



# Python for Excel

Version 1.2.1

February 23, 2025

Click on Editor tab to access code editor

Excel add-in b991da66-1687-44ee-8d65-61ab1dfd8b0f.xlsx

FileHomeInsertPage LayoutFormulasDataViewAutomateScript Lab

PasteClipboard

Aptos Narrow11Font

Alignment

GeneralNumberStyles

Conditional FormattingFormat as TableCell Styles

InsertDeleteFormatCells

D26

1

Note that you will see #BUSY! for a few seconds on the first use of a function, subsequent uses will be much faster.

2

Function	Description	Example Use
CALCULATE_AREA(length, width)	Calculate area of rectangle	20
JOIN_STRINGS(first_str, second_str, separator)	Join two strings with a separator	hello world
IN_RANGE(number, min_val, max_val)	Check if number is in range [min_val, max_val]	TRUE
TO_POWER(base, exponent, round_to)	Calculate power with rounding	8
USFEDERAL_BUSINESS_DAYS(start_date, end_date)	Business days between two dates, excluding weekends and US federal holidays	21
BUSINESS_DAYS(start_date, end_date)	Business days between two dates, excluding weekends	23
OPTIMIZE_PRICE(prices, quantities_sold, costs)	Optimize the price of a product to maximize profit based on historical sales data using price 10	
WEB_PAGE_MD(url)	Converts web page content to markdown using Jina	### Book accommodations around the world.Founded in August of 2008 and

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Python for Excel

HomeEditorFunctionsOutput

Python functions in Excel

Step 1: Write a Python function in the editor.

```
1 def hello(name):
2     """ Returns a greeting. """
3     return f"Hello {name}!"
```

Step 2: Save it to create a LAMBDA function.

```
=HELLO("Annie")
Hello Annie!
```

Check out the [slideshow](#) and [documentation](#). Use the [code editor](#) to create and edit functions. Import example functions on the [functions](#) tab.

ExamplesCreate Function with AI

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D26

Write your Python function.

We'll cover test\_cases shortly.

Python for Excel

Home Editor Functions Output

```
1 def hello(name):
2     """ Returns a greeting. """
3     return f"Hello {name}!"
4
5 # Arguments to test the function.
6 test_cases = [
7     ["Nancy"],
8     ["Ming"]
9 ]
```

Drag task pane open for more room.

- Your code ⚠️ MUST BE A FUNCTION! ⚠️
- Save will update code if function already exists.
- See [slideshow](#) and [documentation](#) for details.

Select a function... Test Save AI

Function	Description
CALCULATE_AREA(length, width)	Calculate area
JOIN_STRINGS(first_str, second_str, separator)	Join strings
IN_RANGE(number, min_val, max_val)	Check if number is in range [min_val, max_val]
TO_POWER(base, exponent, round_to)	Calculate power with rounding
USFEDERAL_BUSINESS_DAYS(start_date, end_date)	Business days between two dates, excluding weekends and US federal holidays
BUSINESS_DAYS(start_date, end_date)	Business days between two dates, excluding weekends
OPTIMIZE_PRICE(prices, quantities_sold, costs)	Optimize the price of a product to maximize profit based on historical sales data
WEB_PAGE_MD(url)	Converts web page content to markdown using Jina

AutoSave Off

Book1 - Excel

Search

Comments

Share

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Format as Table

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Sensitivity

Add-ins

Analyze Data

Excel Labs

Translate

Python

Python

P14

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Python for Excel

Home

Editor

Functions

Output

```
1 def hello(name):
2     """ Returns a greeting. """
3     return f"Hello {name}!"
4
5 # Arguments to test the function.
6 test_cases = [
7     ["Nancy"],
8     ["Ming"]
9 ]
```

Drag task pane open for more r

- **Reset:** returns editor to example
- **Test:** executes function using test\_cases.
- **Save:** updates code if function already exists.
- See [video](#) and [documentation](#) for details.

Select a function... ▼

Reset

Test

Save

When you're finished, click Save, there is NO AUTO-SAVE!

Ready Accessibility: Good to go

100%

[Home](#)[Editor](#)[Functions](#)[Output](#)

```
1 def hello(name):  
2     """ Returns a greeting. """  
3     return f"Hello {name}!"  
4  
5 # Arguments to test the function.  
6 test_cases = [  
7     "Nancy",  
8     "Ming"  
9 ]
```

After clicking Save,  
the LAMBDA function  
is created.

HELLO(name) saved!

hello



Reset

Test

Save

Clipboard Font Conditional Formatting Cells Editing Sensitivity Add-ins Analyze Data Excel Labs Translate Python PREVIEW

SUM X ✓ fx =HELLO(

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7		=HELLO(	
8		HELLO(name)	
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Use like any other Excel function

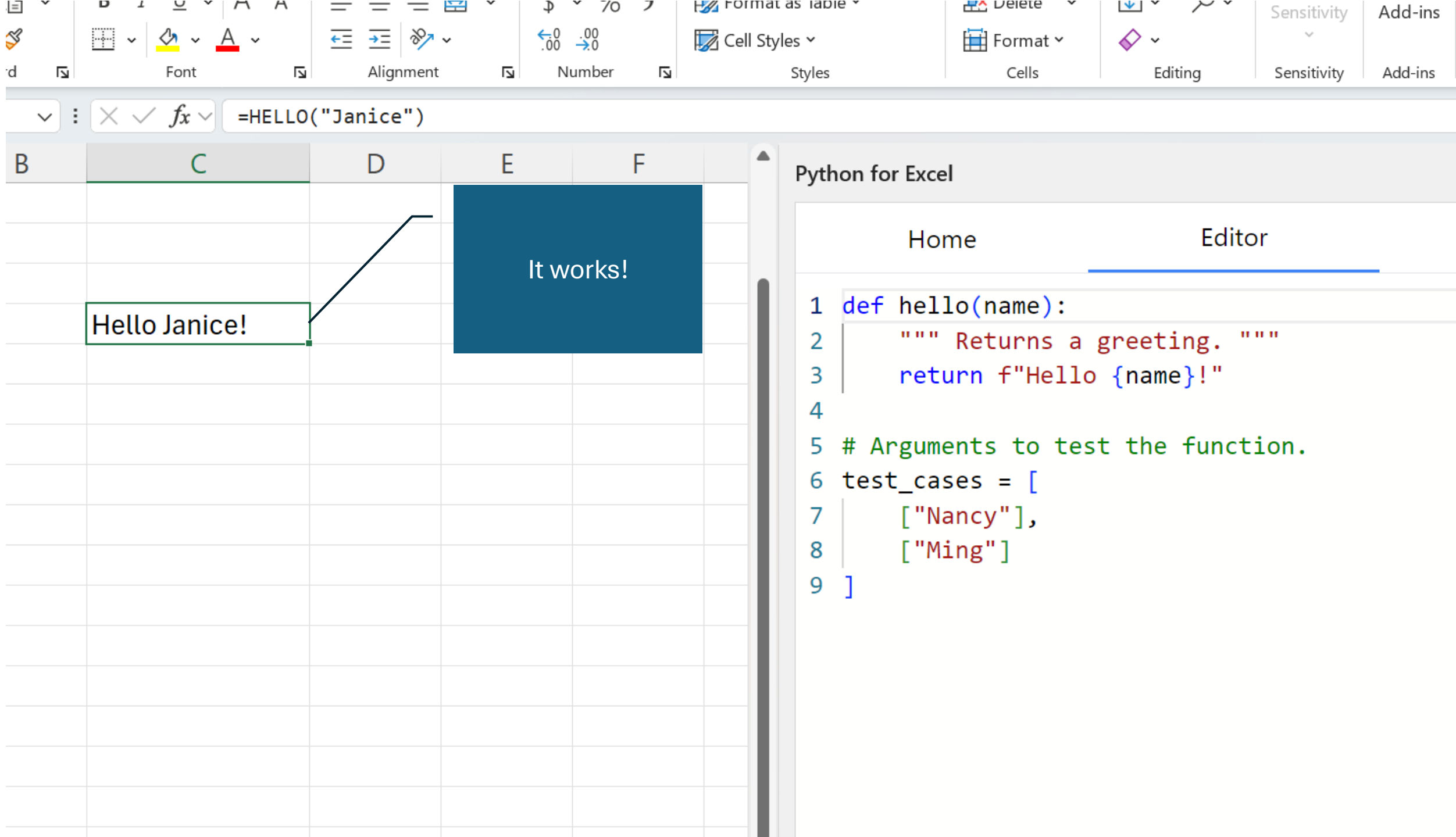
Python for Excel

Home Editor Functions Output

```
1 def hello(name):
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3     return f"Hello {name}!"
4
5 # Arguments to test the function.
6 test_cases = [
7     ["Nancy"],
8     ["Ming"]
9 ]
```

hello

Reset Test Save



AutoSaveOff

Book1 - Excel

Search

FileHomeInsertPage LayoutFormulasDataViewAutomateScript Lab

Paste

Clipboard

B I U A A

Font

Alignment

General

Conditional Formatting

Format as Table

Cell Styles

Number

Styles

Insert

Delete

Format

Cells

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Editing

Sensitivity

Add-ins

Analyze Data

Excel Labs

Translate

Python

Python

Comments

Share

SUM

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=HELLO(

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5						
6						
7		=HELLO(				
8		HELLO(name)				
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Sheet1

Python for Excel

HomeEditorFunctionsOutput

```
1 def hello(name):
2     """ Returns a greeting. """
3     return f"Hello {name}!"
4
5 # Arguments to test the function.
6 test_cases = [
7     ["Nancy"],
8     ["Ming"]
9 ]
```

Test cases are added below your function code

Clicking Test will execute the function with your test\_cases

hello

ResetTestSave

Enter Accessibility: Good to go

140%



AutoSave Off Book1 - Excel

File Home Insert Page Layout Formulas Data View Automate Script Lab

Paste Clipboard Font Alignment Number Styles

Aptos Narrow 11 General Conditional Formatting Format as Table Cell Styles

C7 =HELLO("Janice")

4 5 6 7 Hello Janice! 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Sheet1

Ready Accessibility: Good to go

Python for Excel

Home Editor Functions Output

Displays STDOUT and STDERR messages. Clear removes all messages and Cancel stops the current operation.

Cancel Clear

Case 1: ['Nancy'] -> Hello Nancy!  
Case 2: ['Ming'] -> Hello Ming!

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Comments Share

You are taken to output tab which prints result returned by your function for the example arguments.

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Search

FileHomeInsertPage LayoutFormulasDataViewAutomateScript Lab

Paste

Aptos Narrow11A<sup>+</sup>A<sup>-</sup>

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Conditional Formatting

Format as Table

Cell Styles

Insert

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Format

Cells

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Sort & Filter

Find & Select

Add-ins

Analyze Data

Excel Labs

Fuzzy Match

Translate

Python

Sentiment Analysis

Local GPT

Python

Comments

Share

A1: Note that you will see #BUSY! for a few seconds on the first use of a function, subsequent uses will be much faster.

	A	B
1	Note that you will see #BUSY! for a few seconds on the first use of a function, subsequent uses will be much faster.	
2	<b>Function</b>	<b>Description</b>
3	CALCULATE_AREA(length, width)	Calculate area of rectangle
4	JOIN_STRINGS(first_str, second_str, separator)	Join two strings with a separator
5	IN_RANGE(number, min_val, max_val)	Check if number is in range [min_val, max_val]
6	TO_POWER(base, exponent, round_to)	Calculate power with rounding
7	USFEDERAL_BUSINESS_DAYS(start_date, end_date)	Business days between two dates, excluding weekends and US federal holidays
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9	OPTIMIZE_PRICE(prices, quantities_sold, costs)	Optimize the price of a product to maximize profit based on historical sales data
10	WEB_PAGE_MD(url)	Converts web page content to markdown using Jina
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Python for Excel

HomeEditorFunctionsOutput

Workbook Functions

CALCULATE_AREA	▶	✎	✖
JOIN_STRINGS	▶	✎	✖
IN_RANGE	▶	✎	✖
TO_POWER	▶	✎	✖
USFEDERAL_BUSINESS_DAYS	▶	✎	✖
BUSINESS_DAYS	▶	✎	✖
OPTIMIZE_PRICE	▶	✎	✖
WEB_PAGE_MD	▶	✎	✖

▶ Notebooks

You can run tests, edit the function, or delete it from here.

AutoSave Off Book1 - Excel

File Home Insert Page Layout Formulas Data View Automate Script Lab

C7 : X ✓ fx =HELLO("Janice")

	B	C	D	E	F
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5					
6					
7		Hello Janice!			
8					
9					
10					
11					

Python for Excel

Home Editor Functions Output

```
1 import textdistance
2
3 def fuzzy_top_n(needle, haystack, algorithm, top_n):
4     """
5     Find top N most similar strings for given search term(s).
6
7     Args:
8         needle (str|list): Single string or 2D list containing search term(s)
9         haystack (list): 2D list as column vector, e.g. [['apple'], ['banana']]
10        algorithm (str): Text distance algorithm name from textdistance library
11        top_n (int): Number of closest matches to return for each needle
12
13    Returns:
14        list[list]: 2D list where each inner list contains top N matching strings
15    """
16    algo_func = getattr(textdistance, algorithm)
17
18    needle_list = [needle] if isinstance(needle, str) else [item for sublist in needle for item in sublist]
19
20    results = []
21    for needle_item in needle_list:
22        scores = [(item[0], round(algo_func.normalized_similarity(needle_item, item[0]), 2))
23                  for item in haystack]
24        scores.sort(key=lambda x: x[1], reverse=True)
25        top_matches = [score[0] for score in scores[:top_n]]
26        results.append(top_matches)
27
28    return [results[0]] if len(results) == 1 else results
29
30 # Test cases with column vectors
31 test_haystack = [['apple'], ['banana'], ['orange'], ['pear'], ['apricot'], ['grape']]
32 test_needle_2d = [['apple'], ['banana'], ['orange']]
33
34 test_cases = [
35     ['apple', test_haystack, 'jaccard', 2],
36     ['orange', test_haystack, 'levenshtein', 3],
37     [test_needle_2d, test_haystack, 'jaro_winkler', 2],
38     ['peer', test_haystack, 'hamming', 3]
39 ]
```

fuzzy\_top\_n

Reset Test Save

Ready Accessibility: Good to go 140%

Clicking Edit takes you to the editor where you can modify the function. It is a good idea to **rename it** so you don't accidentally overwrite it by re-importing the same function.