

Functions & Libraries

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Functions

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Functions - Definition in Python

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def function_name(arguments):  
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- **return** *something* - End of the function

Functions - Calling

Define:

```
def fibonacci(number):  
    a = 0  
    ...  
    b = a + b  
    return a
```

Calling the function:

```
>>> result = fibonacci(6)  
>>> print(result)  
8
```

Some examples

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- **print**(*something*)
- **len**(*something*)
- **range**(*something*)
- **input**(*something*)

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- **return a** - One value
- **return a, b, c** - Multiple values

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Tuples

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- Immutable
- Ordered
- Can contain multiple data types

Tuples - Examples

```
>>> my_tuple = (1, 2, 3)
>>> print(my_tuple)
(1, 2, 3)
>>> print(my_tuple[0])
1
>>> print(my_tuple[1])
2
>>> print(my_tuple[2])
3
```

Stuff like **len()** and **for** works as expected.

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Let's start using code from other people.

Libraries

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- **math** - Math functions
- **secrets** - strong random numbers
- **numpy** - fast/complex math
- **matplotlib** - plotting
- **pandas** - data analysis
- **tensor-flow** - machine learning

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Now you can use the functions from the library.

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```
from math import sqrt  
print (sqrt(4))  
2.0
```

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- **math** - <https://docs.python.org/3/library/math.html>
- **tensor-flow** - https://www.tensorflow.org/api_docs/python/tf

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But we will talk about that next week.

Next week:

More data types and a bigger task
