

Lambda

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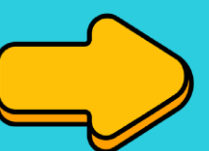
In Python

Lambda Functions

Lambda functions, also known as anonymous functions or lambda expressions, are a feature in Python that allows you to create small, anonymous functions on the fly.

They are typically used for short, simple operations where a full function definition using the "def" keyword would be unnecessary.

Lambda functions are defined using the "lambda" keyword, followed by one or more arguments, a colon, and an expression.

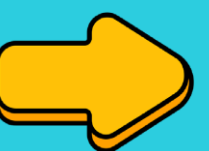


Basic Lambda Function:

Here's an explanation with code example:

```
1  # Lambda function that adds two numbers
2  add = lambda x, y: x + y
3  result = add(5, 3)
4  print(result)
5
6  # Output: 8
```

In this example, we defined a lambda function "add" that takes two arguments "x" and "y", and returns their sum.



Lambda Functions in Sorting:

Lambda functions are commonly used with functions like "`sorted()`" and "`filter()`". For instance, you can use them to sort a list of dictionaries based on a specific key:

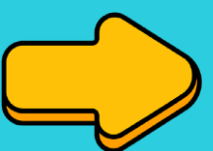
```
1  # List of dictionaries
2  people = [
3      {'name': 'Alice', 'age': 30},
4      {'name': 'Bob', 'age': 25},
5      {'name': 'Charlie', 'age': 35}
6  ]
7
8  # Sort the list of dictionaries by age using a lambda function
9  sorted_people = sorted(people, key=lambda x: x['age'])
10 print(sorted_people)
11
12 # Output:
13 # [{'name': 'Bob', 'age': 25}, {'name': 'Alice', 'age': 30}, {'name': 'Charlie', 'age': 35}]
```



Lambda Functions with filter():

You can use lambda functions with "filter()" to filter elements from an iterable based on a condition:

```
1  # List of numbers
2  numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9]
3
4  # Use a lambda function to filter even numbers
5  even_numbers = list(filter(lambda x: x % 2 == 0, numbers))
6  print(even_numbers)
7
8  # Output: [2, 4, 6, 8]
```



Lambda Functions with map():

You can also use lambda functions with "map()" to apply a function to each element in an iterable:

```
1  # List of numbers
2  numbers = [1, 2, 3, 4, 5]
3
4  # Use a Lambda function to square each number
5  squared_numbers = list(map(lambda x: x ** 2, numbers))
6  print(squared_numbers)
7
8  # Output: [1, 4, 9, 16, 25]
```



NOTE

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Lambda functions are concise and handy for one-off operations, but for more complex functions, it's often better to use regular "def" functions to improve readability.

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