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**Topic 47 - Functions: Passing Information Back from Them**

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**What**

In Python, functions not only receive information, but can also **send information back** to the code that called them using the return statement. This makes it possible for a function to **process data** and then **return** a result.

**Why**

Returning values from functions enables:

* **Reusable calculations**: Use the returned value in further calculations or checks.
* **Flexibility**: Functions can work as **black boxes** that return values without needing to display them, making them easier to integrate and adapt in complex programs.

**How**

1. **Adding a return statement**
   * Use return to send a value back to the calling code.
   * The return statement **ends** the function and passes the result back.

python

Copy code

def calc\_tax(sales\_total, tax\_rate):

tax = sales\_total \* tax\_rate

return tax

# Using the return value

sales\_tax = calc\_tax(sales\_total=101.37, tax\_rate=.05)

print(sales\_tax) # Output: 5.0685

1. **Condensing Code with return**
   * The return statement can **streamline** functions. You can even skip creating a variable inside the function if it’s not needed.

python

Copy code

def calc\_tax(sales\_total, tax\_rate):

return sales\_total \* tax\_rate

# Directly using the return value

print(calc\_tax(sales\_total=101.37, tax\_rate=.05)) # Output: 5.0685

**Things to Remember**

* The **return keyword** is crucial for sending data back from a function.
* Any code after return won’t run as return ends the function.
* return can **pass back any type of data**—numbers, strings, lists, or even other functions.

Using return transforms functions from basic operations into **powerful tools** for processing and providing information back to the caller.

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