How can I use the LAMBDA function in Google Sheets?

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The LAMBDA function in Google Sheets is a powerful tool that allows users to create their own custom functions. This feature allows for greater flexibility and efficiency in data analysis and manipulation. To use the LAMBDA function, users can define their own formula using the "Define" feature and then call the function using its designated name. This function can be used for a variety of tasks, such as performing calculations, filtering data, and manipulating text. By utilizing the LAMBDA function, users can streamline their spreadsheet tasks and improve overall productivity.

LAMBDA function

You can create and return a custom function with a set of names and a `formula_expression` that uses them. To calculate the `formula_expression`, you can call the returned function with as many values as the `name` declares.

Sample Usage

```
LAMBDA(Salary, Salary*0.3)(1000)
```

```
LAMBDA(Temp, (5/9)*(Temp-32))(85)
```

Syntax

```
LAMBDA(name, formula_expression)
```

`name`: The name to be used inside the `formula_expression`. This name must be an identifier and resolves to the actual value passed to the custom function returned by `LAMBDA`.`formula_expression`: The formula to be calculated. It uses names declared in previous parameters.

Notes

If a named function expects another function as an input in an argument inside a named function, you can use a `LAMBDA` or a named function.

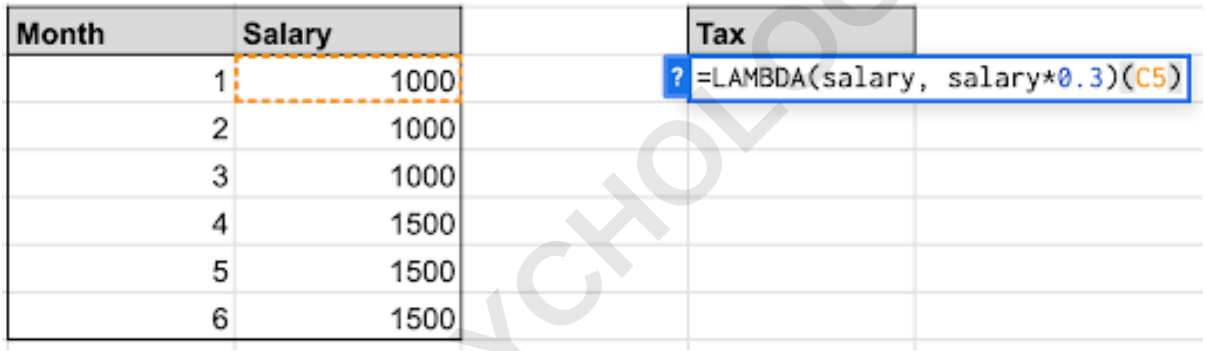
Examples

Example data:

Month	Salary
1	1000
2	1000
3	1000
4	1500
5	1500
6	1500

LAMBDA standalone

You can write a `LAMBDA` function to calculate salary tax, assuming that the tax rate is 30%. You input the salary value after the function.

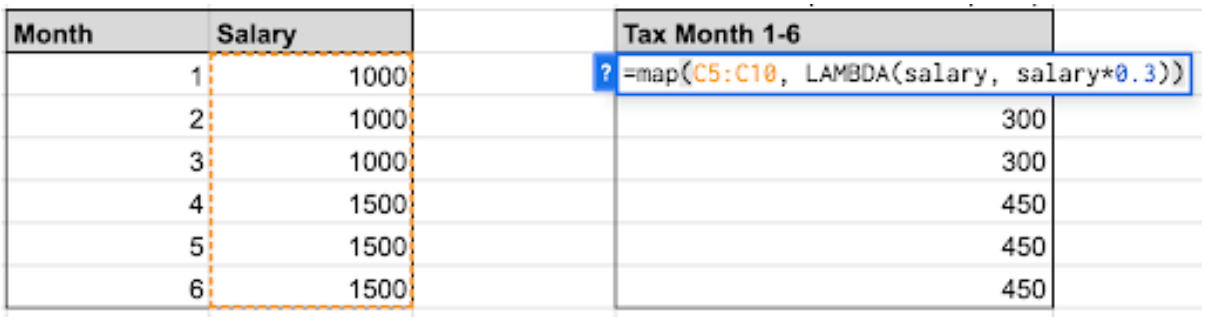


Example:`=LAMBDA(salary, salary*0.3)(C5)`

This calculates the tax for month 1.

LAMBDA inside a LAMBDA helper function

To perform advanced array-operations, use `LAMBDA` functions inside `LAMBDA helper functions` (LHFs).



Month	Salary
1	1000
2	1000
3	1000
4	1500
5	1500
6	1500

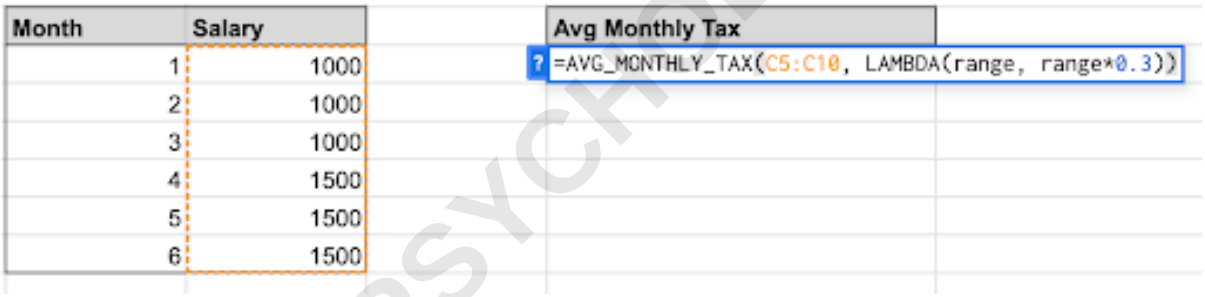
Tax Month 1-6
=map(C5:C10, LAMBDA(salary, salary*0.3))
300
300
450
450
450

Example:`=MAP(C5:C10, LAMBDA(salary, salary*0.3))`

This performs the calculation of salary * 0.3 to each item in the C5:C10 array.

LAMBDA inside a named function

You can use `LAMBDA` functions as a part of a named function's argument. Learn more about named functions.



Month	Salary
1	1000
2	1000
3	1000
4	1500
5	1500
6	1500

Avg Monthly Tax
=AVG_MONTHLY_TAX(C5:C10, LAMBDA(range, range*0.3))

Named function:`AVG_MONTHLY_TAX(range, tax_calculator_function)`

Formula definition: `=tax_calculator_function(sum(range))/count(range)`

You can write the `tax_calculator_function` argument with a `LAMBDA` function.

Example:`=AVG_MONTHLY_TAX(C5:C10,LAMBDA(range, range*0.3))`

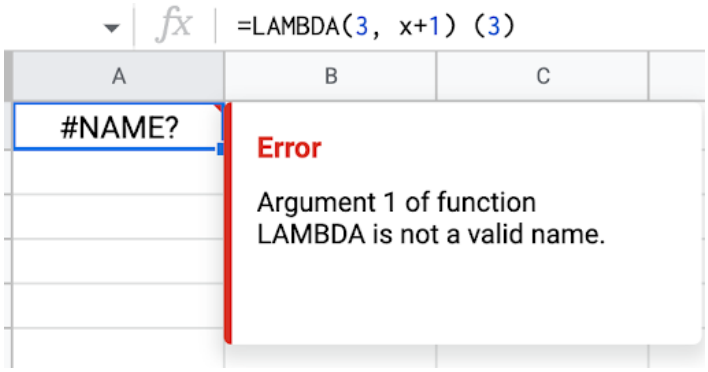
This calculates the average monthly tax for months 1-6.

Common errors

The name argument isn't an identifier

Example: `=LAMBDA(3, x+1)(3)`

If the first argument isn't an identifier, this error occurs:



Identifier requirements:

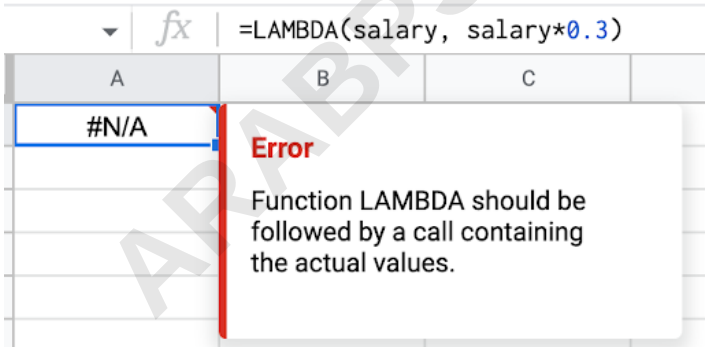
Can't be ranges, like "A1" or "A2."Can't have spaces or special characters. Dots and underscores are allowed.Can't start with numbers, like "9hello."

The LAMBDA wasn't called

This error is due to not following the `LAMBDA` with the call that contains the values.

Example: `=LAMBDA(salary, salary*0.3)`

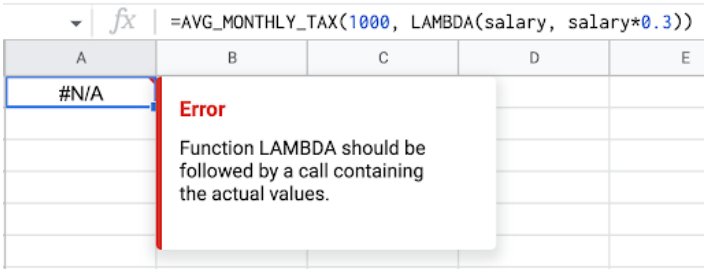
If no value is passed for `salary`, this error occurs:



For a `LAMBDA`, as an argument in a named function, this means not calling the placeholder referring to that `LAMBDA` with the needed values inside the named function's definition.

Example: Under formula definition, if you write `=tax_calculator_function/count(range)`

instead of `=tax_calculator_function(sum(range))/count(range)`, this error occurs:



Tip: For a `LAMBDA` inside a `LAMBDA helper function`, this error wouldn't occur because the `LAMBDA helper function` automatically uses the `LAMBDA` on the given input range.

Lambda helper functions

`Lambda helper functions` (LHFs) are native functions which accept a reusable `LAMBDA` as an argument along with an input array(s). They help in advanced array-operations by executing the formula specified inside the `LAMBDA`, on each value in the input array. The reusable `LAMBDA` can be passed either as a `LAMBDA` function or a `named function`.

Lambda helper functions:

MAP function: This function maps each value in the given arrays to a new value. REDUCE function: This function reduces an array to an accumulated result. BYCOL function: This function groups an array by columns.BYROW function: This function groups an array by rows.SCAN function: This function scans an array and produces intermediate values.MAKEARRAY function: This function creates a calculated array of specified dimensions.

Related functions

Create & use named functions: Let users create and store custom functions, similar to `LAMBDA`.