

# Python Cheatsheet

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Basic cheatsheet for Python based on the book written by Al Sweigart, [Automate the Boring Stuff with Python](#) under the [Creative Commons license](#).

## PDF Version

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## Python Basics

### Math Operators

From **Highest** to **Lowest** precedence:

Operators	Operation	Example
**	Exponent	2 ** 3 = 8
%	Modulus/Remaider	22 % 8 = 16
//	Integer division	22 // 8 = 2
/	Division	22 / 8 = 2.75
*	Multiplication	3 * 3 = 15
-	Subtraction	5 - 2 = 3
+	Addition	2 + 2 = 4

Examples of expressions in the interactive shell:

```
>>> 2 + 3 * 6
20
```

```
>>> (2 + 3) * 6
30

>>> 2 ** 8
256

>>> 23 // 7
3

>>> 23 % 7
2

>>> (5 - 1) * ((7 + 1) / (3 - 1))
16.0
```

## Data Types

Data Type	Examples
Integers	-2, -1, 0, 1, 2, 3, 4, 5
Floating-point numbers	-1.25, -1.0, --0.5, 0.0, 0.5, 1.0, 1.25
Strings	'a', 'aa', 'aaa', 'Hello!', '11 cats'

## String Concatenation and Replication

String concatenation:

```
>>> 'Alice' + 'Bob'
'AliceBob'
```

String Replication:

```
>>> 'Alice' * 5
'AliceAliceAliceAliceAlice'
```

## Variables

You can name a variable anything as long as it obeys the following three rules:

1. It can be only one word.
2. It can use only letters, numbers, and the underscore (\_) character.
3. It can't begin with a number.

Example:

```
>>> spam = 'Hello'
>>> spam
'Hello'
```

## Comments

Inline comment:

```
# This is a comment
```

Multiline Comment:

```
"""
This is a Multiline Comment
You can also use:
''' multiline comment '''
"""
```

## The print() Function

```
>>> print('Hello world!')
Hello world!
```

## The input() Function

Example Code:

```
>>> print('What is your name?')    # ask for their name
>>> myName = input()
>>> print('It is good to meet you, ' + myName)
```

Output:

```
What is your name?
Al
It is good to meet you, Al
```

## The len() Function

Evaluates to the integer value of the number of characters in a string:

```
>>> len('hello')
5
```

## The str(), int(), and float() Functions

Convert Between Data Types:

Integer to String or Float:

```
>>> str(29)
'29'
>>> print('I am ' + str(29) + ' years old.')
I am 29 years old.
>>> str(-3.14)
'-3.14'
```

Float to Integer:

```
>>> int(7.7)
7
>>> int(7.7) + 1
8
```