Cheatography

Python Cheat Sheet

by Zhiend via cheatography.com/25837/cs/6962/

Addition

string + string	combine together
number +number	math - addition
string + number	crach

Data Types

String	a list of characters e.g. "abc123$%^", or empty string ""
Integer	whole numbers, and negative numbers e.g. -5, 0, 2, 99
Floating Point	decimal numbers e.g. 1.5, 2.0, -2.99
Boolean	True or False

True and False

True or anything is always True
False and anything is always False

Math

==	equal to
!=	no equal to
<	less than
>	v
<=	less than or equal to
>=	more than or equal to
%	Modulo, Find the remainder

Multiplication and Exponent

string * number	Combine that string
string* string	crash
number * number	Multiply (Math)
string ** string	CRASH!
number ** number	Exponent (Math)
string ** number	crash

Area of Circle

```
"""
Python Intro Assignment #2
name
student number
"""
#Ask the user for a radius of a circle
user_radius = input("What is a radius of a circle?")
#Convert the given radius to a floating point
radius = float(user_radius)
#Make a variable called pi
pi = float(3.1415)
#Calculate the area of the circle using exponents
area = pi(radius**2)
#Display the area of the circle to the user
print ("The area of the circle is", area)
```

Conditionals

If..... :then..... else.....	If the statement is true then do command under then else do command under else
while.....	While this is true loop the command under the conditional
While True	loops forever
for each item in name of list	For every item in the list repeat the command under the loop that many times. (a string is a list too)

List

```
#what do you think will be the output of the following code:
mastr = "hello123" # string is just a list of characters
number = [1,2,3,4,5,6]
print (number)
shoppinglist = ['shoes','bags','pants','shirts])
#how to add an item at the end of the list
shopping. append('ties')
print (shoppinglist)
for martin in shoppinglist
      print ('"' + martin + '"')
```

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Add str

```
number1 = 1.0
number2 = 2.0
sum = str(number1) + str(number2)
print(sum)
Ans: 3.0
```

Define

```
def bacon ():
    print ("hello it's bacon")
    return
bacon()
Ans : hello it's bacon
def myprint(text):
    print ("" + str(text) + "")
    return
myprint(1)
Ans : 1
def myprintnew(text,decoration) :
    print(decoration + str(text) +
decoration)
    return
myprintnew(1, "+++")
myprintnew(555, "+++")
Ans : +++1+++
+++555+++
def doubleIt (number) :
    return number * 2
print (doubleIt(5))
myvar = 12
myvar = doubleIt(myvar)
```

Define (cont)

```
print (myvar)
Ans : 10, 24
def areaOfcircle(r):
    if r <= 0:
        return "error: invalid
radius"
    pi = 3.1415
    area = pi r*2
    return area
user_radius =input("Enter the
radius: ")
r = float(user_radius)
print ('The area of the circle is',
areaOfcircle(r))
```

mix the item

```
my str = "hello123"
numbers = [1,2,3,4,5,6]
print (numbers)
shoppinglist = ['shoes', 'bags',
'pants', 'shirts']
print (shoppinglist)
mixed = [1, 'hello', 2.5,
True,False]
print (mixed)
```

Volume of prism

```
user_base = float(input("Enter the
base of triangle: "))
user_height = float(input("Emter
the hight of the triangle: "))
```

Volume of prism (cont)

```
user_lenght = float(input("Enter
the lenght of the triangle: "))
def volumeOfPrism (b,h,l):
    volume = 1/2 b h * l
    return volume
print("The volume of the prism
is",volumeOfPrism(user_base,user_he
ight,user_lenght))
```

Function Largest Value

```
def max2(num1,num2):
    largestvalue = num1
    if num1 > num2:
        num1 = largestvalue
    else:
        largestvalue = num2
    return largestvalue
def max3 (num1,num2,num3):
    if num1>num2 and num1>num3:
        largestvalue = num1
    elif num2>num3 and num2>num1:
        largestvalue = num2
    else:
        largestvalue = num3
    return largestvalue
print (max3(9,100,25))
print (max3(69,85,1))
print (max3(75,9,33))
def maxlist (list):
    largestvalue = list [0]
```

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Function Largest Value (cont)

```
    for item in list:
        if item > largestvalue:
            largestvalue = item
    return largestvalue
mylist = [1,2,3,4,103,100,89,57]
print (maxlist(mylist))
```

Vocabulary

Variable	hold a value and can be changed
String	a list of characters such as number, letter, symbol
Integer	Whole number / counting number
Input	Gain information
Float number	The number in decimal
Syntax	Grammar/Structure of lauguage
Modulo	Find the remainder
Boolean	True/False
Function	define block of code that can reuse
Parameter	some thing you give to the function
Argument	some thing you give to the function
function call	Something that make the fuction work

Function

print()	Show information that you want on the screen
int()	Change number to be number integer
float()	Change number to be decimal number
input()	Gain information from user
str()	A list of number, letter and symbols
len()	The length of the string
#	Comment, no effect

Naming Convention

Rule for giving name
- letter
- numbers
- underscore _

Valid name
- _myStr
- my3
- Hello_there

Invalid name
- 3my=”hi” -- cannot start with number
- first name=”hi”
- first-name
- first+name

Sort word per line

```
mystr = "Hello" letter_num = 0 while letter_num < len(mystr): print (mystr[letter_num]) letter_num = letter_num + 1
```

```
H
e
l
l
o
```

Number to Hex

```
user_number = input("please enter a number: ")
number = int(user_number)
hex_string = ' '
while (number > 0):
    remaider = number % 16
    if remaider == 10:
        remaider = 'A'
    elif remaider == 11:
            remaider = 'B'
    elif remaider == 12:
            remaider = 'C'
    elif remaider == 13:
            remaider = 'D'
    elif remaider == 14:
            remaider = 'E'
    elif remaider == 15:
            remaider = 'F'

    hex_string = str(remaider) + str(hex_string)
    number = number // 16
print ("Hexadecimal string is 0x", hex_string)
```

Random

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print (intlist,random_int)
fplist =
[1.69,2.69,3.69,4.69,5.69]
random_fp = random.choice(fplist)
print (fplist,random_fp)
strlist =
['one','two','three','four','five']
random_str =
random.choice(strlist)
print (strlist,random_str)
mylist = [1,1.69,'one']
random_item =
random.choice(mylist)
print (mylist,random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1,myvar2,myvar3]
random_var =random.choice(varlist)
print (varlist,random_var)
```

Palindrome

```
User_input = input("Type in an
string: ")
reverse = ""
for letter in User_input:
    reverse = letter + reverse
print ("Reverse: ", reverse)
palindrome = reverse
if User_input == palindrome:
    print ("you input is
palindrome")
```

Palindrome (cont)

```
else:
    print ("you input is not
palindrome")
```

Palindrome 2

```
while True:
    user_input = input("Enter the
word: ")
    if user_input == "quit" :
       break
    print (len(user_input))
    reverse = ""
    for letter in user_input:
        reverse = letter + reverse
    palindrome = reverse
    if user_input == palindrome:
        print (user_input," is
palindrome")
    else:
        print (user_input," is not
palindrome")
```

Palindrome 3

```
def isPalindrome(word) :
    reverse = ""
    for letter in user_input:
        reverse = letter + reverse
    palindrome = reverse
    if palindrome:
        return True
    else:
        return False



while True:
```

Palindrome 3 (cont)

```
    user_input = input("Enter the
word: ")
    if user_input == "quit" :
       break
    print (len(user_input))
    ispal =
isPalindrome(user_input)
    if ispal == True:
        print (user_input,"is a
palindrome")
    else:
        print (user_input,"is not a
palindrome")
```

Spelling a string out in reverse code

```
word = input("Type in an word: ")
reverse = ""
for letter in word:
    reverse = letter + reverse
print ("Reverse: ", reverse)
```

Area of triangle

```
user_base = float(input("Enter the
base of triangle: "))
user_height = float(input("Emter
the hight of the triangle: "))
def areaOfTriangle (b,h):
    area = 1/2 b h
    return area
print ("The area of the
triangle",areaOfTriangle(user_base,
user_height))
```

Example

```
Print (2) - integer
Print (2.5) - floating point
Print ("Hello") - string
Print (mystr) - variable
Print (mystr,"Hi",2,1.0) -- commas
mystr = "Hi"
mystr ← name
"Hi" ← value can change
print (int(1.5)) → 1
print (int("2")) → 2
print (float(1)) → 1.0 anything to
a float
Modulo/Remainder %
print (4%2) → 0
print (30%7) → 2
```

Print Name

```
name = "tim GIRARD"
print (name.upper()) → TIM GIRARD
print (name.lower()) → tim girard
print (name.capitalize()) → Tim
girard
print (name.title()) → Tim Girard
```

Name strip

```
firstname = input("what is your
first name? ")
lastname = input("what is your
lastname? ")
fullname = firstname + " " +
lastname
print("Your fullname is ")
print (fullname)
letternumber = input("what is
letter number? ")
```

Name strip (cont)

```
mynumber = int(letternumber)-1
if (mynumber) > len(fullname):
    print ("invalid letter number,
try again")
else:
    print (fullname[mynumber])
    repeat = input("how many times
you want to print the letter? ")
    myrepeat = int(repeat)
    if (myrepeat) > 99:
        print ("too many letter! ")
    else:
        print(fullname[mynumber]*
(myrepeat))
```

Reverse Word

```
while True:
          word = input("Please
enter a word")
          index = 0
          reverse = ' '
          while int(index) <
len(word):
                    reverse =
word[index] + (reverse)
                    index =
int(index) + 1
                    print
("Reverse: ", reverse)
```

Countdown Code

```
user_number = input("Please enter
a number: ")
number = int(user_number)
countdown_string = ""
while number > 0:
```

Countdown Code (cont)

```
    countdown_string =
countdown_string + " " +
str(number)
    number = number-1
print (countdown_string)
```

This prints the true or false value using boolean

```
print(True)
print (2<3)
print (2 != 2)
```

Convert to binary

```
user_number = ' '
while user_number != ' 0 ' :
         user_number = input
("Enter a number to convert to
binary")
         number =
int(user_number)
         binary_string = ' '
        while (number > 0):
                  remainder =
number%2
                  binary_string =
str(remainder)+ binary_string
                  number = number//2
print ("Binary string is",
binary_string)
```

Print definition

```
def printdefinition(word) :
    if word == "Variable" :
        print ("""
        A variable is something
that has volume. Also it can change
```

Print definition (cont)

```
        """)
    elif word == "Function" :
        print ("""
        A function is define block
of code that can reuse
        """)
    elif word == "Paramiter" :
        print ("""
        A parameter and argument
are some thing you give to the
function
        """)
    elif word == "Function call" :
        print ("""
        A function call is
something that make the fuction
work
        """)
    elif word == "String" :
        print ("""
        A string is a lis of
characters
        """)
    else:
        print ("Unkonw word")



    return

user_input = input("Enter the
word")
printdefinition(user_input)
```

Guessing Game

```
"""
Group Members: Mind and Gam
Class: 10-05
"""
chance = 5
score = 0
mylist = ['coke','bacon',
'chicken', 'pocky', 'pepsi',
'pizza']
import random
random_item =
random.choice(mylist)
while chance > 0:


    print ("-=-=-=-=-=-=-=-=-=-=-
=-=-=-=-=-=-=-=-=-=-")
    print ("Guessing Game")
    print ("-=-=-=-=-=-=-=-=-=-=-
=-=-=-=-=-=-=-=-=-=-")


    print ("Words:", mylist)


    user_guese = input("Guese the
word: ")
    if user_guese == random_item:
        score = score+100
        print ("That's correct!
Score:", score)
        random_item =
random.choice(mylist)
    else:
        chance = chance-1
        if user_guese in mylist:
            print ("Sorry, wrong
choice!")
            print ("Chances
Remaining:", chance)
        else:
            print ("Sorry, that is
not ever in the list")
            print ("Chances
Remaining:", chance)
```

Guessing Game (cont)

```
print ("Game Over! The word was",
random_item)
print ("Final Score:", score)
```

For-Loop with List:

```
forlist = [3, 4, 5, 2, 1]
for item in forlist:
 print(item)
```

While Loop with List

```
thelist = [4, 3, 2, 1, 0]
index = 0 # start at the first
item
while index < len(thelist):
 print (thelist[index]) #prints
each item
index = index + 1
```