

Python Cheat Sheet - The Basics

Math Operations

<i>Operators</i>	<i>Operation</i>	<i>Example</i>
**	Exponent	2 ** 3 = 8
%	Modulus/Remainder	22 % 8 = 6
//	Integer division	22 // 8 = 2
/	Division	22 / 8 = 2.75
*	Multiplication	3 * 3 = 9
-	Subtraction	5 - 2 = 3
+	Addition	2 + 2 = 4

Note: from highest to lowest precedence.

Walrus Operator

```
>>> print(my_var:="Hello World!")  
# 'Hello world!'
```

```
>>> my_var="Yes"  
>>> print(my_var)  
# 'Yes'
```

```
>>> print(my_var:="Hello")  
# 'Hello'
```

Data Types

<i>Data Type</i>	<i>Examples</i>
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'

Variables

- It can be only one word.
- It can use only letters, numbers, and the underscore (`_`) character.
- It can't begin with a number.
- Variable names starting with an underscore (`_`) are considered as "unuseful".

Comments

- Inline comment:
`# This is a comment`
- Multiline comment:
`# This is a
multiline comment`
- Code with a comment
`a = 1 # initialization`

- Function docstring:

```
def foo():  
    """  
    This is a function docstring  
    You can also use:  
    """ Function Docstring """  
    """
```

The input() Function

This function takes the input from the user and converts it into a string:

```
>>> print("What is your name?") # ask for their name  
>>> my_name = input()  
>>> print("Hi, {}".format(my_name))  
# What is your name?  
# Martha  
# Hi, Martha
```

input() can also set a default message without using print():

```
>>> my_name = input("What is your name? ") # default message  
>>> print("Hi, {}".format(my_name))  
# What is your name? Martha  
# Hi, Martha
```

It is also possible to use formatted strings to avoid using .format:

```
>>> my_name = input("What is your name? ") # default message  
>>> print(f'Hi, {my_name}')  
# What is your name? Martha  
# Hi, Martha
```

Python Built-In Functions

Function	Description
abs()	Return the absolute value of a number.
aiter()	Return an asynchronous iterator for an asynchronous iterable.
all()	Return True if all elements of the iterable are true.
any()	Return True if any element of the iterable is true.
ascii()	Return a string with a printable representation of an object.

<u>bin()</u>	Convert an integer number to a binary string.
<u>bool()</u>	Return a Boolean value.
<u>breakpoint()</u>	Drops you into the debugger at the call site.
<u>bytearray()</u>	Return a new array of bytes.
<u>bytes()</u>	Return a new “bytes” object.
<u>callable()</u>	Return True if the object argument is callable, False if not.
<u>chr()</u>	Return the string representing a character.
<u>classmethod()</u>	Transform a method into a class method.
<u>compile()</u>	Compile the source into a code or AST object.
<u>complex()</u>	Return a complex number with the value $\text{real} + \text{imag} * 1j$.
<u>delattr()</u>	Deletes the named attribute, provided the object allows it.
<u>dict()</u>	Create a new dictionary.
<u>dir()</u>	Return the list of names in the current local scope.
<u>divmod()</u>	Return a pair of numbers consisting of their quotient and remainder.
<u>enumerate()</u>	Return an enumerate object.
<u>eval()</u>	Evaluates and executes an expression.
<u>exec()</u>	This function supports dynamic execution of Python code.
<u>filter()</u>	Construct an iterator from an iterable and returns true.
<u>float()</u>	Return a floating point number from a number or string.
<u>format()</u>	Convert a value to a “formatted” representation.
<u>frozenset()</u>	Return a new frozenset object.

<u>getattr()</u>	Return the value of the named attribute of object.
<u>globals()</u>	Return the dictionary implementing the current module namespace.
<u>hasattr()</u>	True if the string is the name of one of the object's attributes.
<u>hash()</u>	Return the hash value of the object.
<u>help()</u>	Invoke the built-in help system.
<u>hex()</u>	Convert an integer number to a lowercase hexadecimal string.
<u>id()</u>	Return the "identity" of an object.
<u>input()</u>	This function takes an input and converts it into a string.
<u>int()</u>	Return an integer object constructed from a number or string.
<u>isinstance()</u>	Return True if the object argument is an instance of an object.
<u>issubclass()</u>	Return True if class is a subclass of classinfo.
<u>iter()</u>	Return an iterator object.
<u>len()</u>	Return the length (the number of items) of an object.
<u>list()</u>	Rather than being a function, list is a mutable sequence type.
<u>locals()</u>	Update and return a dictionary with the current local symbol table.
<u>map()</u>	Return an iterator that applies function to every item of iterable.
<u>max()</u>	Return the largest item in an iterable.
<u>min()</u>	Return the smallest item in an iterable.
<u>next()</u>	Retrieve the next item from the iterator.
<u>object()</u>	Return a new featureless object.
<u>oct()</u>	Convert an integer number to an octal string.

<u>open()</u>	Open file and return a corresponding file object.
<u>ord()</u>	Return an integer representing the Unicode code point of a character.
<u>pow()</u>	Return base to the power exp.
<u>print()</u>	Print objects to the text stream file.
<u>property()</u>	Return a property attribute.
<u>repr()</u>	Return a string containing a printable representation of an object.
<u>reversed()</u>	Return a reverse iterator.
<u>round()</u>	Return number rounded to ndigits precision after the decimal point.
<u>set()</u>	Return a new set object.
<u>setattr()</u>	This is the counterpart of getattr().
<u>slice()</u>	Return a sliced object representing a set of indices.
<u>sorted()</u>	Return a new sorted list from the items in iterable.
<u>staticmethod()</u>	Transform a method into a static method.
<u>str()</u>	Return a str version of object.
<u>sum()</u>	Sums start and the items of an iterable.
<u>super()</u>	Return a proxy object that delegates method calls to a parent or sibling.
<u>tuple()</u>	Rather than being a function, is actually an immutable sequence type.
<u>type()</u>	Return the type of an object.
<u>vars()</u>	Return the dict attribute for any other object with a dict attribute.
<u>zip()</u>	Iterate over several iterables in parallel.
<u>import()</u>	This function is invoked by the import statement.

More resources: <https://www.pythoncheatsheet.org/>

Adapted from: <https://www.pythoncheatsheet.org/>