

# u3a Computing Group

Alan Hopwood, 6 July 2023

# Agenda



Welcome

Current News, Issues and Questions

Spreadsheet Refresher

Example: A graphical representation of medical records

Example: An analysis of (a huge amount of) tidal data for Weymouth flooding predictions

Example: An accounting programme allowing classification of transactions

Example: A domestic gas consumption and costing spreadsheet

AOB and Follow up

# Future Topics

Topic	Votes
Artificial intelligence /neural networks	4
Streaming - the best way to go	4
Computer languages - functionality vs ease of use	4
Laptop vs Tablet	4
Microchip design	2
Being safe on the internet	2
History of computer development	2
Bluetooth	1
Digital communications / information encoding	1
Chromebook	1
Mac vs Windows vs Linux	1
Printing from an Android tablet	1

# Presentation Spreadsheet Refresher

# Spreadsheet History

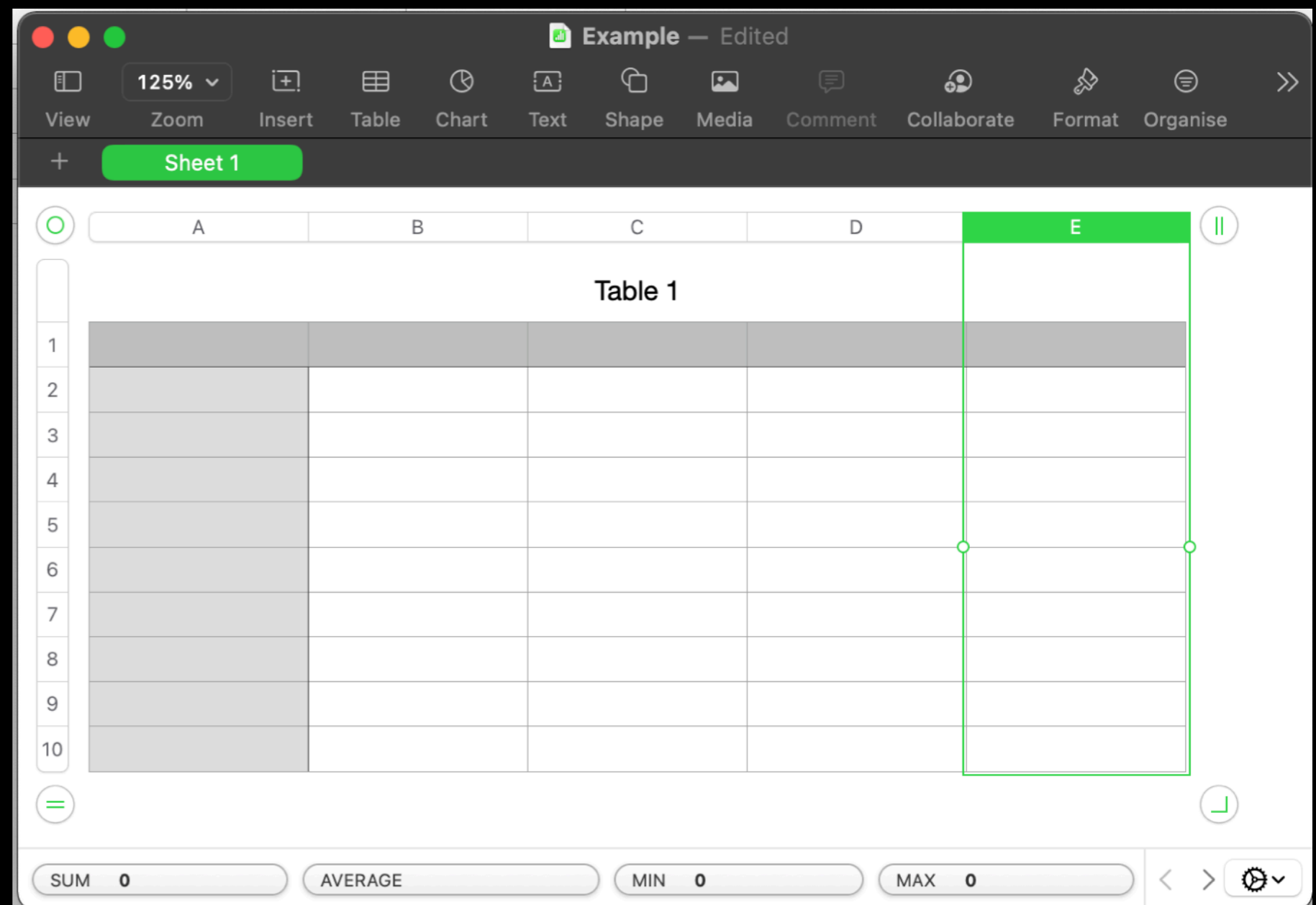
## Spreadsheet refresher

- We have organised data into tables, grids of columns and rows since at least 1800 BC (Babylonian clay tablets)
- A number of mainframe based spreadsheet type programs.
- The first widely known spreadsheet program was VisiCalc for the Apple II (1979)
  - “If VisiCalc had been written for some other computer [than the Apple II] you would be interviewing someone else right now.”  
— Steve Jobs,
- Then came SuperCalc, Lotus 1-2-3 ....
- Microsoft released Excel in 1985 and gradually dominated
- Currently available: Excel, Google Sheets, LibreOffice Calc, Apple Numbers, OpenOffice .....

# Tables, Cells, Rows and Columns

## Spreadsheet refresher

- A spreadsheet is a table of cells laid out in rows and columns:



# Information in Cells

## Spreadsheet refresher

The screenshot shows a spreadsheet application window titled "Example - Edited". The interface includes a top menu bar with options: View, Insert, Table, Chart, Text, Shape, Media, Collaborate, Format, and Organise. Below the menu bar, there are tabs for "Sheet 1" and "Table". The "Table" tab is active, and a "Cell" format menu is open, showing various data format options. The spreadsheet itself contains a table with the following data:

Table 1		
1		
2		
3	100	100.00
4	Fred	Fred
5	6/7	6 July 2023
6		
7		
8		
9		
10		

The "Data Format" menu is open, showing the following options:

- Automatic
- Number
- Currency
- Percentage
- Fraction
- Numeral System
- Scientific
- Text
- Date & Time
- Duration
- Tickbox
- Star Rating
- Slider
- Stepper
- Pop-Up Menu
- Create Custom Format...

- Each cell can contain information
- The type of information is defined either by you or automatically
- E.g.:
  - Number
  - Currency
  - Text
  - Date & Time
  - Duration

# formula & Functions

## Spreadsheet refresher

The screenshot shows a spreadsheet application window titled "Example - Edited". The interface includes a menu bar with options like View, Insert, Table, Chart, Text, Shape, Media, Collaborate, Format, and Organise. A "Sheet 1" tab is active. A table titled "Table 1" is visible, with columns A, B, and C. The data in the table is as follows:

	A	B	C
1			
2			
3		2	2
4		3	3
5		8	8
6		5	5
7			18
8			
9			
10			

A formula bar is open, showing the formula  $\text{SUM}(B3:B6)$  and the result 18. The formula bar also includes a dropdown for the function name (SUM) and a range selector (B3:B6). A red 'X' and a green checkmark are visible next to the formula bar.

The "Functions" panel is open, showing a search bar and a list of functions categorized by type:

- All: ROUNDUP
- Recent: SERIESSUM, SIGN
- Date and Time: SQRT
- Duration: SQRTPI
- Engineering: SUBTOTAL
- Financial: SUM
- Logical & Info: SUMIF
- Numeric: SUMIFS
- Reference: SUMPRODUCT
- Statistical: SUMSQ
- Text: SUMX2MY2
- Trigonometric: SUMX2PY2

The "SUM" function is highlighted, and its description is shown below:

**fx SUM**  
The SUM function returns the sum of a collection of numbers.  
You can learn more about SUM and see in-depth examples in the Formulas and Functions Help. To open the Formulas and Functions Help on your Mac, click the Help menu in the menu bar, then choose "Formulas and

Cells can also contain a formula and display the formula results

- All the normal numeric functions
  - logic statements
  - Look up and reference
  - manipulate text, dates and time.
- ...hundreds



# Wrap up

## Spreadsheet refresher

- All spreadsheet programs are quite similar
- All the normal cut and past, formatting type capability.
- Can be kept simple or built up into very complex systems (an Excel Workbook can contain multiple spreadsheets as tabs, with cross referencing.)

# And now the Examples

The examples were shown on screen directly from Excel and are not available as part of the presentation.