

A stylized illustration in shades of brown and orange. It depicts a robotic arm with a tablet screen. The tablet shows various icons: a grid, a flower, a document, a circuit board, and a shopping cart. The arm is connected to a base with a circular logo.

Excel

Table Operations

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1. Introductions
2. Table structure
3. Sorting
 1. Customised Sorting
 1. Customised Sorting by list
4. Convert text into columns
5. Remove Duplicates
6. Data Validation
 1. Defining rules for data validation
7. Consolidate
8. Subtotal
9. Import external data
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Introduction

Obtain

Treat

Manage

Analyse

Tools

- Sort
- Convert text to columns
- Duplicate Removal
- Data validation
- Consolidate
- Subtotal

Table structure

Columns or Fields: represent a type of data (e.g.: codes, names, prices, ...)

Labels or Headers: Names to identify each column (must be unique)

Rows or Registries: set of related data that describe something together

Fundamentos III.xlsx

	A	B	C	D
	Loja	Região	Quantidade	Valor Vendas
1				
2	Lisboa	Sul	56	4.408,00 €
3	Setúbal	Sul	80	880,00 €
4	Setúbal	Sul	80	2.800,00 €
5	Lisboa	Sul	91	3.822,00 €
6	Setúbal	Sul	107	4.494,00 €
7	Lisboa	Sul	114	5.596,00 €
8	Porto	Norte	55	3.365,00 €
9	Porto	Norte	66	4.982,00 €
10	Aveiro	Centro	59	2.416,00 €
11	Coimbra	Centro	65	2.512,00 €
12	Coimbra	Centro	74	2.628,00 €
13	Aveiro	Centro	77	3.234,00 €
14				
15				

Labels / Headers

Row / Registry

Column / Field

Operações

Sorting

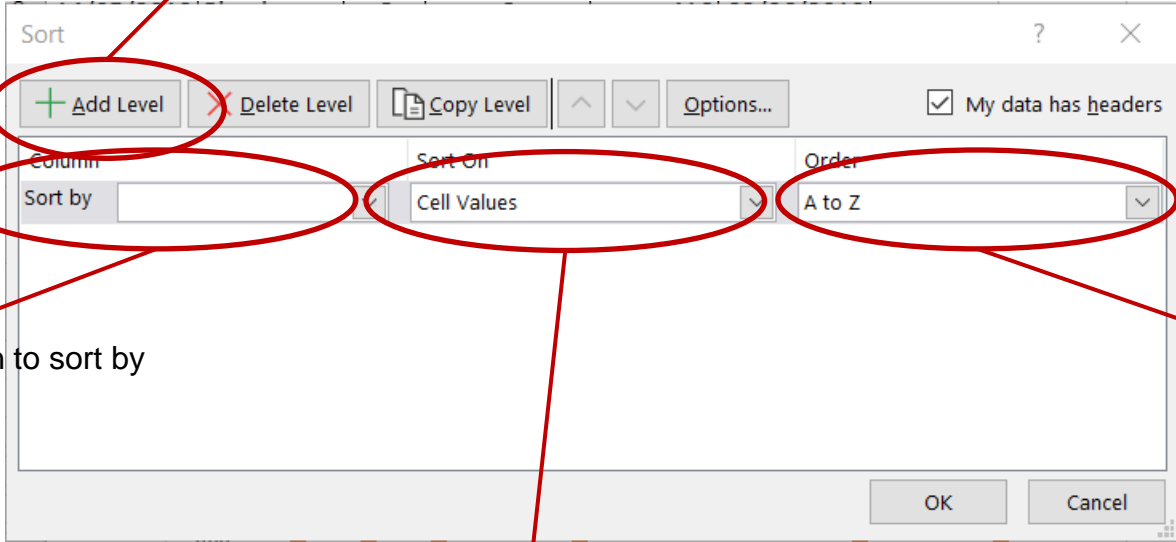
Reorganise data according to an ascending/descending sorting criteria on the data in one or more columns

How to:

1. Select the table
2. Tab: Home > Group: Editing > Command: Sort & Filter
 1. Sort A to Z (ascending order of the 1st column)
 2. Sort Z to A (descending order of the 1st column)
 3. Custom sort... (other types of sorting, or sorting by other columns)

Custom Sort

Add sort criteria



Choose column to sort by

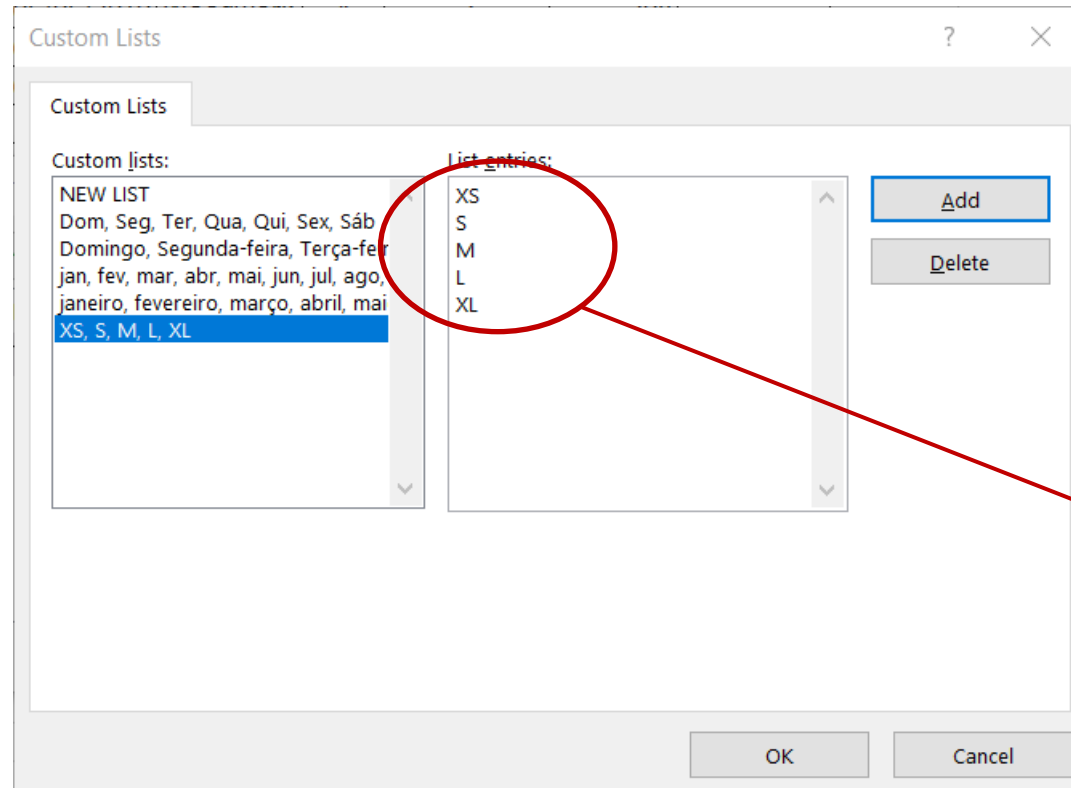
Choose sorting type:

- Cell Values
- Cell Colour
- Font Colour
- Conditional Formatting Icon

Choose order:

- A to Z / ascending
- Z to A / descending
- Custom List...

Custom List Sorting



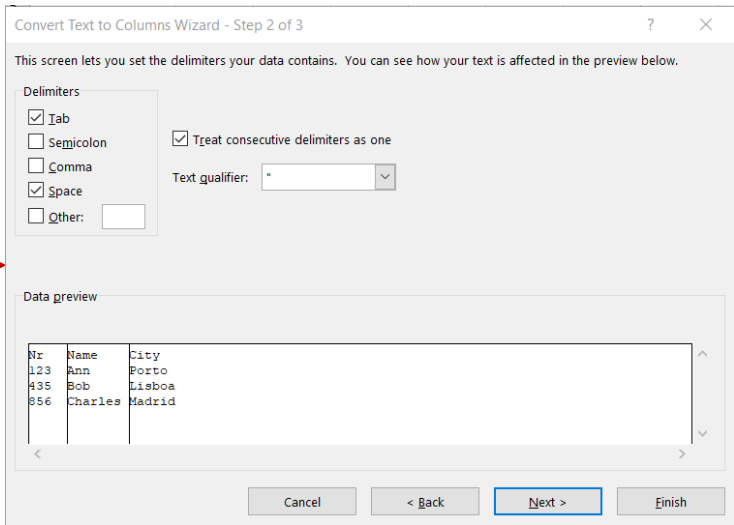
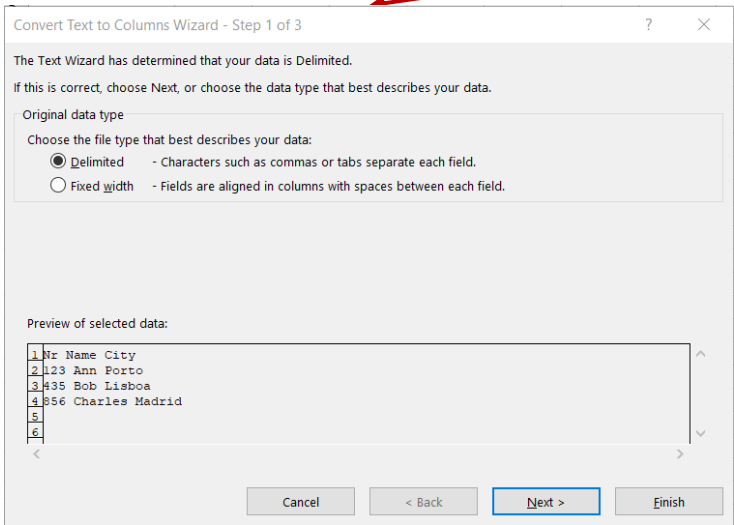
Values to consider
for the sorting

Convert text to columns



	A	B	C	D
1	Nr	Name	City	
2	123	Ann	Porto	
3	435	Bob	Lisboa	
4	856	Charles	Madrid	

Tab “Data” >
Group “Data Tools” >
Command “Text to Columns”



	A	B	C	D
1	Nr	Name	City	
2	123	Ann	Porto	
3	435	Bob	Lisboa	
4	856	Charles	Madrid	

Duplicate Removal



	A	B	C
1	Month	Store	Value
2	January	Braga	115
3	January	Porto	130
4	January	Lisboa	115
5	January	Braga	95
6	January	Porto	130

Tab “Data” >
Group “Data Tools” >
Command “Remove Duplicates”

Remove Duplicates

To delete duplicate values, select one or more columns that contain duplicates.

Select All Unselect All My data has headers

Columns

- ☒ Month
- ☐ Store
- ☐ Value

OK Cancel

Microsoft Excel

4 duplicate values found and removed; 1 unique values remain.

OK

	A	B	C
1	Month	Store	Value
2	January	Braga	115
3			

Remove Duplicates

To delete duplicate values, select one or more columns that contain duplicates.

Select All Unselect All My data has headers

Columns

- ☐ Month
- ☒ Store
- ☐ Value

OK Cancel

Microsoft Excel

2 duplicate values found and removed; 3 unique values remain.

OK

	A	B	C
1	Month	Store	Value
2	January	Braga	115
3	January	Porto	130
4	January	Lisboa	115
5			

Remove Duplicates

To delete duplicate values, select one or more columns that contain duplicates.

Select All Unselect All My data has headers

Columns

- ☒ Month
- ☒ Store
- ☐ Value

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Microsoft Excel

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Microsoft Excel

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	A	B	C
1	Month	Store	Value
2	January	Braga	115
3	January	Porto	130
4	January	Lisboa	115
5	January	Braga	95
6			

Data Validation



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How to:

1. Select the cell where the rule is to be introduced
2. Tab "Data" >
3. Group "Data Tools" >
4. Command "Data Validation"

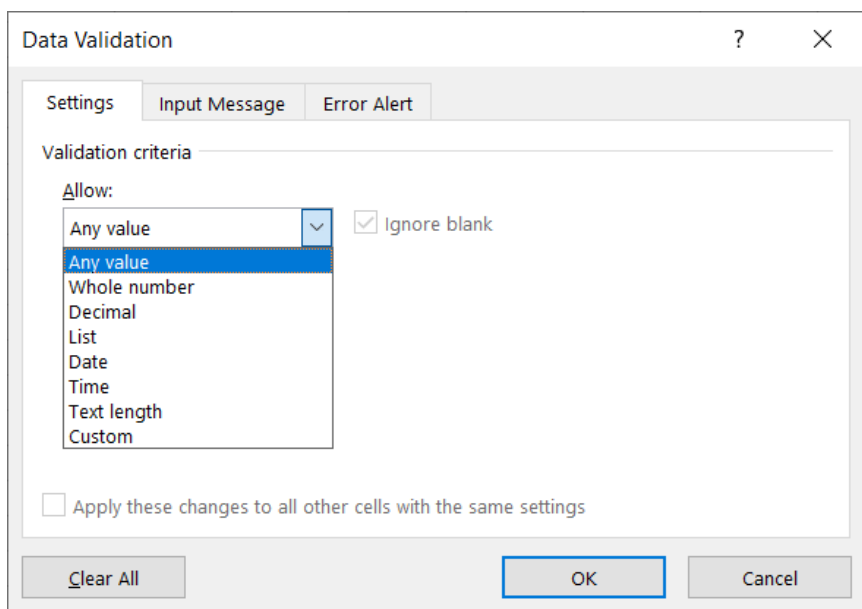
Define the **input**

message: information to be shown to guide in the data insertion

Define a set of rules that should be respected when data is inserted to the cells

Define **error alert**: message shown when the data inserted does not respect the defined rule

Define cell validation rules



- **Any value:** deactivate any validation rule
- **Whole number:** only whole numbers can be inserted
 - Allows the definition of other criteria (>, <, between, ≠, ...)
- **Decimal:** only decimal numbers can be inserted
 - Allows the definition of other criteria (>, <, between, ≠, ...)
- **List:** define a list of allowed values
- **Date:** only dates can be inserted
- **Time:** only times can be inserted
- **Text length:** allowed text up to X characters
- **Custom:** define a logical formula to verify allowed values

Example: only positive whole numbers are allowed

Data Validation

Settings Input Message Error Alert

Validation criteria

Allow: Whole number ☒ Ignore blank

Data: greater than

Minimum: 0

☐ Apply these changes to all other cells with the same settings

Clear All OK Cancel

Data Validation

Settings Input Message Error Alert

☒ Show input message when cell is selected

When cell is selected, show this input message:

Title: Quantity

Input message: Only positive whole numbers are allowed

Clear All OK Cancel

Data Validation

Settings Input Message Error Alert

☒ Show error alert after invalid data is entered

When user enters invalid data, show this error alert:

Style: Stop

Title: Quantity

Error message: The inserted value is not a positive whole number

Clear All OK Cancel

	A	B	C
1	Product	Quantity	
2			
3			
4			
5			
6			
7			

Quantity
Only positive
whole numbers
are allowed

	A	B	C	D	E
1	Product	Quantity			
2		x			
3					
4					
5					
6					
7					
8					

Quantity

The inserted value is not a positive whole number

Retry Cancel Help

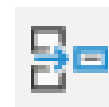
	A	B	C	D	E
1	Product	Quantity			
2		-3			
3					
4					
5					
6					
7					
8					

Quantity

The inserted value is not a positive whole number

Retry Cancel Help

Consolidate data



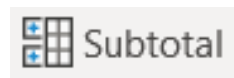
Create, in a single place, a summary map of data in several sources (cells, sheets, workbooks)

The data must have the same structure and/or labels in all sources

How to:

1. Open the workbooks that contain the desired information
2. Define and select in a sheet the blank area where the consolidated data is to be inserted
3. Tab “Data” > Group “Data Tools” > Command “Consolidate”
4. Fill the dialog
 1. **Function:** type of consolidation operation to perform (sum, count, average, minimum, product, count numbers, standard deviation, variance)
 2. **Reference:** for each of the data sources, insert or select the range of cells containing the data and click “Add”
 3. **All references:** shows all the references added. Allows deleting references.
 4. **Use labels in:** (optional) define if the ranges have labels on the 1st row or 1st column
 5. **Create links to source data:** define if a link should be created
 6. Ok

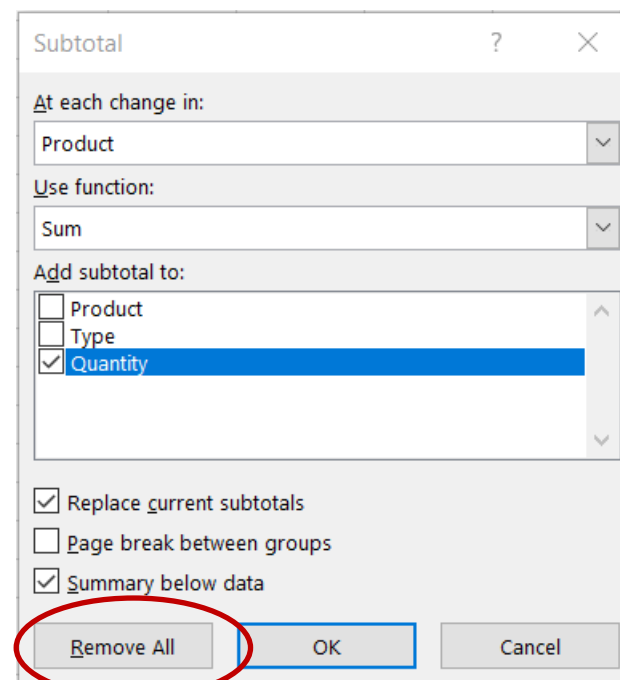
Subtotals



Automatically generate a summary on the table through the presentation of partial or global totals obtained mathematically or statistically

How to:

1. Select the table
2. Sort the table according to the subtotal wished
3. Tab “Data” > Group “Outline” > Command “Subtotal”
4. Fill the dialog
 - **At each change in:** column to group the data by
 - **Use function:** function to apply to the column where the subtotals are to be obtained
 - **Add subtotal to:** column(s) where the subtotal is to be applied
 - **Replace current subtotals:** remove subtotals created previously
 - **Page break between groups:** insert breaks
 - **Summary below data:** if not selected, the summary will be presented above the data



Remove all subtotals on the selected cells

Subtotal results (levels)

1	2	3		A	B	C
	1			Product	Type	Quantity
+	13				Grand Total	39

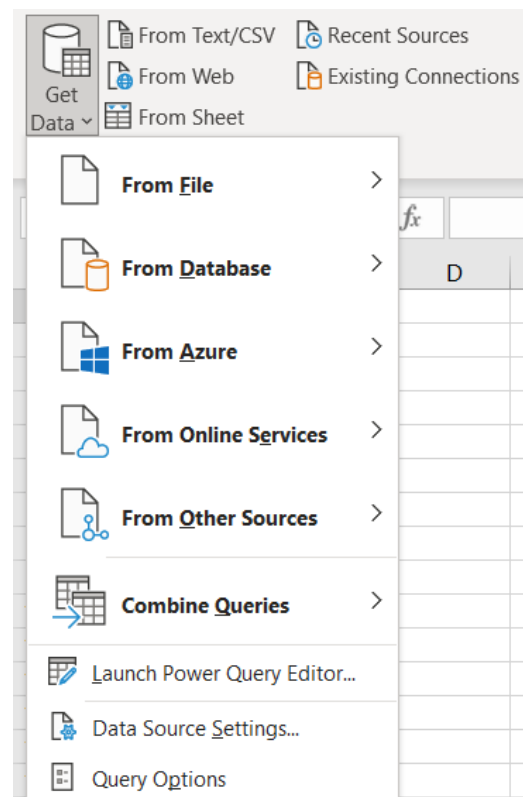
1	2	3		A	B	C
	1			Product	Type	Quantity
+	5				Fresh Total	11
+	8				Dry Total	10
+	12				Other Total	18
-	13				Grand Total	39

1	2	3		A	B	C
	1			Product	Type	Quantity
	2			Potatoes	Fresh	3
	3			Onions	Fresh	3
	4			Broccoli	Fresh	5
-	5				Fresh Total	11
	6			Rice	Dry	7
	7			Flour	Dry	3
-	8				Dry Total	10
	9			Cookies	Other	6
	10			Chocolate	Other	5
	11			Candy	Other	7
-	12				Other Total	18
-	13				Grand Total	39

Importing external data

Avoid manually inserting values

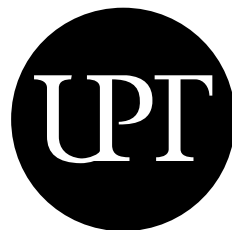
Tab “Data” > Group “Get & Transform Data” >



Importing text files

How to:

1. Tab “Data” > Group “Get & Transform Data” > Command “Get Data” > From File > From Text/CSV
2. Choose the file to import
3. Fill the delimiter (if needed)
4. Click “Transform Data”
5. Edit the parameters (if needed)
6. Click “Close & Load”



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Do conhecimento à prática.