



Create Your Own ufunc

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How To Create Your Own ufunc

To create your own ufunc, you have to define a function, like you do with normal functions in Python, then you add it to your NumPy ufunc library with the `frompyfunc()` method.

The `frompyfunc()` method takes the following arguments:

1. *function* - the name of the function.
2. *inputs* - the number of input arguments (arrays).
3. *outputs* - the number of output arrays.

Example

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Create your own ufunc for addition:

```
import numpy as np

def myadd(x, y):
    return x+y

myadd = np.frompyfunc(myadd, 2, 1)

print(myadd([1, 2, 3, 4], [5, 6, 7, 8]))
```



Check if a Function is a ufunc

Check the *type* of a function to check if it is a ufunc or not.

A ufunc should return `<class 'numpy.ufunc'>`.

Example

Check if a function is a ufunc:

```
import numpy as np

print(type(np.add))
```

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If it is not a ufunc, it will return another type, like this built-in NumPy function for joining two or more arrays:

Example

Check the type of another function: `concatenate()`:

```
import numpy as np

print(type(np.concatenate))
```

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If the function is not recognized at all, it will return an error:



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```
import numpy as np

print(type(np.blahblah))
```

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To test if the function is a ufunc in an if statement, use the `numpy.ufunc` value (or `np.ufunc` if you use np as an alias for numpy):

Example

Use an if statement to check if the function is a ufunc or not:

```
import numpy as np

if type(np.add) == np.ufunc:
    print('add is ufunc')
else:
    print('add is not ufunc')
```

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Exercise ?

To create a ufunc, you have to add it to the ufunc library using a specific function, what function?

☐ `frompyfunc()`

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