

goo.gl/347x44

Download Please



PowerBI File –

<https://goo.gl/347x44>

Excel File

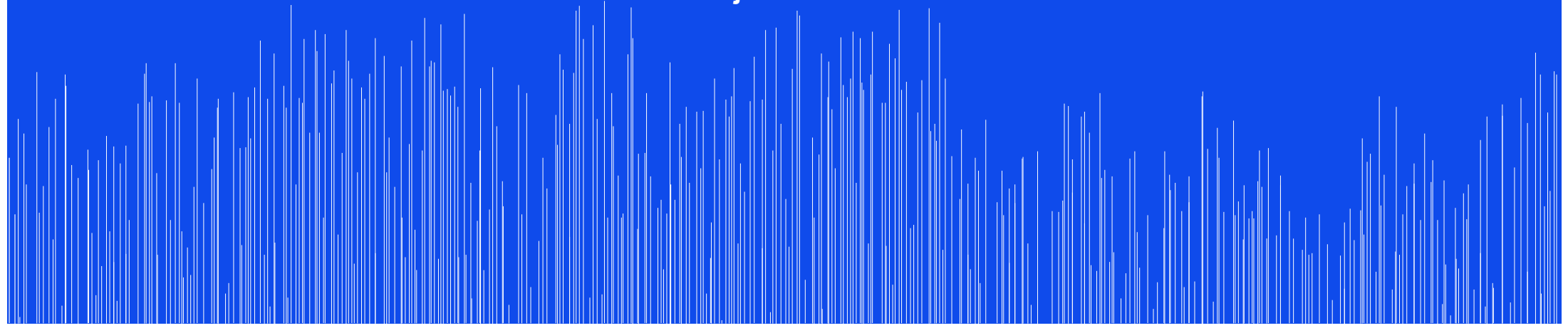
<https://goo.gl/7gWBuu>

Data Visualisation with PowerBI



How UTS Library is experimenting with data visualization tools

Rebecca Dale – Project Officer



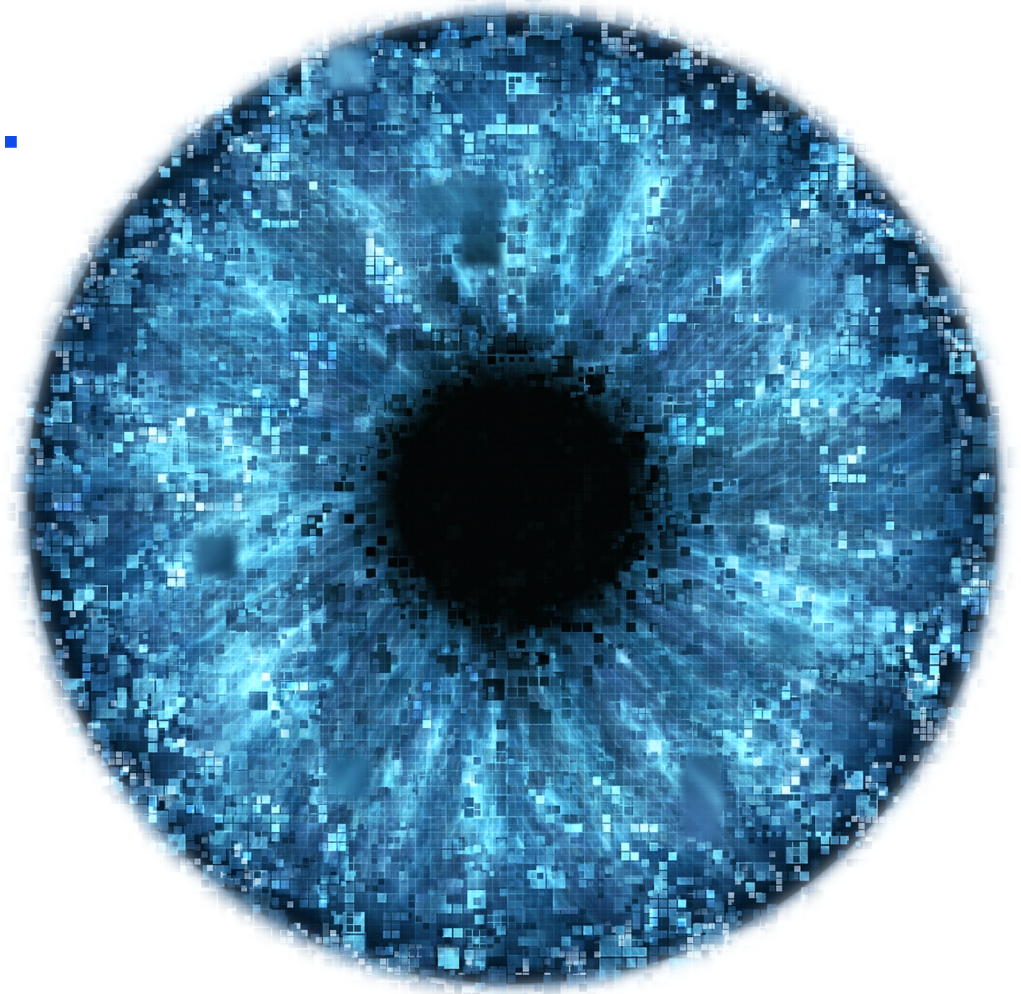
Why the library is interested in data visualisation

- Digital and data literacy are the literacies of present and future.
- Datasets are increasingly part of library collections and student experience.
- Assisting students in the finding and appraising of datasets.
- The library supports software such as Cloudstor, Stash and eNotebooks which house different kinds of data.



Data Visualisation can...

- **Communicating the findings of research**
- **Managing with oversized datasets that can't be read in the traditional way**
- **Showing relationships**
- **Revealing patterns and outliers that you mightn't have noticed otherwise**



What the library has done with data so far...

- Data team and a dedicated data librarian
- Workshops, classes and consultations
- Support for Stash, Cloudstor, eNotebooks
- Open Access and eScholarship
- Reshub sessions – data visualisation

The screenshot shows the UTS Research Data Management website. At the top, there is a search bar labeled "Search Library Collection..." with a magnifying glass icon. Below the search bar, the main heading is "Research Data Management". The page is organized into several sections:

- Services and Help:** Getting started and finding help with your data.
- Research Data Management Plan (RDMP):** Create a data management plan in Stash.
- Manage and Store Data:** Maintain the quality of your data through best management and storing practices.
- Archiving Research Data:** Archive your data during and after research.
- Publish and Share Data:** Publishing data helps promote transparency, reproducibility and the validation of research methods.
- Find and Reuse Data:** Build your research by finding and reusing other data.
- Text and Data Mining of Publications:** A list of available sources for text and data mining (TDM) publications.

On the right side, there is a sidebar menu under the heading "Research". The menu items are:

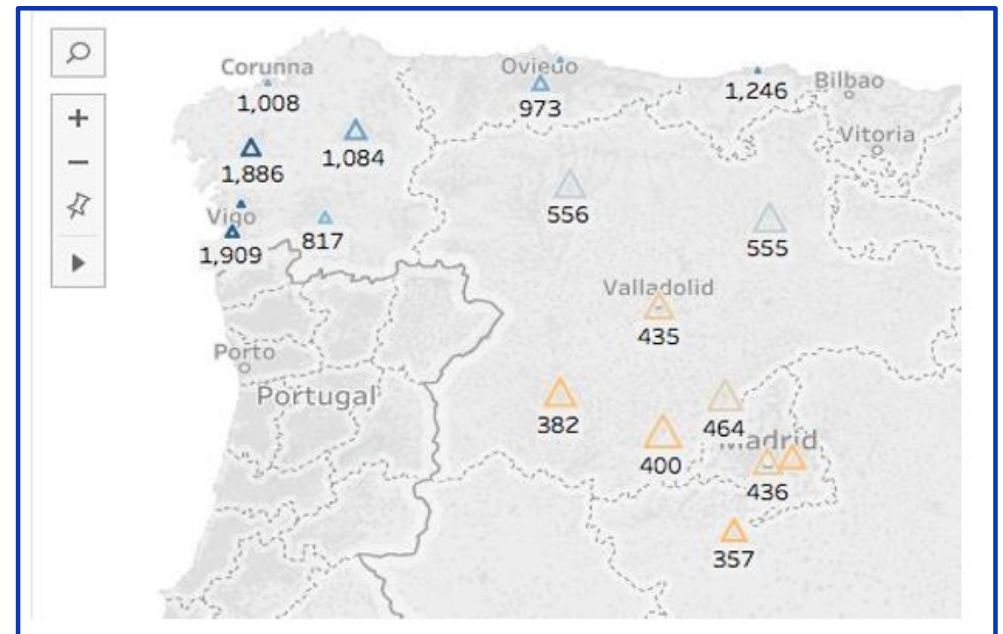
- Copyright
- Getting Started
- HeadsUp:Researchers
- Literature Searching
- Organising and Managing Information
- Theses
- Tools
- Writing
- Publishing and Metrics
- Research Data Management
 - Research Data Management Plan (RDMP)
 - Archiving Research Data
 - Find and Reuse Data
 - Manage and Store Data
 - Publish and Share Data

Approaches - Data visualization as a storytelling mechanism

Tableau Public example - The Rain in Spain

The heights of Spanish cities and their rainfall - tried to see if the rain falls mainly on the plain

(It turns out it doesn't really - it tends to fall on the coast)



A story in three parts:



How to Data Vis

- Skills needed for data visualisation
- Software Options
- Library experiments
- About Power BI



How to PowerBI

- Dabbling with a historical dataset
- Visualisation Types
- Configuring Types
- Slicers
- Maps

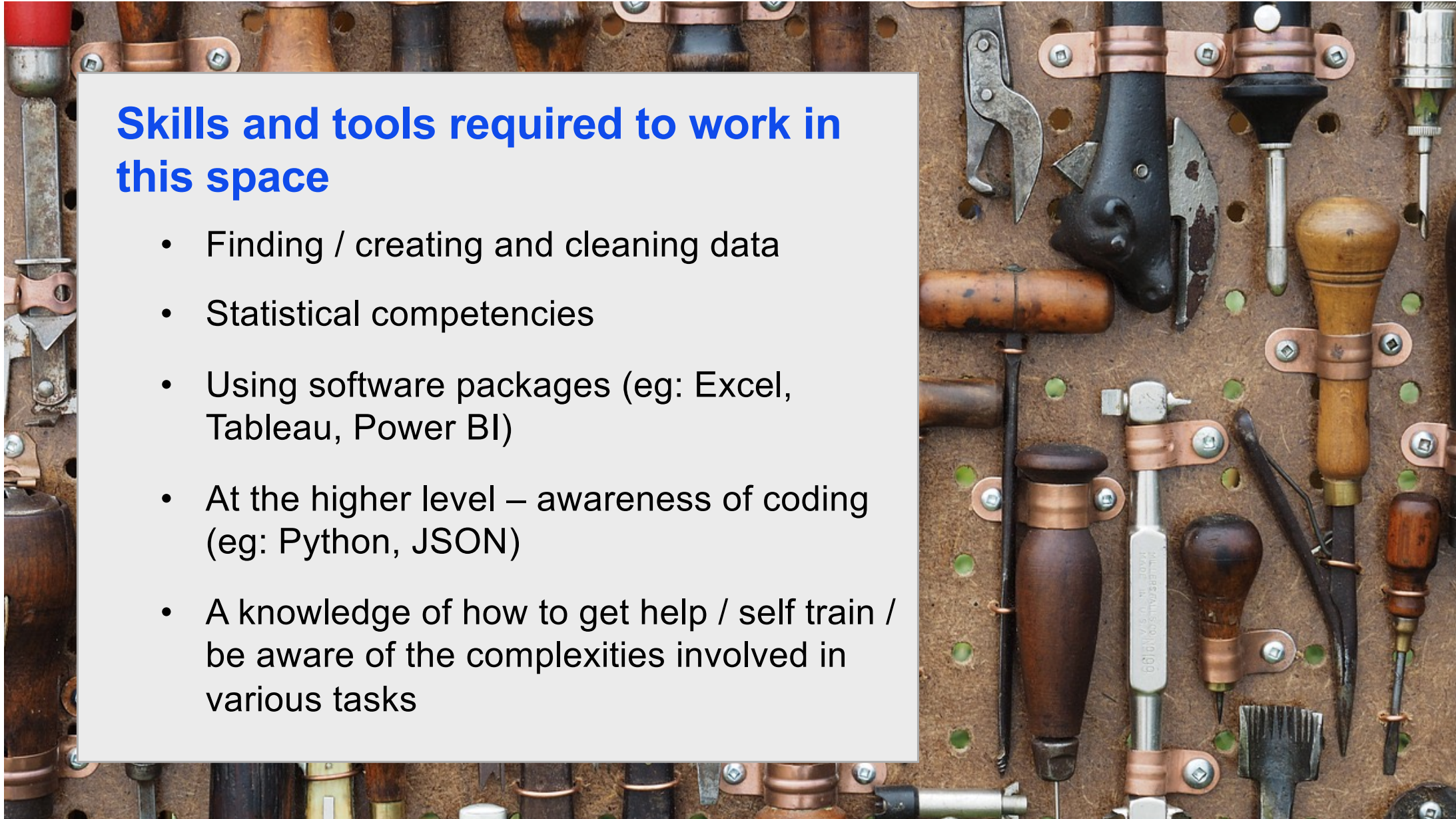


How we got there

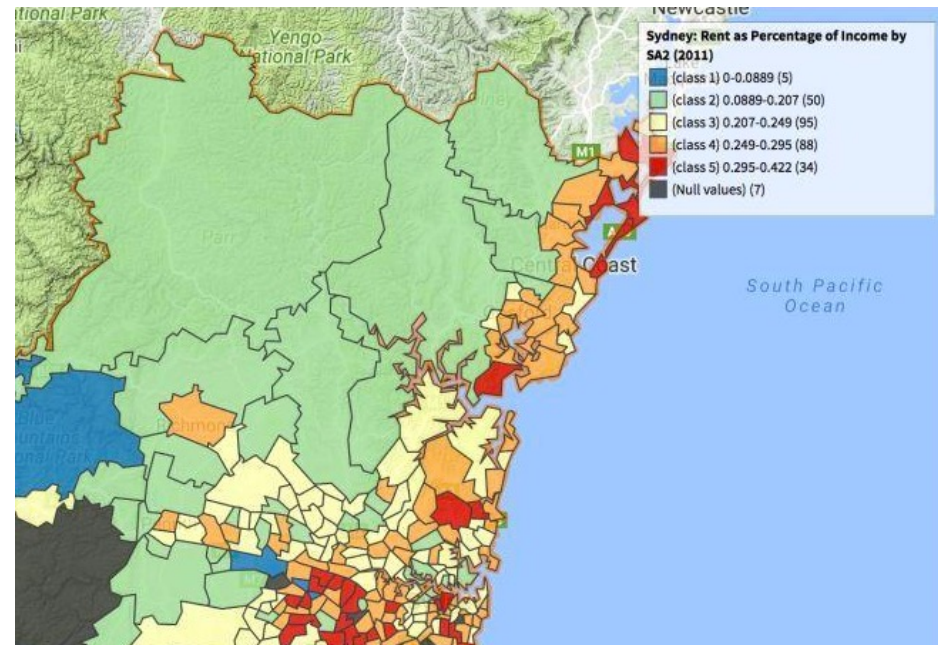
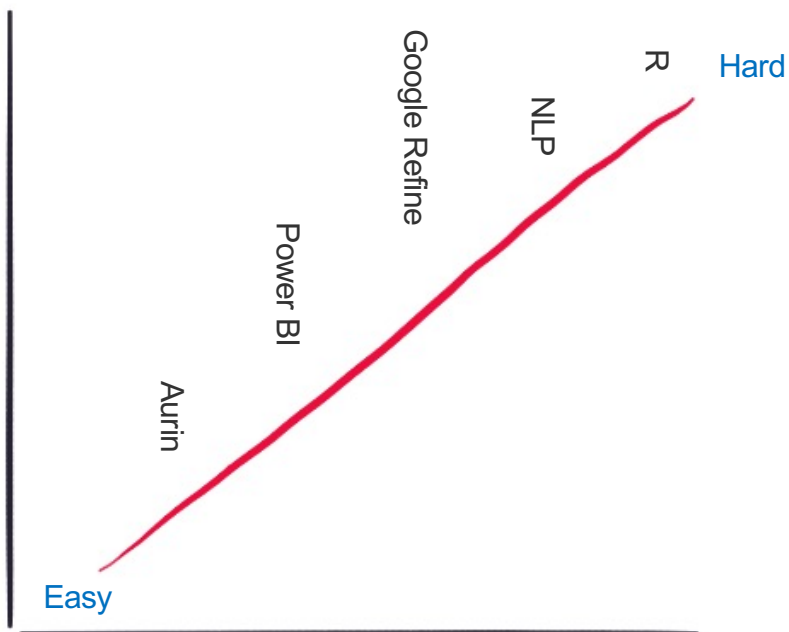
- Geographic Data in historical datasets
- Cleaning and preparing datasets
- Constraints and Applications

Skills and tools required to work in this space

- Finding / creating and cleaning data
- Statistical competencies
- Using software packages (eg: Excel, Tableau, Power BI)
- At the higher level – awareness of coding (eg: Python, JSON)
- A knowledge of how to get help / self train / be aware of the complexities involved in various tasks



In terms of the tools we are presenting today (and the nature your project) the ease of use ranges from..

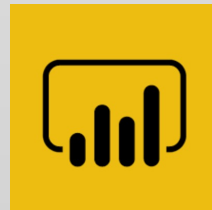


Desktop softwares (easy to middling)



Excel 2016

- * Free to enrolled staff and students
- * Is familiar to many
- * Creates charts without hassle
- * 2016 can also do mapping and more advanced 'Power Queries'



Power BI

- * Free to enrolled staff and students
- * Can import data from a variety of web sources and file types
- * Easier than Tableau in some ways, but not always as configurable



Tableau Academic

- * Free to enrolled staff and students
- * Lets you control the look of a visualisation really well
- * Works better if you understand pivot tables

About Power BI

The Official Blurb

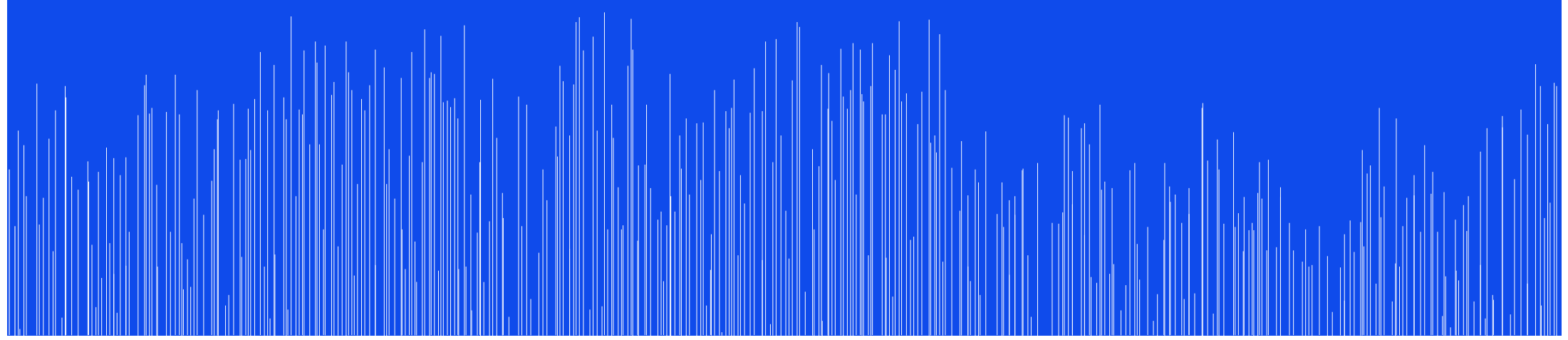
Power BI is a business analytics solution that lets you visualize your data and share insights across your organization, or embed them in your app or website. Connect to hundreds of data sources and bring your data to life with live dashboards and reports.

For Our Purposes

Data visualisation software that allows you to easily prepare and clean data and create visualisations that are easy to tinker with and share, without advanced coding/data wrangling skills.



Let's do it.



A top-down view of a circular library shelf filled with books. The books are arranged in concentric circles, creating a radial pattern. The spines of the books are visible, showing various titles and colors. A central grey rectangular box contains the text "From Data to Visualisation" in blue. The books are organized by subject, with some titles like "Encyclopedia of Forest Sciences" and "Engineering Companion" visible. The overall scene is a dense collection of knowledge, with the circular arrangement suggesting a comprehensive or cyclical nature of the information.

From Data to Visualisation



What kind of data is good for PowerBI?

- “Business Intelligence” – Ledgers, lists, directories.
- Data that has categories.
- Data that has latitude and longitude pairs (historical locations).

From Data to Visualisation

- Deciding what to keep
- Assigning types to the data that remains
- Removing Columns
- Splitting or merging columns
- Merging columns with concatenate function;
`=CONCATENATE(K7&" "&L7)`
- Removing rows (blank latitude/longitude)
- Adding categories in Excel with array functions.
`=INDEX(category1,MATCH
(TRUE,ISNUMBER(SEARCH(keyword1,M4)),0))`



Cheats that I did and other people shouldn't do

- Removes blank latitude/longitude rows.
- Didn't check the latitude or longitude to see if it was accurate.
- Didn't think about mines and shafts and multiple locations/duplicates.
- Didn't consult anybody about what the data was (a librarians as SLQ would have helped me).
- Created arbitrary categories not based on a research question.



Where to from here?

- Lynda course – PowerBI Desktop
- Intersect Training run by eResearch
- Consultations with our Data librarian.



Thank you

lib.uts.edu.au

UTS CRICOS PROVIDER CODE: 00099F



Library