Lambda formulas in Excel

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KIND Learning Network

Welcome

- 🌶️🌶️ this session is for intermediate Excel users
- we'll get going properly at 13.05
- you'll need M365 Excel (either web or desktop) to follow along
  - earlier versions of Excel don't have the `LAMBDA` function that we'll need
  - you'll also need to be pretty fluent with formulas, and know a bit about naming things in Excel
- if you can't access the chat, you might need to join our Teams channel: **tinyurl.com/kindnetwork**
- you can find session materials at **tinyurl.com/kindtrp**

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The KIND network

- a social learning space for staff working with **k**nowledge, **i**nformation, and **d**ata across health, social care, and housing in Scotland
- we offer social support, free training, mentoring, community events, …
- Teams channel / mailing list

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Excel training sessions

Session	Date	Area	Level
Lookups in Excel	13:00-14:30 Thu 1st August 2024	Excel	🌶🌶 : **intermediate-level**
Relative, absolute, mixed, structured, and R1C1 references in Excel	15:00-16:00 Thu 8th August 2024	Excel	🌶🌶 : **intermediate-level**

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Session outline

- this session is based on our Excel skill-builder course
- quick introduction to lambda formulas
- `LAMBDA()`
- two practical examples
- use-cases, and tips for applications

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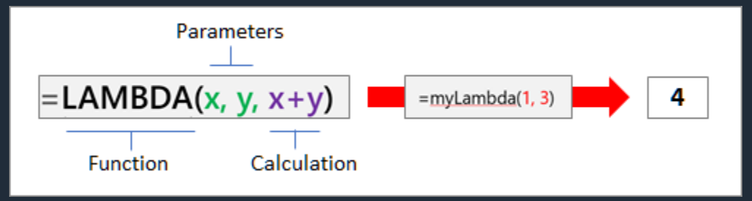
Introduction

- lambda formulas are a way of repeating complicated Excel formulas safely
- fairly new - M365 Excel only
- odd, rather than hard to implement

LAMBDA



1. take an existing formula
2. work out what the inputs are - usually, which cells are referenced
3. add one parameter per input
4. do a calculation with those parameters
5. name and save that formula

Making a lambda function (setup)

- put some random numbers in `A3` and `B3`
- we could calculate `A3 * B3` directly
- but imagine we want to convert `= A3 * B3` to a lambda

Making a lambda function

- start with the lambda outline in `D3`
  - `= LAMBDA()`
- next, add **test values in a second set of brackets**
  - `= LAMBDA()(A3, B3)`
- we now invent parameter names (like variable names) for each of those values, and add them
  - `= LAMBDA(n_1, n_2, )(A3, B3)`
- then add the formula that we want to replicate
  - `= LAMBDA(n_1, n_2, n_1 * n_2)(A3, B3)`

Saving a lambda function

- once you've tested and checked your lambda with a range of test values, copy your lambda formula (without the test values in the second brackets)
- then open the name manager (`Ctrl` + `F3`)
- create a new name, then name your lambda definition using the **New Name** interface
- paste your lambda into the **Refers to:** section
  - omit the test values - so just `= LAMBDA(n_1, n_2, n_1 * n_2)`
- test your new lambda function

A more complicated example setup

- a real-ish example: converting CHI to DoB
- put an example CHI into G2 (like `1610790854`)
- you can use the following (harrowing) formula: `=DATE(IF(RIGHT(LEFT(G2, 6), 2) > RIGHT(YEAR(TODAY()), 2), 19, 20) & RIGHT(LEFT(G2, 6), 2), MID(LEFT(G2, 6), 3, 2), LEFT(LEFT(G2, 6), 2))`

A more complicated example

- that’s a horrifying and risky thing to paste about, so we can make this into a lambda
- test version `=LAMBDA(chi, DATE(IF(RIGHT(LEFT(chi, 6), 2) > RIGHT(YEAR(TODAY()), 2), 19, 20)&RIGHT(LEFT(chi, 6), 2), MID(LEFT(chi, 6), 3, 2), LEFT(LEFT(chi, 6), 2)))(G2)`
- name manager then to `CHI_TO_DOB`

Use-cases, and tips for applications

- making workbooks less complicated
  - names and lambda formulas are a strong combo
- standardising (and user-proofing) complex formulas
- lambdas are local, so you need to think laterally to re-use them
  - make a new blank sheet, and right-click the sheet tab
  - `Move or Copy...` to new book

Feedback and resources

- please can I ask for some feedback - takes less than a minute, completely anonymous, helps people like you find the right training for them

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