Python Introduction: Types

Let's evaluate some simple expressions.

In [1]:

```
3*2
```

Out[1]:

```
6
```

In [2]:

```
5+3*2
```

Out[2]:

```
11
```

You can use `type()` to find the *type* of an expression.

In [3]:

```
type(5+3*2)
```

Out[3]:

```
int
```

Now add decimal points.

In [4]:

```
5+3.5*2
```

Out[4]:

```
12.0
```

In [5]:

```
type(5+3.0*2)
```

Out[5]:

```
float
```

Strings are written with single (') or double quotes (")

In [6]:

```
"hello"
```

Out[6]:

```
'hello'
```

Multiplication and addition work on strings, too.

In [7]:

```
3 * 'hello' + "eagpggpu"
```

Out[7]:

```
'hellohellohelloeagpggpu'
```

Lists are written in brackets (`[ ]`) with commas (`,`).

In [8]:

```
[5, 3, 7]
```

Out[8]:

```
[5, 3, 7]
```

List entries don't have to have the same type.

In [9]:

```
["hi there", 15, [1,2,3]]
```

Out[9]:

```
['hi there', 15, [1, 2, 3]]
```

"Multiplication" and "addition" work on lists, too.

In [10]:

```
[1,2,3] * 4 + [5, 5, 5]
```

Out[10]:

```
[1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 5, 5, 5]
```

Hmmmmmm. Was that what you expected?

In [11]:

```
import numpy as np

np.array([1,2,3]) * 4 + np.array([5,5,5])
```

Out[11]:

```
array([ 9, 13, 17])
```