```
>>> add = lambda x,
>>> add(3, 4)
7
```

# Lambda functions clearly explained!! 🚀

```
lambda arguments: expression
```

What are lambda functions ?

Simply put, they are small anonymous functions
that are defined without a name.

Check out the syntax

Swipe 👉

```
lambda arguments: expression
```

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Lambda functions can have any number of arguments, but they can only have one expression.

The expression is executed and the result is returned.

Here is an example of a lambda function that adds two numbers

Swipe 👉

```
>>> add = lambda x, y: x + y
>>> add(3, 4)
7
```

Lambda functions can be used wherever a function is required.

For Ex., they can be passed as an argument to a higher-order function.

Here is an example of using a lambda function with the built-in `filter()` function.

Swipe 👉

```python
# `filter()` takes two inputs:
#  1. function: function that tests if each element
#     of a seq is true or not
#  2. iterable: an iterable (eg. list) from which we
#     need to filter values
# ----------------------------------------------------
>>> numbers = [1, 2, 3, 4, 5, 6]

>>> even_numbers = filter( lambda x: x % 2 == 0 , numbers )
                           └─────── function       └─ iterable
>>> even_numbers
[2, 4, 6]

# ----------------------------------------------------
# Cheers 🍻
```

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One of the most common application of Python lambda:

Pandas 🐼 df.apply()

Applying a function across a DataFrame!

Swipe 👉

```python
import pandas as pd

# Create a sample DataFrame
df = pd.DataFrame({'A': [1, 2, 3], 'B': [4, 5, 6], 'C': [7, 8, 9]})

# Print the original DataFrame
print(df)


   A  B  C
0  1  4  7
1  2  5  8
2  3  6  9

# Apply a function to the 'A' column to square the values
df['A'] = df['A'].apply(lambda x: x ** 2)

# Print the modified DataFrame
print(df)

   A  B  C
0  1  4  7
1  4  5  8
2  9  6  9

# Observe that the entries in column 'A' are squared now!
-------------------------------------------------------------------

# Cheers! 🍺
# Hope you enjoyed reading!! 📖
```

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That's a wrap!

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Cheers!! 🙂