Mosh Hamedani

Coding Made Simple

October 22nd, 2018

Comments

Python 3 Cheat Sheet

Update (Nov 19 2018): Added exceptions and classes.

I've created this Python 3 cheat sheet to help beginners remember Python language syntax. You can also download this cheat sheet as a beautiful PDF here.

NOTE: This cheat sheet is a work in progress and is not complete yet. I'll be adding new stuff to it over the next few weeks. So, be sure to come back and get the latest version.

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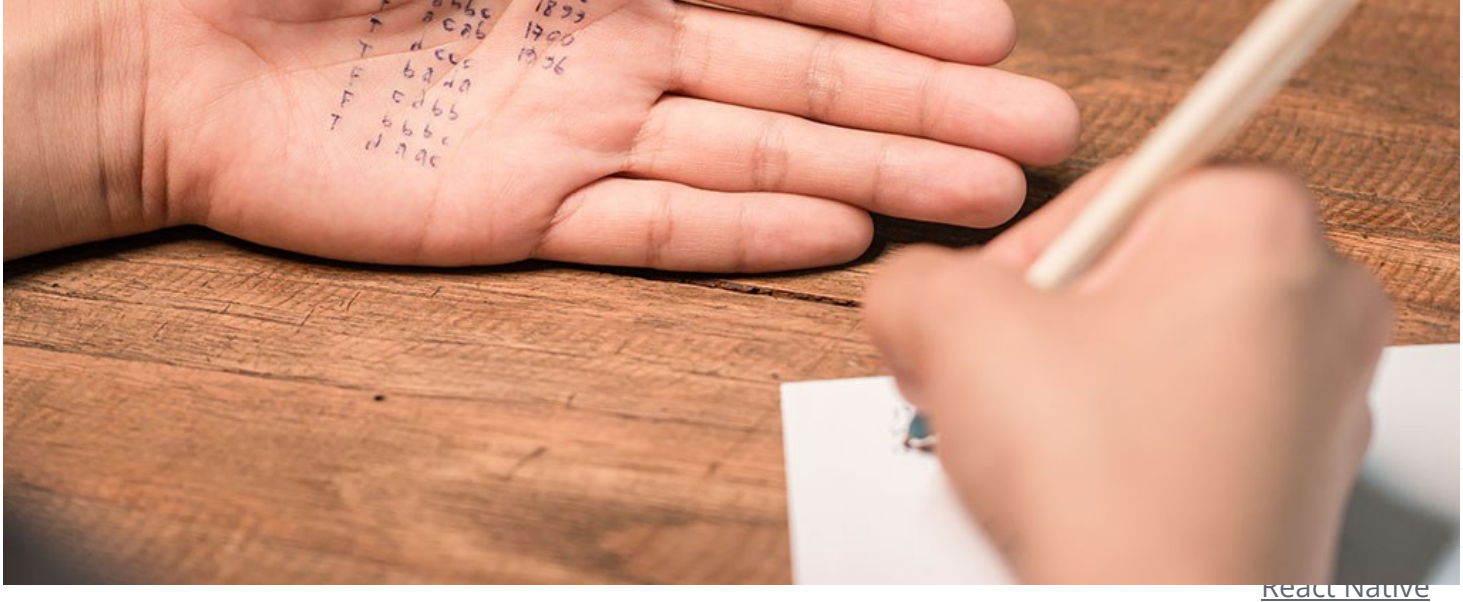

If you're starting out with Python and are looking for a fun and comprehensive tutorial, check out my YouTube tutorials. I have two Python tutorials. If you have no or little programming experience, I suggest you check out my Python tutorial for beginners. Otherwise, if you know the basics (eg variables, functions, conditional statements, loops) and are looking for a tutorial that gets straight to the point and doesn't treat you like a beginner, check out my Python tutorial for programmers.

If you enjoy this post, please spread the love by sharing this post with others.

Variables

```
a = 1        # integer
b = 1.1      # float
c = 1 + 2j   # complex number (a + bi)
d = "a"      # string
e = True     # boolean (True / False)
```

Strings

```
x = "Python"
len(x)
x[0]
x[-1]
x[0:3]

# Formatted strings
name = f"{first} {last}"

# Escape sequences
\" \' \\ \n

# String methods
x.upper()
x.lower()
x.title()
x.strip()
x.find("p")
x.replace("a", "b")
"a" in x
```

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Type Conversion

```
int(x)
float(x)
bool(x)
string(x)
```

Falsy Values

```
0
“”
[]
```

Conditional Statements

```
if x == 1:
    print(“a”)
elif x == 2:
    print(“b”)
else:
    print(“c”)

# Ternary operator
x = “a” if n > 1 else “b”

# Chaining comparison operators
if 18 <= age < 65:
```

Loops

```
for n in range(1, 10):
    print(n)

while n < 10:
    print(n)
    n += 1
```

Functions

```
def increment(number, by=1):
    return number + by

# Keyword arguments
increment(2, by=1)

# Variable number of arguments
def multiply(*numbers):
    for number in numbers:
        print number


multiply(1, 2, 3, 4)

# Variable number of keyword arguments
def save_user(**user):
```

```
    ...


save_user(id=1, name="Mosh")
```

Lists

```
# Creating lists
letters = ["a", "b", "c"]
matrix = [[0, 1], [1, 2]]
zeros = [0] * 5
combined = zeros + letters
numbers = list(range(20))

# Accessing items
letters = ["a", "b", "c", "d"]
letters[0]  # "a"
letters[-1] # "d"

# Slicing lists
letters[0:3]   # "a", "b", "c"
letters[:3]    # "a", "b", "c"
letters[0:]    # "a", "b", "c", "d"
letters[:]     # "a", "b", "c", "d"
letters[::2]   # "a", "c"
letters[::-1]  # "d", "c", "b", "a"

# Unpacking
first, second, *other = letters

# Looping over lists
for letter in letters:
    ...

for index, letter in enumerate(letters):
    ...

# Adding items
letters.append("e")
letters.insert(0, "-")

# Removing items
letters.pop()
letters.pop(0)
letters.remove("b")
del letters[0:3]

# Finding items
if "f" in letters:
    letters.index("f")

# Sorting lists
letters.sort()
letters.sort(reverse=True)

# Custom sorting
items = [
    ("Product1", 10),
    ("Product2", 9),
    ("Product3", 11)
```

```
]

items.sort(key=lambda item: item[1])

# Map and filter
prices = list(map(lambda item: item[1], items))
expensive_items = list(filter(lambda item: item[1] >= 1

# List comprehensions
prices = [item[1] for item in items]
expensive_items = [item for item in items if item[1] >=

# Zip function
list1 = [1, 2, 3]
list2 = [10, 20, 30]
combined = list(zip(list1, list2))    # [(1, 10), (2, 2
```

Tuples

```
point = (1, 2, 3)
point(0:2)     # (1, 2)
x, y, z = point
if 10 in point:
    ...

# Swapping variables
x = 10
y = 11
x, y = y, x
```

Arrays

```
from array import array

numbers = array("i", [1, 2, 3])
```

Sets

```
first = {1, 2, 3, 4}
second = {1, 5}

first | second  # {1, 2, 3, 4, 5}
first & second  # {1}
first - second  # {2, 3, 4}
first ^ second  # {2, 3, 4, 5}

if 1 in first:
    ...
```

Dictionaries

```
point = {"x": 1, "y": 2}
point = dict(x=1, y=2)
point["z"] = 3
if "a" in point:
    ...
```

```
point.get("a", 0)   # 0
del point["x"]
for key, value in point.items():
    ...

# Dictionary comprehensions
values = {x: x * 2 for x in range(5)}
```

Generator Expressions

```
values = (x * 2 for x in range(10000))
len(values)  # Error
for x in values:
```

Unpacking Operator

```
first = [1, 2, 3]
second = [4, 5, 6]
combined = [*first, "a", *second]

first = {"x": 1}
second = {"y": 2}
combined = {**first, **second}
```

Exceptions

```
# Handling Exceptions
try:
  …
except (ValueError, ZeroDivisionError):
  …
else:
  # no exceptions raised
finally:
  # cleanup code

# Raising exceptions
if x < 1:
    raise ValueError(“…”)

# The with statement
with open(“file.txt”) as file:
    …
```

Classes

```
# Creating classes
class Point:
    def __init__(self, x, y):
        self.x = x
        self.y = y

    def draw(self):
        …

# Instance vs class attributes
class Point:
```

```
class Point:
    default_color = "red"

    def __init__(self, x, y):
        self.x = x

# Instance vs class methods
class Point:
    def draw(self):
        …

    @classmethod
    def zero(cls):
        return cls(0, 0)


# Magic methods
__str__()
__eq__()
__cmp__()
...

# Private members
class Point:
    def __init__(self, x):
        self.__x = x


# Properties
class Point:
    def __init__(self, x):
        self.__x = x

    @property
    def x(self):
        return self.__x

    @property.setter:
    def x.setter(self, value):
        self.__x = value

# Inheritance
class FileStream(Stream):
    def open(self):
         super().open()
         …

# Multiple inheritance
class FlyingFish(Flyer, Swimmer):
    …

# Abstract base classes
from abc import ABC, abstractmethod

class Stream(ABC):
    @abstractmethod
    def read(self):
        pass

# Named tuples
from collections import namedtuple

```

```
Point = namedtuple("Point", ["x", "y"])
point = Point(x=1, y=2)
```

Mosh

Hi! My name is Mosh Hamedani. I'm a software engineer with two decades of experience and I've taught over three million people how to code or how to become professional software engineers through my YouTube channel and online courses. It's my mission to make software engineering accessible to everyone.

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Tags: cheat sheet, python

14 responses to "Python 3 Cheat Sheet"

1. *Brian* says:
November 18, 2018 at 12:34 am

Thank you Mosh!!

Reply

2. *Mojtaba Jahani* says:
November 20, 2018 at 12:27 am

Hi and thanks for this awesome course.
I think there is a typo in Type Conversion part of Python cheat sheet for string conversion.
str(x) instead of string(x)

Reply

3. *Python For Loops – Python Tutorial for Absolute Beginners | Coding Videos* says:
December 30, 2018 at 12:07 am

[…] Python 3 Cheat Sheet […]

Reply

4.  *chakshudiwan* says:
February 12, 2019 at 9:16 am

   Great Cheatsheet. Just had a glance at Tuples Block.
   Use Square brackets for print.

   Thankyou for sharing.

   Reply

5.  *antiViruss* says:
February 16, 2019 at 8:31 am

   thanks sir now i will be enjoying the learning

   Reply

6.  *Hassan Eman* says:
February 18, 2019 at 3:26 pm

   you are very good teacher MOSH

   Reply

7.  *Trahloc* says:
March 28, 2019 at 8:51 pm

   Hello, pretty sure you have a typo on the first page. “Numer functions” was probably meant to be “Number functions” since google’s only real result searching for that exact phrase and python is this pdf.

   Reply

8.  *G Srinivas Rao* says:
April 12, 2019 at 9:28 am

   You are great Mosh!! you have given all the codes at one place. This is great for beginners like me.

   Reply

9.  *Abdelkrim Tmane* says:
April 24, 2019 at 1:37 pm

   Good Job Mosh, I am a network engineer for so many years, I never code before, it was a nightmare for me, but with this class you made it not just easy but also a fun thing to do.

   Thank you so much

   Reply

10.  *Ajay roy* says:
May 2, 2019 at 11:32 am

I will come back anf visit again please complete this cheatsheet with an example

Reply

11. *jakub* says:
May 16, 2019 at 3:31 pm

Tnx Mosh you are best teacher online.

Reply

12. *Ibrahim Suleiman* says:
July 21, 2019 at 7:32 am

Thank you mosh nice cheat sheet

Reply

13. *Zabil Ibayev* says:
August 5, 2019 at 8:54 am

Thanks a lot!

Reply

14. *amanat* says:
September 26, 2019 at 4:40 pm

values = {x * 2 for x in range(10)}
print(values) # no Error

Reply

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