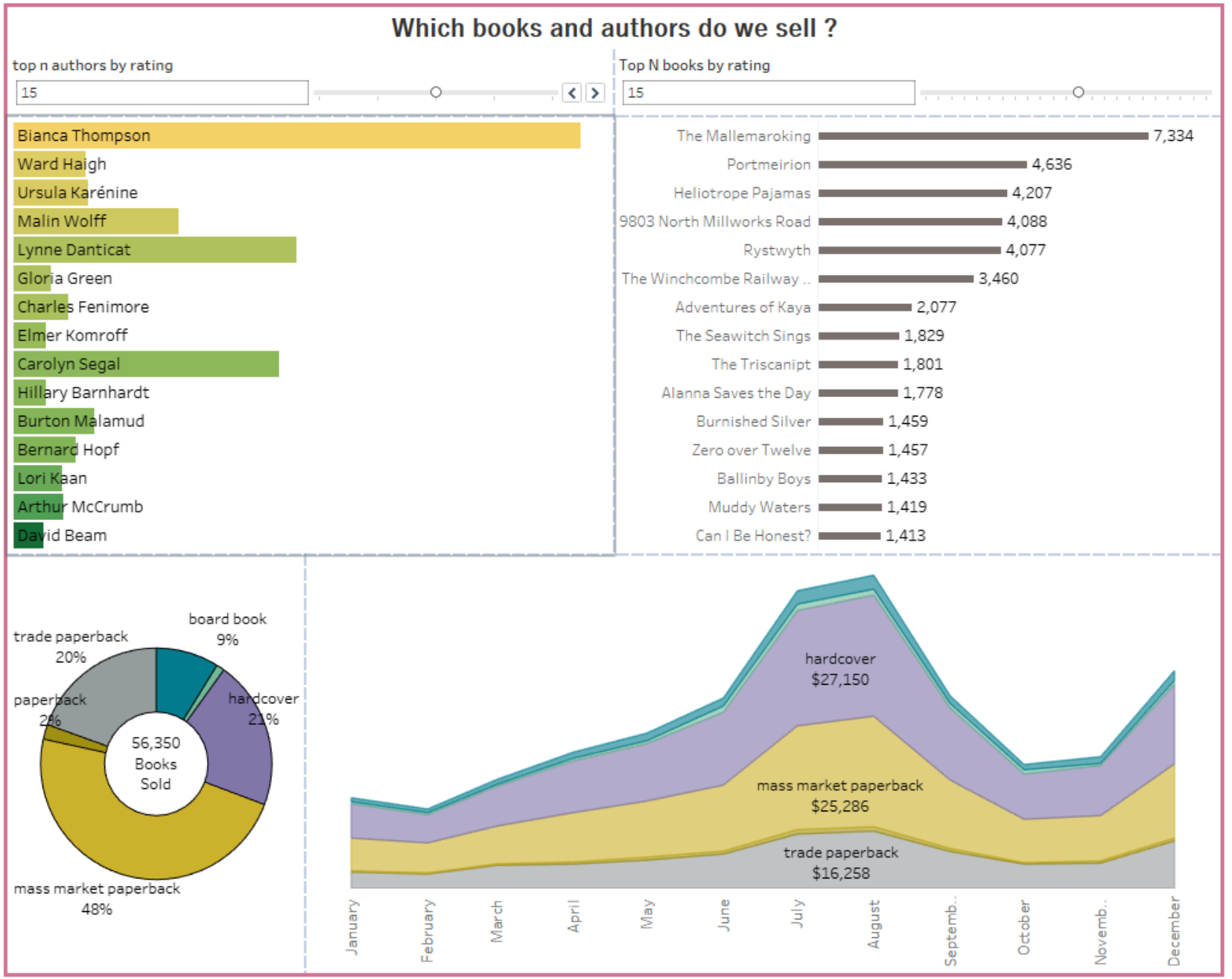
Review: new authors and titles







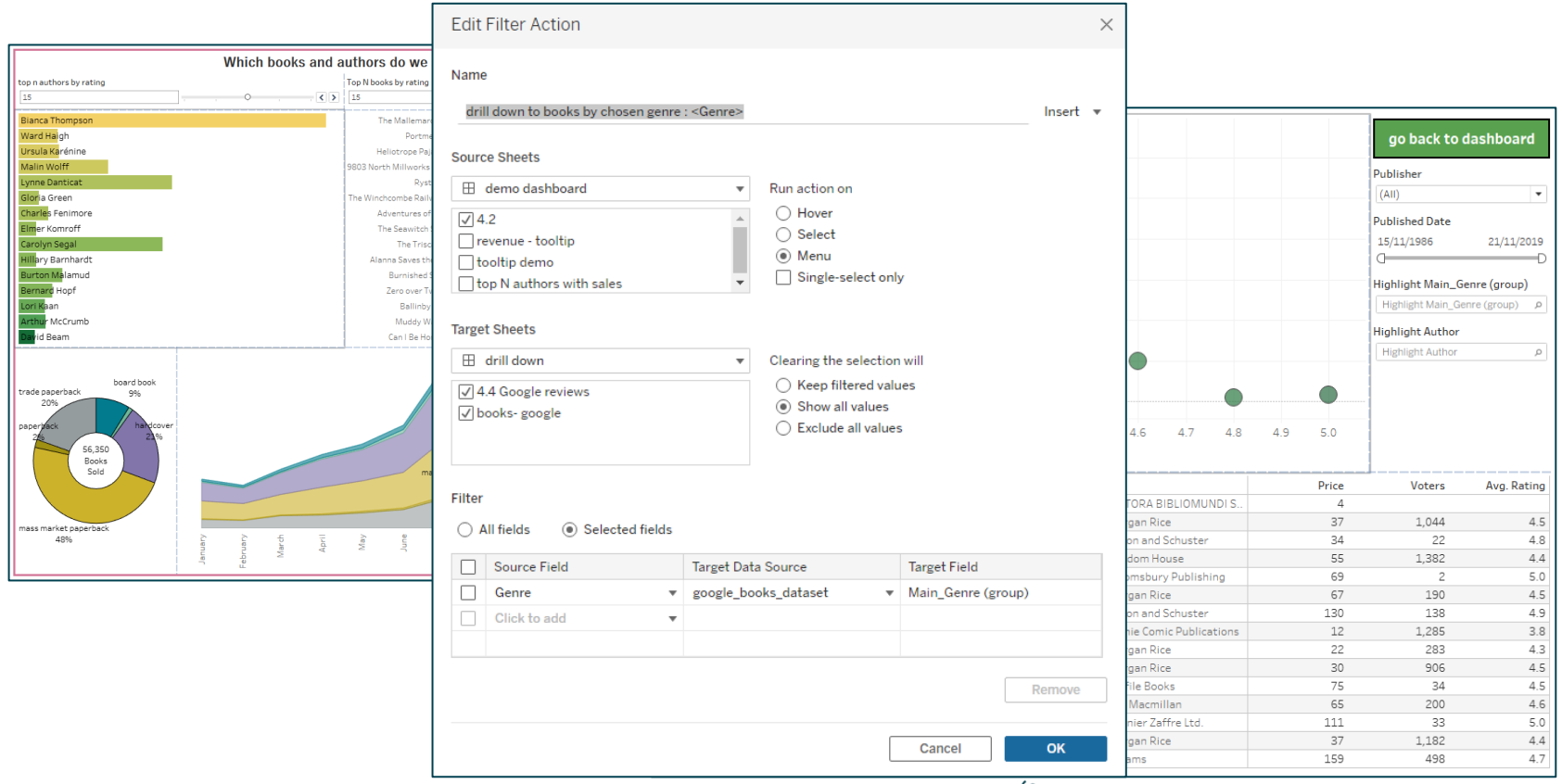
Combine vizzes into dashboard



Activity 4.5: case study dashboard

- Compile book titles dashboard
- Select data containing user reviews
- Combine sources in the dashboard as needed

2 levels of dashboards with drill down



Activity 4.6:
drill down dashboard

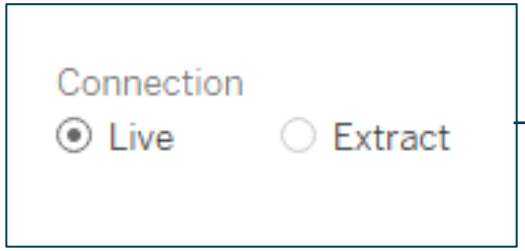
- Design a dashboard drill down journey which starts from the book titles dashboard
- Drill by any of :
    - Genre
    - Author name
    - Rating

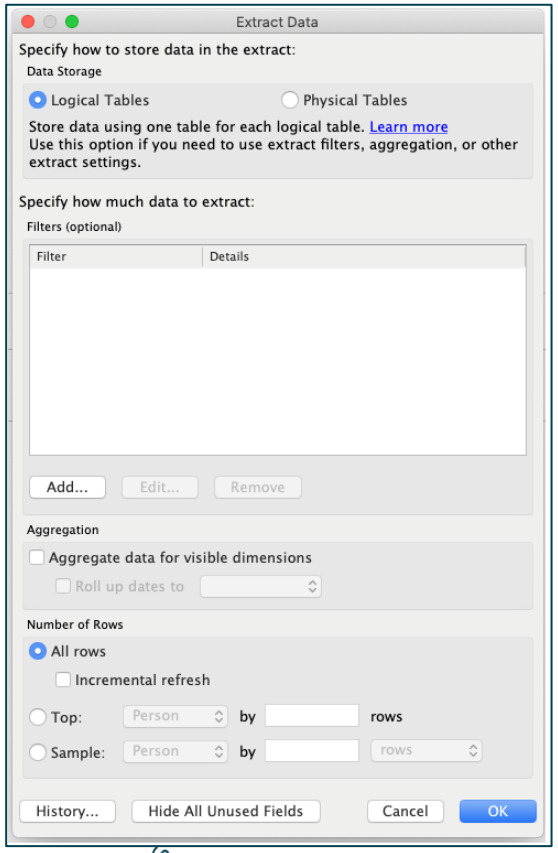
Summary of what we learnt

1. Useful viz design concepts
2. Flexible visual selection features
3. Dashboard design elements
4. How to drill down from one dashboard to another

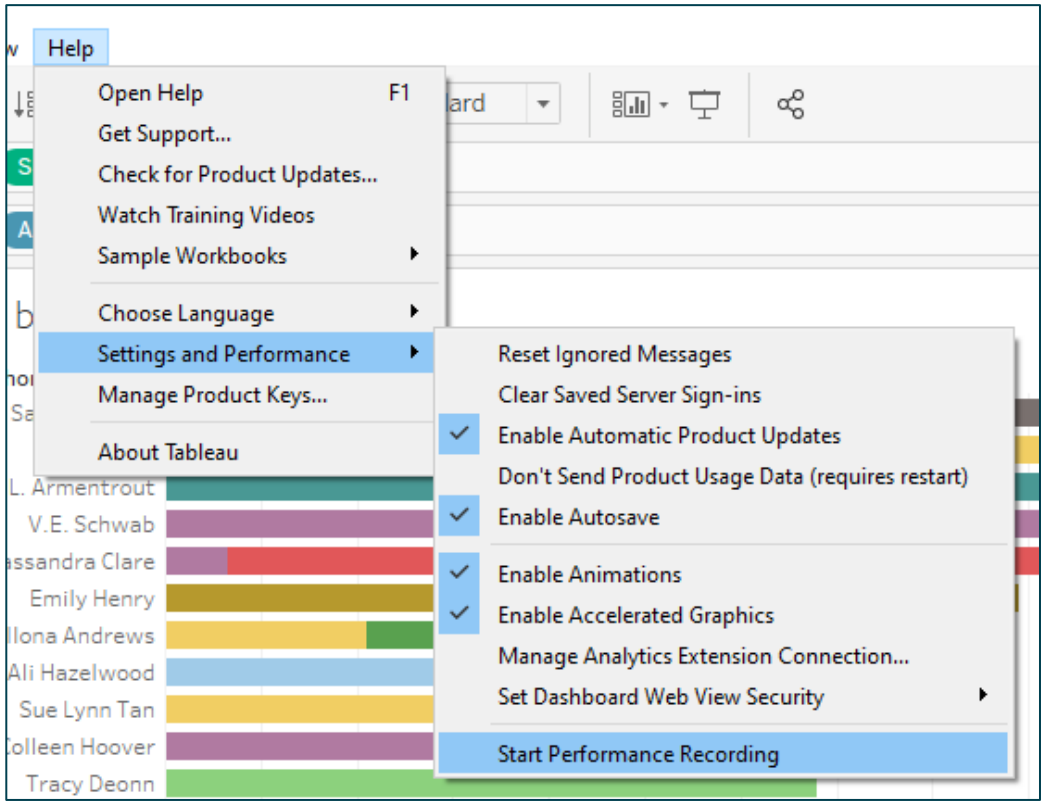
Module 5
Enhancements

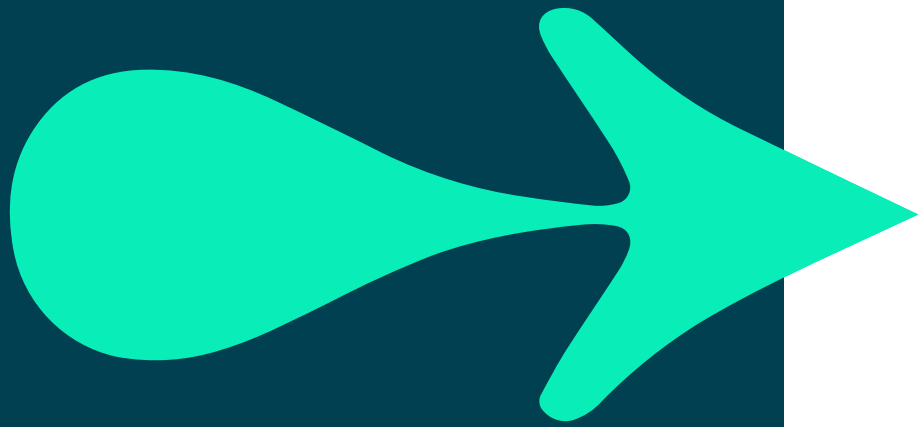
Performance of data sources

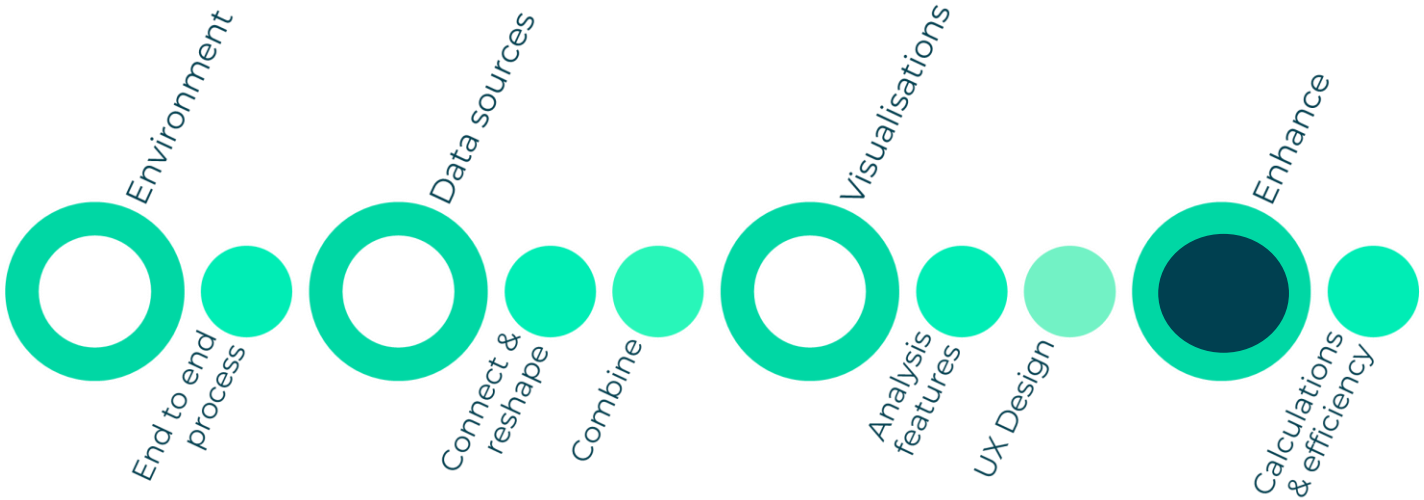




Performance recording



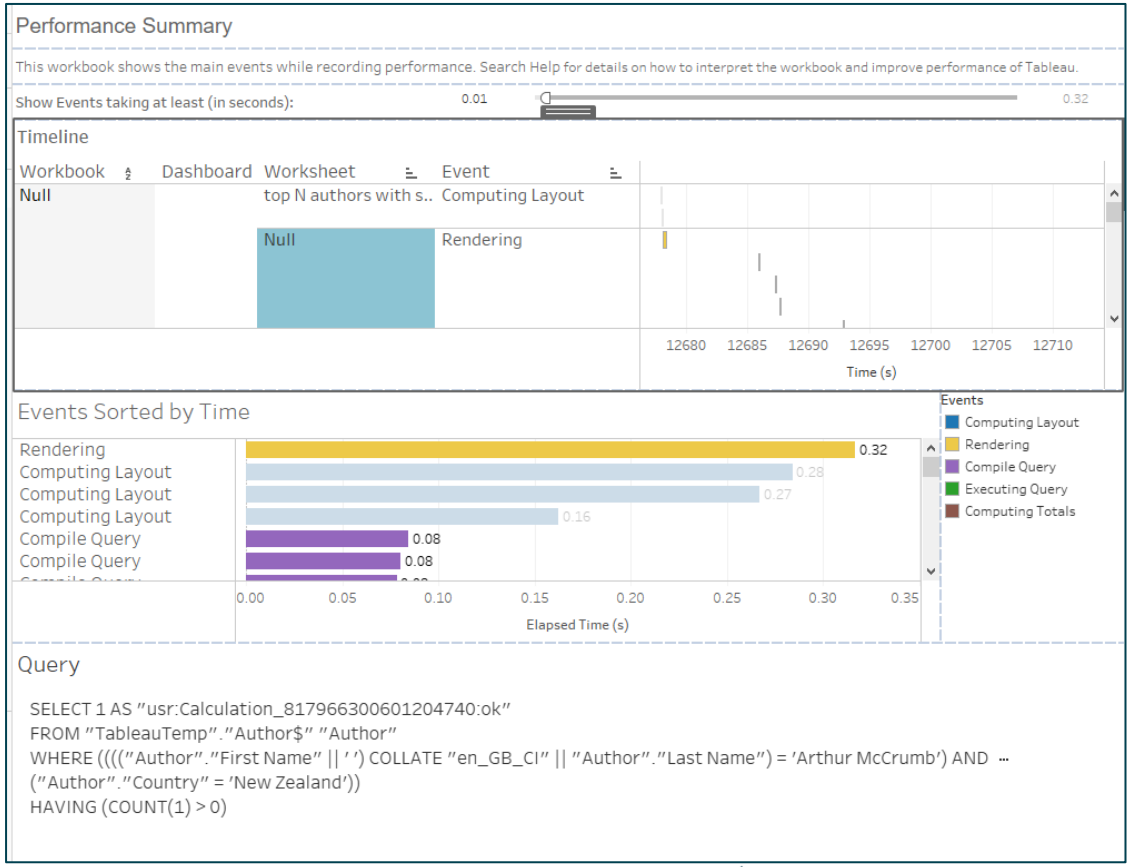


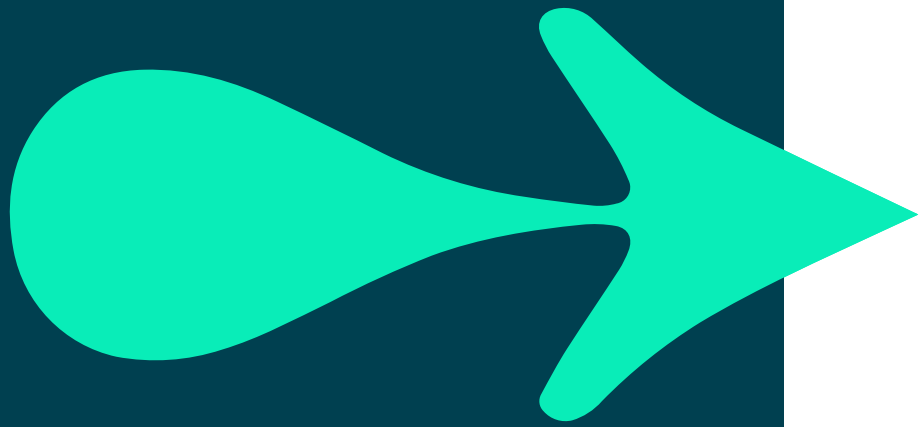


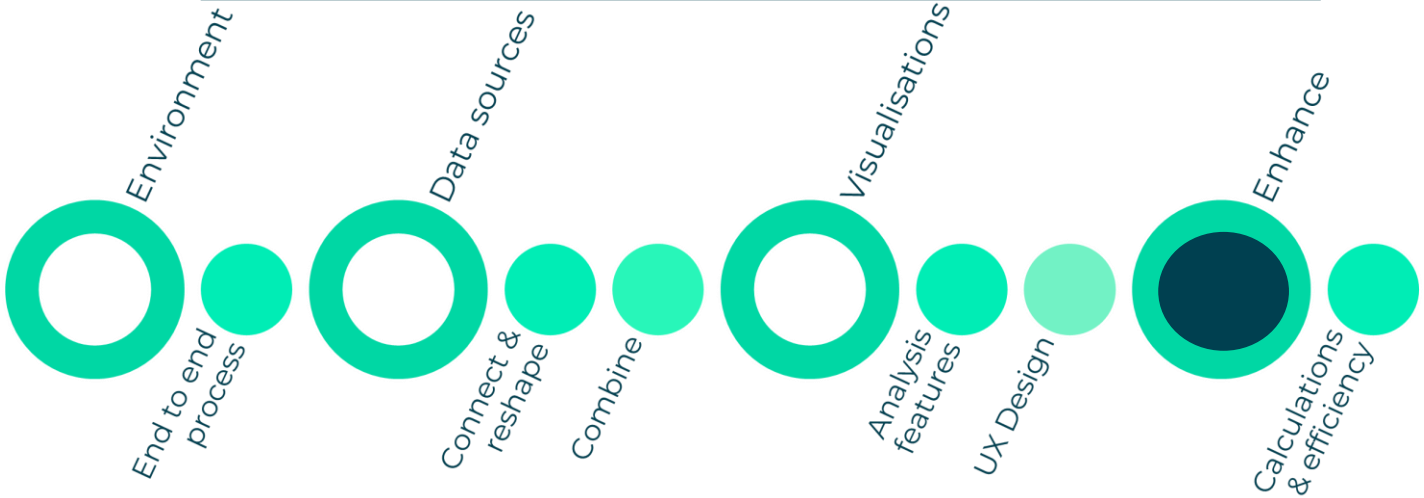
Activity 5.1: Workbook performance

- Turn on performance recording
- Interact with the dashboard
- Review performance report
- Switch from live to extract
- Hide unused fields and save as new .twbx

Performance findings and actions



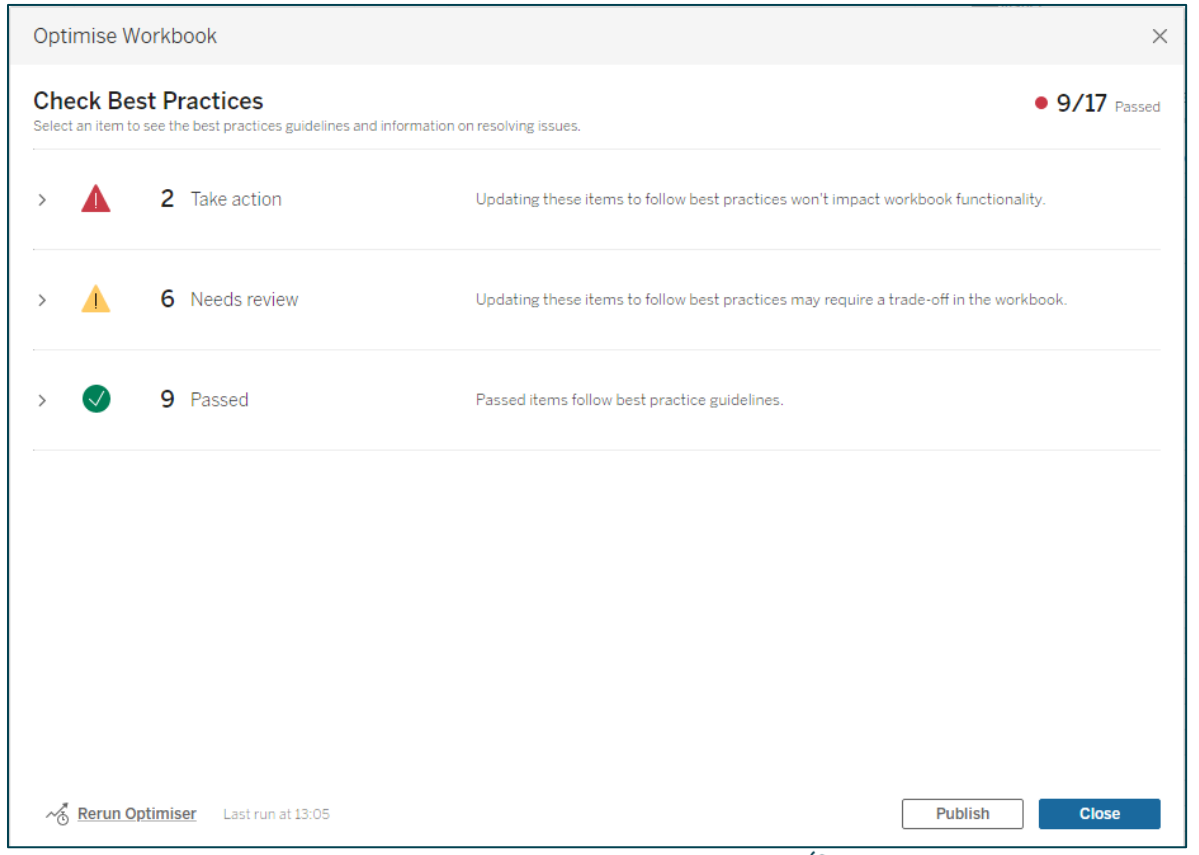


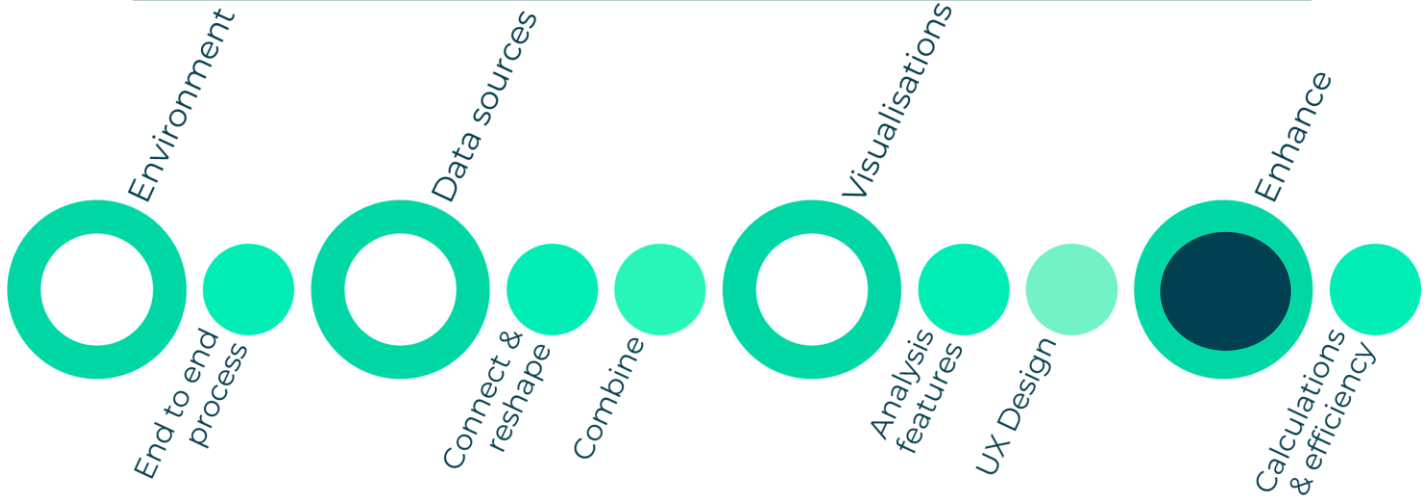


Efficient workbook tips

1. No excess calculated fields not in use
2. Default should be extract, not live
3. Data source filters to reduce data volume
4. Hide unused fields
5. Roll up to needed granularity level
6. Review calculation logic for efficiency
7. Clean up vizzes – less complexity
8. Only relevant value filters / sets

Workbook optimiser

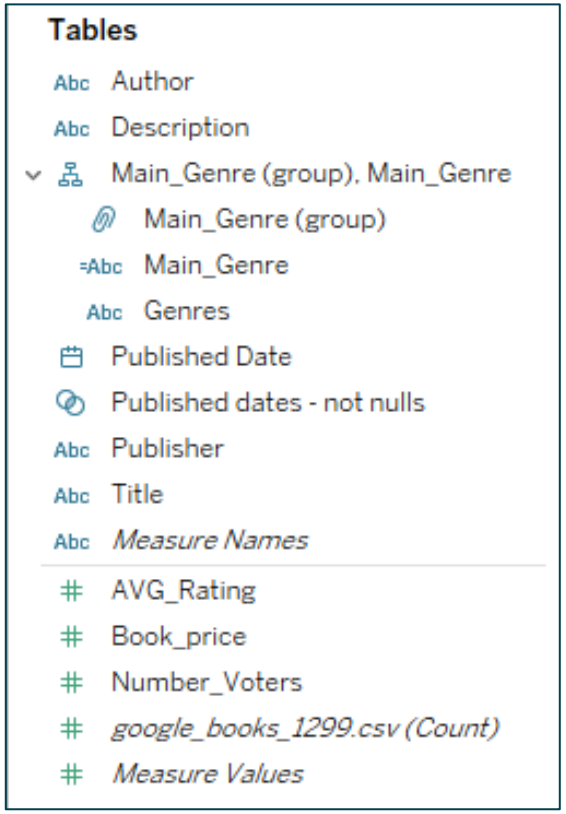




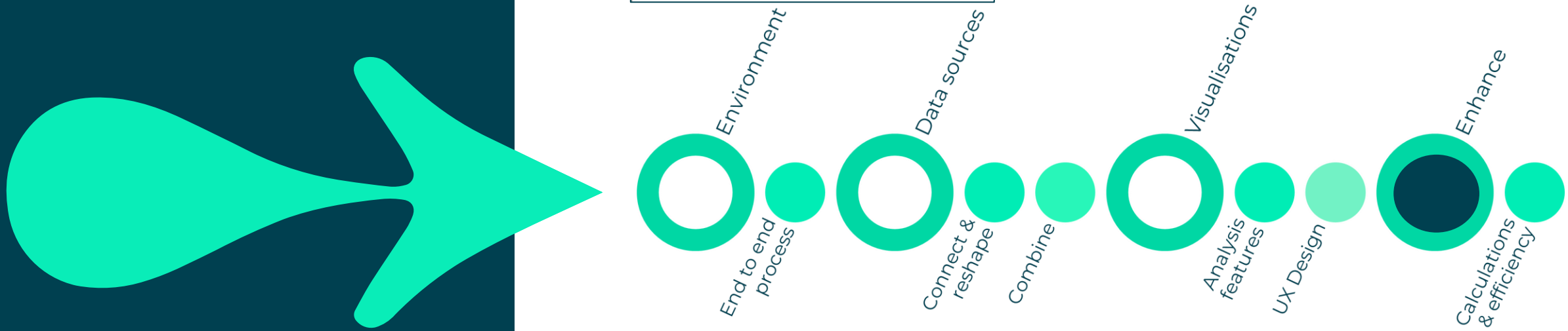
Activity 5.2: optimise workbook

- From the server menu, run optimiser
- Review optimiser results
- Take any actions identified by this feature

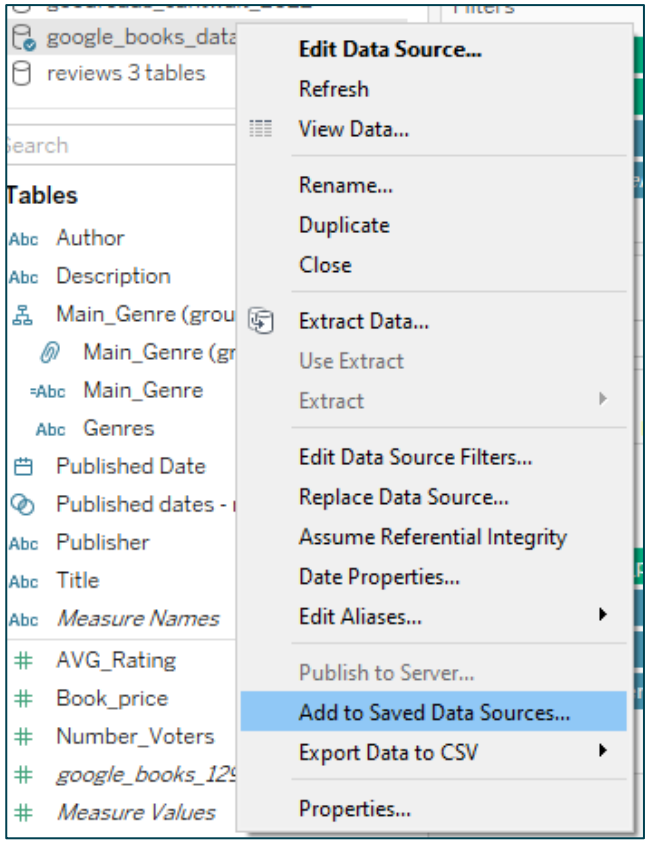
End user customisation

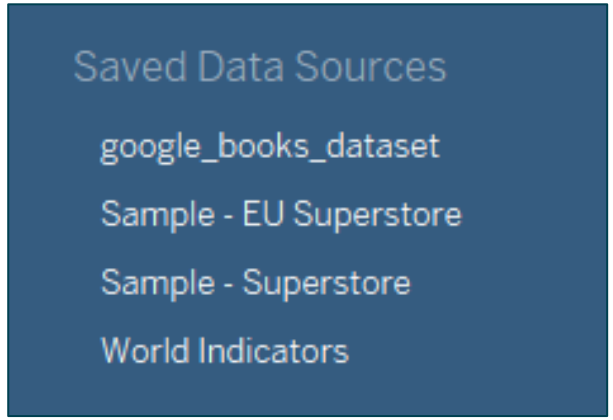


1. Hierarchy
2. Group
3. Set
4. Rename fields
5. Default Properties
6. hide/ remove unused



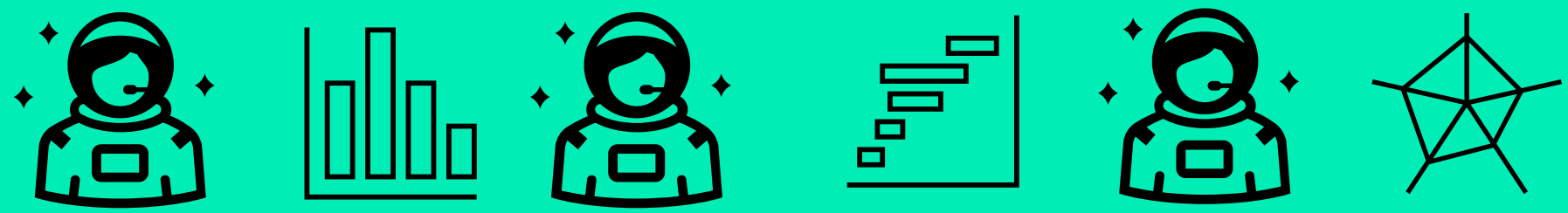
Save as reusable data source





Summary of what we learnt

1. Performance monitoring
2. What is an extract?
3. Workbook optimisation
4. Tips for calculations
5. End user data source tailoring



What will be your next steps?

POWERING POTENTIAL

THANK YOU

Hope you enjoyed this learning journey.