# Data types for data science

INTERMEDIATE SPREADSHEETS



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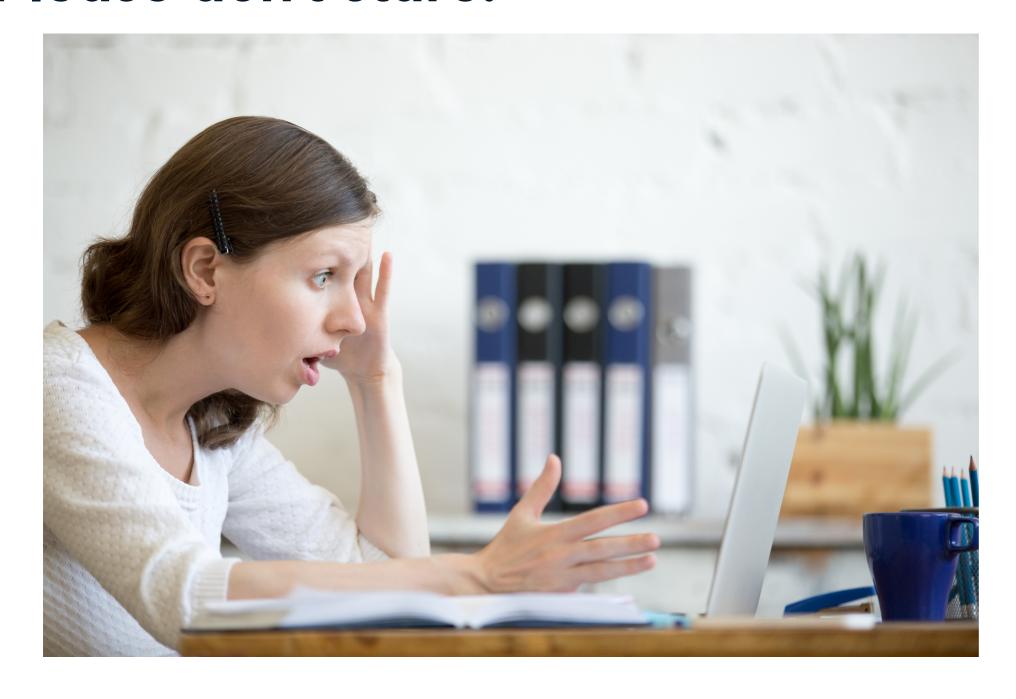
### Calculating the mean, badly

fx	=			
	A	В	С	D
1	49.53669111			00.0
2	7.42453201	A1:A5)		#+2
3	63.47273292 A			Enter
4	28ress4Teh2then	n ↑/↓ to select sug	gestions	×
5	15.57589729			
6 ?	=[			

### What went wrong?

	A
1	49.53669111
2	7.42453201
3	63.47273292
4	28.37423 <b>I</b> 27
5	15.57589729
6	34.00246333

#### Please don't stare!



### The 4 common data types

- Numbers (123.456)
- Text ("Hello!")
- Dates (1900-02-29)
- Logical (TRUE)

### ISNUMBER() checks if a cell contains a number

	A	В	С
1	Value	Command	Result
2	9.869604	=ISNUMBER(A2)	TRUE
3	Data science is fun!	=ISNUMBER(A3)	FALSE

### Other "IS" functions for checking types

- ISTEXT() checks for text.
- ISDATE() checks for dates and times.
- ISLOGICAL() checks for TRUE and FALSE.

### Checking cell properties and rarer types

- ISURL() checks if text is web URL.
- ISFORMULA() checks if the cell contains a formula.

### Copying formulas between cells

fx	=ISNUMBER(A1)						
	A	В	С	D	E	F	G
1	Mersenne	3	seven	31	127	8 191	131,071
2	FALSE						

Drag the bottom-right corner of the cell to copy. Alternatively,

- to copy right, use CTRL + R (CMD + R on macOS).
- to copy down, use CTRL + D (CMD + D on macOS).

## Let's go! INTERMEDIATE SPREADSHEETS



### Convert or die!

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### Formatting numbers

	A	В	С	
1	Value	Command	Result	
2	1.234	=TO_DOLLARS(A2)	\$1.23	
3		=TO_PERCENT(A2)	123%	

### Converting text to numbers

	A	В	С
1	Value	Command	Result
2	'1.23	=ISTEXT(A2)	TRUE
3		=N(A2)	1.23
4		=ISNUMBER(C3)	TRUE

### Converting logicals to numbers

	A	В	С	
1	Value	Command	Result	
2	TRUE	=N(A2)	1	
3	FALSE	=N(A3)	0	

### Converting units of numbers

	A	В	С
1	Value	Command	Result
2	1000	=CONVERT(A2, "ft^2", "m^2")	92.90304

### Summary

- T0\*() functions format numbers.
- N() changes text to numbers.
- IF(logical, 1, 0) changes logicals to numbers.
- CONVERT() changes the units of a number.

### Let's fix some data!

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