

1_Variable_types

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This notebook contains a rough introduction to basic Python variables and what to do with them.

Last Modified: Jan 23 2017 Humans Responsible: The Prickly Pythons

0.0.1 Print a string

```
In [1]: print('hello world')
        # This you can only do in python 2 (not python 3):
        print 'hello world'
```

```
hello world
hello world
```

```
In [2]: # Python works with different variable types. The above was a string:
        x = 'hello world'
        print(x)
```

```
hello world
```

```
In [3]: # We can check the variable type:
        type(x)
```

```
<type 'str'>
```

0.0.2 Integers

```
In [4]: x = 2
        type(x)
```

```
Out[4]: int
```

0.0.3 Floats

```
In [5]: # Most used: float (default precision:
        # 64 bit, about 16 digits after the demical point.)
        x = 2/3.0
        print(x)
```

0.6666666666667

```
In [6]: # However, dividing integers will round down to the nearest integer
        x = 2/3
        print(x)
        # (Python 3 will convert result to float)
```

0

```
In [7]: # Taking the power of a number looks weird (not x^3):
        print(x**3.)
```

0.0

```
In [8]: # Boolean: can be True or False
        x = False
        type(x)
```

Out[8]: bool

0.0.4 Python is case sensitive !

```
In [12]: x = True
         type(x)
```

Out[12]: bool

0.0.5 Small if/else statement

```
In [13]: if x:
          print('x is True')
          print(x*x)
        else:
          print('x is False')
          print(x*x)
```

x is True
1

So a boolean can be multiplied by another boolean!! False x False = 0, True x True = 1, False x True = 0

0.0.6 Converting and handling variables

```
In [14]: # Turning a float into a integer
         x = 4.7
         int(round(x))
```

Out[14]: 5

```
In [15]: # If you do not round x off first, then int() rounds down:
         int(x)
```

Out[15]: 4

```
In [16]: # Turning the float into a string
         str(x)
```

Out[16]: '4.7'

```
In [ ]: # To delete a variable from the python namespace:
         x
```

```
In [17]: del x
```

```
In [18]: x
```

```
-----
NameError                                Traceback (most recent call last)

<ipython-input-18-401b30e3b8b5> in <module>()
----> 1 x

NameError: name 'x' is not defined
```

```
In [ ]:
```