# Python Numbers

## Python Numbers

There are three numeric types in Python:

* int
* float
* complex

Variables of numeric types are created when you assign a value to them:

### Example

x = 1 # int  
y = 2.8 # float  
z = 1j # complex

To verify the type of any object in Python, use the type() function:

### Example

print(type(x))  
print(type(y))  
print(type(z))

## Int

Int, or integer, is a whole number, positive or negative, without decimals, of unlimited length.

### Example

Integers:

x = 1  
y = 35656222554887711  
z = -3255522  
  
print(type(x))  
print(type(y))  
print(type(z))

## Float

Float, or "floating point number" is a number, positive or negative, containing one or more decimals.

### Example

Floats:

x = 1.10  
y = 1.0  
z = -35.59  
  
print(type(x))  
print(type(y))  
print(type(z))

Float can also be scientific numbers with an "e" to indicate the power of 10.

### Example

Floats:

x = 35e3  
y = 12E4  
z = -87.7e100  
  
print(type(x))  
print(type(y))  
print(type(z))

## Complex

Complex numbers are written with a "j" as the imaginary part:

### Example

Complex:

x = 3+5j  
y = 5j  
z = -5j  
  
print(type(x))  
print(type(y))  
print(type(z))

## Type Conversion

You can convert from one type to another with the int(), float(), and complex() methods:

### Example

Convert from one type to another:

x = 1 # int  
y = 2.8 # float  
z = 1j # complex  
  
#convert from int to float:  
a = float(x)  
  
#convert from float to int:  
b = int(y)  
  
#convert from int to complex:  
c = complex(x)  
  
print(a)  
print(b)  
print(c)  
  
print(type(a))  
print(type(b))  
print(type(c))

Note: You cannot convert complex numbers into another number type.

## Random Number

Python does not have a random() function to make a random number, but Python has a built-in module called random that can be used to make random numbers:

### Example

Import the random module, and display a random number between 1 and 9:

import random  
  
print(random.randrange(1, 10))