

Python Language & Syntax Cheat Sheet

Python is white-space dependent; code blocks are indented 4 spaces (not tabs)

Variable Assignment

```
integer = 1
string = "string"
unicode_string = u"unicode string"
mutli_line_string = """ multi-line
string
"""
tuple = (element1, element2, element3, ...)
list = [ element1, element2, element3, ... ]
dictionary = { key1 : value1, key2 : value2, ... }
dictionary[key] = value
class_instance = ClassName(init_args)
```

Frequently Used Built-in Types

True	False	None
str	unicode	int
float	list	dict

Other than **True**, **False** and **None**, these can also be used as functions to explicitly cast a value to that type

Functions

```
def function_name(arg1, arg2,
                  keyword1=val1, keyword2=val2, ...):
    <function body>
    return return_value

e.g.
def my_function(x, y, z=0):    my_function(1, 2) → 3
    sum = x + y + z           my_function(1, 2, 3) → 6
    return sum                my_function(1, 2, y=4) → 7
```

Classes

```
class ClassName(SuperClass):
    class_variable = static_value
    def __init__(self, value1, <...>):
        self.instance_variable1 = value1
        self.instance_function()
    def instance_function(self, arg1, <...>):
        <function body>
        return return_value

e.g.
class MyClass(object):        MyClass.offset → 1
    offset = 1
    def __init__(self, value): c = MyClass(2)
        self.value = value     c.value → 2
    def get_offset_value(self): c.get_offset_value() → 3
        return MyClass.offset +
        self.value
```

Imports

```
import module
from module import class, function, variable
```

Frequently Used String Manipulations

string1 + string1	"str" + "ing" → "string"
"%s%s" % (string1, string2)	"%s%s" % ("s", "g") → "sg"
string.split("delim", limit)	"s/g".split("/") → ["s", "g"]
string.strip()	" string ".strip() → "string"
string.startswith("prefix")	"str".startswith("s") → True
substring in string	"str" in "string" → True

```
print string
```

List Comprehension

```
[ value for value in list if condition ]
e.g.
[x for x in [1,2,3,4,5,6,7,8,9] if x % 2 == 0] → [2,4,6,8]
```

Accessing Variable Values

```
value = dictionary[key]
value = dictionary.get(key, default_value)
value = list[index]           e.g. [5,6,7][2] → 7
value = string[start:end]     e.g. "string"[0:3] → "str"
value = list[start:end]       e.g. [1,2,3][1:2] → [2]
value = ClassName.class_variable
value = class_instance.instance_variable
value = class_instance.function(args)
```

Comparisons

value1 == value2	"str" == "str" → True
value1 != value2	"str" != "str" → False
value1 < value2	1 < 2 → True
value1 <= value2	2 <= 2 → True
value1 > value2	2 > 3 → False
value1 >= value2	3 >= 3 → True
value is [not] None	
value in list	1 in [2,3,4] → False
isinstance(class_instance, ClassName)	

Basic Arithmetic

i = a + b	i = a - b
i = a / b	i = a * b
i = a % b	e.g. 11 % 3 → 2

Comments

```
"""
    Multi-line comment
"""
# Line Comment
```

Control Flow

if conditional:	if i == 7:
<body>	print "seven"
elif conditional:	e.g. elif i == 8:
<body>	print "eight"
else:	else:
<body>	print str(i)
for value in list:	for i in [1, 2, 3, 4]:
<body>	e.g. if i == 2: continue
continue	if i == 3: break
break	print i
while conditional:	while True:
<body>	e.g. print "infinity"
continue	
break	

Exceptions

try:	try:
<body>	database.update()
raise Exception()	e.g. except Exception as e:
except Exception as e:	log.error(e.msg)
<exception handling>	database.abort()
finally:	finally:
<clean-up>	database.commit()

File & Path Manipulation

```
import os # import the os module first
os.path.join(path_segment1, path_segment2, ...)
os.path.exists(path)
os.listdir(directory_path)
os.remove(file_path)
os.rmdir(directory_path)
file = open(path, "rw")
file.read()
string.write("string")
```