

Databases in spreadsheets

Anna Goncharova

What is a spreadsheet?

- Spreadsheet software is a software application capable of organizing, storing and analyzing data in tabular form, i.e. a table with rows and columns.
- Each cell might contain data entered by the spreadsheet user or generated by the formulas that can calculate values based on the contents of other cells in an automated manner
- Historically originated from paper spreadsheets
- Commonly known examples include Microsoft Excel and Google Spreadsheets



Google Spreadsheet

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

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fx

	A	B	C	D	E	F
1	First name	Last name	Slate	City	Street Address	Join date
2	Ann	Cold	WI	Springfield	7 J Dr.	2/2/1990
3	Bob	New	NC	Sit	1411 Lincoln St.	7/10/2015
4	Ardo	Toothache	DE	Blob	787 An Tw	12/1/1960
5	JJ	Key	AK	Tilly	1 Kool-aid St.	11/25/2017
6	Po		7 HI	Boston	55 Globe	2/13/1990
7	Ill	Jeans	ND	Tub	1000 Broadway	8/8/2005
8	Gob 3 4	Poll	KY	Tab	2219 Lake Ave.	1/6/1963
9						
10						
11						
12						

+ Secret Public



Databases vs spreadsheets

1.Data storage:

- In spreadsheets, the data storage is cell-focused
- In databases, generally record-focused
- More efficient data storage in databases allows for higher volumes of information to be stored and manipulated
- Databases generally allow for a higher variety of data types
- It is currently possible to imitate a relational database functionality with Excel

Databases vs spreadsheets

2. Displaying data:

- single view in spreadsheets
- data can be isolated and arranged in different ways when querying a database

3. Integrity:

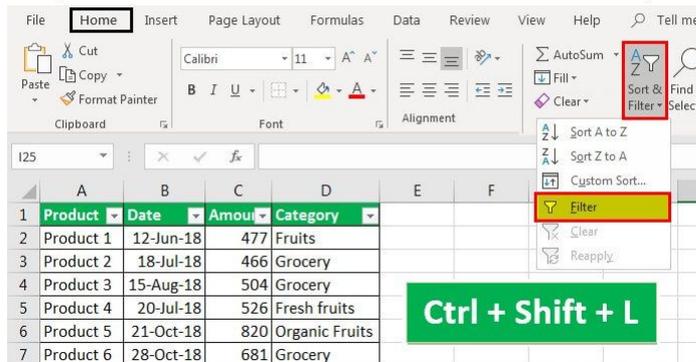
- databases can provide built-in integrity constraints
- have a list of authorized users

Databases vs spreadsheets

4.Sorting and filtering:

- Databases provide higher versatility de to a large number of combinations of statements like SELECT, ORDER BY, GROUP BY
- Spreadsheets have limited capabilities in terms of how we can manipulate existing data

Filter Column in Excel



The screenshot shows the Microsoft Excel interface. The 'Home' tab is selected in the ribbon. The 'Filter' button is highlighted in the ribbon. Below the ribbon, a data table is visible with columns A through F. The table has a header row with filter arrows on each column. The data rows are as follows:

	Product	Date	Amou	Category		
1	Product 1	12-Jun-18	477	Fruits		
2	Product 2	18-Jul-18	466	Grocery		
3	Product 3	15-Aug-18	504	Grocery		
4	Product 4	20-Jul-18	526	Fresh fruits		
5	Product 5	21-Oct-18	820	Organic Fruits		
6	Product 6	28-Oct-18	681	Grocery		

Ctrl + Shift + L

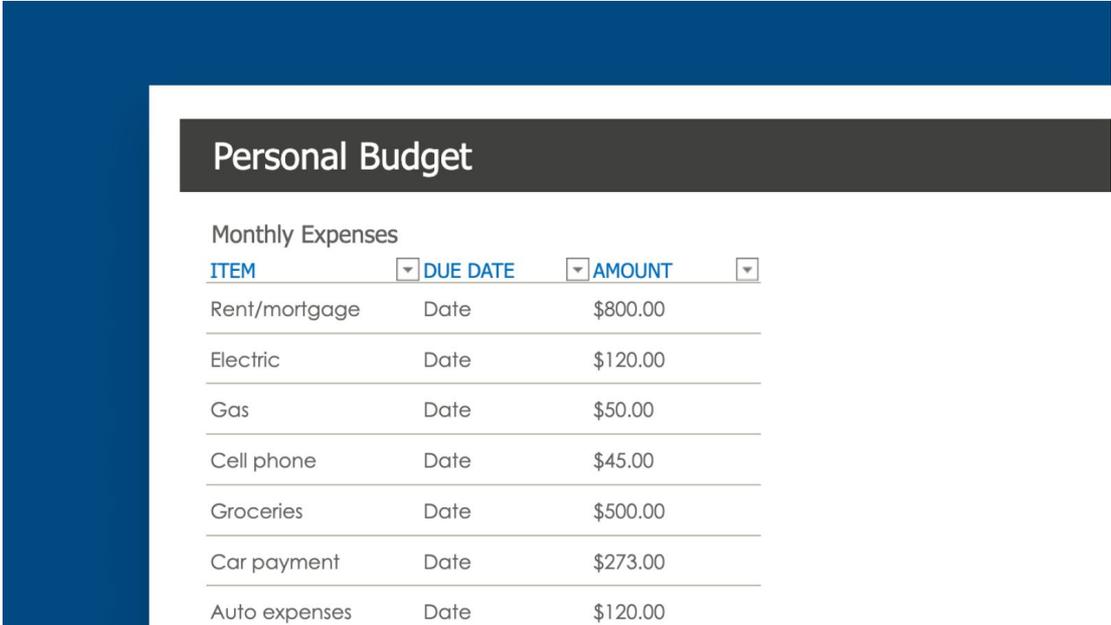
Why use spreadsheets then?

- With all of the limitations of spreadsheets, they have one big advantage – spreadsheets are user-friendly!
- Excel is reported to be learnt in a few days
- Intuitive
- Do not require understanding of programming-related concepts from the user
- Good for personal use
- Include data visualization tools



Spreadsheet use in real world

- Budgeting (wages, personal budgeting, financial planning)
- Microsoft Office offers free Excel budget templates for personal and office use

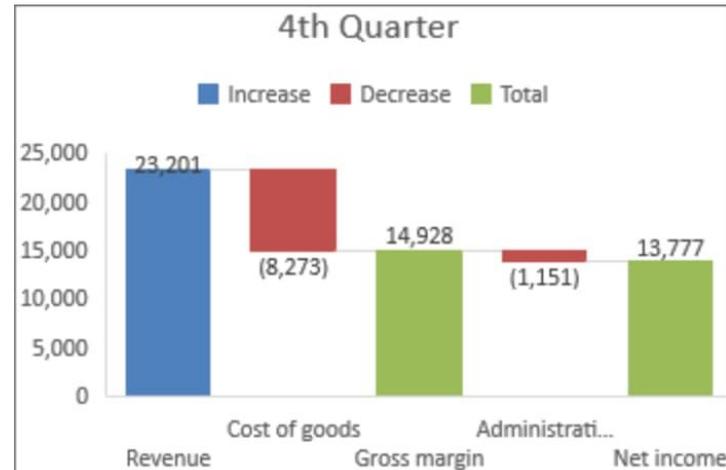


The image shows a screenshot of a 'Personal Budget' spreadsheet template. The title 'Personal Budget' is displayed in a dark grey header. Below the title, the text 'Monthly Expenses' is centered. A table follows with three columns: 'ITEM', 'DUE DATE', and 'AMOUNT'. Each column has a dropdown arrow next to its header. The table lists several expense categories with their corresponding due dates and amounts.

ITEM	DUE DATE	AMOUNT
Rent/mortgage	Date	\$800.00
Electric	Date	\$120.00
Gas	Date	\$50.00
Cell phone	Date	\$45.00
Groceries	Date	\$500.00
Car payment	Date	\$273.00
Auto expenses	Date	\$120.00

Spreadsheet use in real world

- Extremely popular in business: aids in accounting, inventory tracking, managing time logs and more without hiring someone trained to work with SQL or other databases
- The small volume of information that a lot of businesses operate makes Excel a better choice for them



Sources

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