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 = " hel lo1 23" # string is just a list of characters
number = [1,2,3 ,4,5,6]
print (number)
shoppi nglist = ['shoe s', 'ba - gs' ,'p ant s', 'sh irts])
#how to add an item at the end of the list
shopping. append ('t ies')
print (shopp ing list)
for martin in shoppi nglist
            print ('"' + martin + '"')
```

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Published 11th February, 2016.
Last updated 11th May, 2016.

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Add str

```
number1 = 1.0
number2 = 2.0
sum = str(nu mber1) + str(nu -
mber2)
print(sum)
Ans: 3.0
```

Define

```
def bacon ():
        print ("hello it's
bacon")
        return
bacon()
Ans : hello it's bacon
def myprin t(t ext):
        print" #" str(text) +
""")
        return
myprint(1)
Ans : 1
def myprin tne w(t ext ,de cor -
ation) :
        pri nt( dec oration +
str(text) + decora tion)
        return
myprin tnew(1, " +++ ")
myprin tne w(555, " +++ ")
Ans : +++1+++
+++555+++
def doubleIt (number) :
        return number * 2
print (doubl eIt(5))
myvar = 12
```

Define (cont)

```
> myvar = doubleIt(myvar)
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', areaOfcir-
cle(r))
```

mix the item

```
my str = "hello123"
numbers = [1,2,3 ,4,5,6]
print (numbers)
shoppi nglist = ['shoes',
'bags', 'pants', 'shirts']
print (shopp ing list)
mixed = [1, 'hello', 2.5,
True,F alse]
print (mixed)
```

Volume of prism

```
user_base = float(input("Enter
the base of triangle: "))
user_h eight = float( inp -
ut( " Emter the hight of the
triangle: "))
user_l enght = float( inp -
ut( " Enter the lenght of the
triangle: "))
def volume OfPrism (b,h,l):
        volume = 1/2*h * l
        return volume
print( "The volume of the prism
is", vol ume OfP ris m(u ser -
_ba se, use r_h eig ht, use -
r_l enght))
```

Function Largest Value

```
def max2(num1,num2):
        lar ges tvalue = num1
       if num1 > num2:
               num1 = larges -
tvalue
        else:
               lar ges tvalue =
num2
        return larges tvalue
def max3 (num1, num 2,n um3):
       if num1>num2 and
num1>num3:
               lar ges tvalue =
num1
       elif num2>num3 and
num2>num1:
               lar ges tvalue =
num2
        else:
               lar ges tvalue =
num3
        return larges tvalue
```


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Function Largest Value (cont)

```
> print (max3(9,100,25))
print (max3(69,85,1))
print (max3(75,9,33))
def maxlist (list):
    largestvalue = list [0]
    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

Vocabulary (cont)

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

Naming Convention (cont)

- 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(us er_ number)
hex_string = ' '
while (number > 0):
        rem aider = number % 16
       if remaider == 10:
                rem aider = 'A'
       elif remaider == 11:
                        rem - aider = 'B'
       elif remaider == 12:
                        rem - aider = 'C'
       elif remaider == 13:
                        rem - aider = 'D'
       elif remaider == 14:
```

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Number to Hex (cont)

```
>           remaider = 'E'
   elif remaider == 15:
          remaider = 'F'

   hex_string = str(remaider) + str(hex_s-
tring)
   number = number // 16
print ("Hexadecimal string is 0x", hex_st-
ring)
```

Random

```
import random
intlist = [1,2,3 ,4,5]
random_int = random.ch oic e(i -
ntlist)
print (intli st, ran dom _int)
fplist = [1.69, 2.6 -
9,3.69 ,4.6 9, 5.69]
random_fp = random.ch oic e(f -
plist)
print (fplis t,r and om_fp)
strlist = ['one' ,'t wo' ,'t -
hre e', 'fo ur' ,'f ive']
random_str = random.ch oic e(s -
trlist)
print (strli st, ran dom _str)
mylist = [1,1.6 9,' one']
random _item = random.ch oic -
e(m ylist)
print (mylis t,r and om_ item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar 1,m yva r2, -
myvar3]
random_var =rando m.c hoi ce( -
var list)
print (varli st, ran dom _var)
```

Palindrome

```
User_input = input("Type in an
string: ")
reverse = " "
for letter in User_i nput:
        reverse = letter +
reverse
print ("Re verse: ", reverse)
palindrome = reverse
if User_input == palind rome:
        print ("you input is
palind rom e")
else:
        print ("you input is not
palind rom e")
```

Palindrome 2

```
while True:
        use r_input = input( " -
Enter the word: ")
       if user_input == " qui t"
:
              break
        print (len(u ser _in -
put))
        reverse = " "
       for letter in user_i -
nput:
                reverse = letter
+ reverse
        pal indrome = reverse
       if user_input == palind -
rome:
                print (user_ -
inp ut, " is palind rom e")
        else:
                print (user_ -
inp ut, " is not palind rom e")
```

Palindrome 3

```
def isPali ndr ome (word) :
        reverse = " "
       for letter in user_i -
nput:
                reverse = letter
+ reverse
        pal indrome = reverse
       if palind rome:
                return True
        else:
                return False



while True:
        use r_input = input( " -
Enter the word: ")
       if user_input == " qui t"
:
              break
        print (len(u ser _in -
put))
        ispal = isPali ndr ome -
(us er_ input)
       if ispal == True:
                print (user_ -
inp ut, "is a palind rom e")
        else:
                print (user_ -
inp ut, "is not a palind rom e")
```

Spelling a string out in reverse code

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


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Area of triangle

```
user_base = float(input("Enter
the base of triangle: "))
user_h eight = float( inp -
ut( " Emter the hight of the
triangle: "))
def areaOf Tri angle (b,h):
       area = 1/2 h
        return area
print ("The area of the triang -
le", are aOf Tri ang le( use -
r_b ase ,us er_ hei ght))
```

Example

```
Print (2) - integer
Print (2.5) - floating point
Print ("Hello") - string
Print (mystr) - variable
Print (mystr  ," H i ",  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  /R e m ainder %
print (4%2) → 0
print (30%7) → 2
```

Print Name

```
name = "tim GIRARD "
print (name.u  p p er()) → TIM
GIRARD
print (name.l  o w er()) → tim
girard
print (name.c  a p i ta  lize())
→ Tim girard
print (name.t  i t le()) → 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)
letter number = input( "what is
letter number? ")
mynumber = int(le tte rnu mber)-
1
if (mynumber) > len(fu lln ame):
        print ("in valid letter
number, try again")
else:
        print (fulln ame [my -
num ber])
        repeat = input( "how
many times you want to print the
letter? ")
        myr epeat = int(re peat)
       if (myrepeat) > 99:
                print ("too many
letter! ")
        else:
                pri nt( ful -
lna me[ myn umb er] *(m yre -
peat))
```

Reverse Word

```
while True:
                    word =
input(  " P lease enter a word")
                     index = 0
                     reverse = '
'
                     while
int(index) < len(word):
                                    -
      reverse = word[i  ndex] +
(reverse)
                                    -
      index = int(index) + 1
                                    -
      print ("Re  verse: ",
reverse)
```

Countdown Code

```
user_number = input("Please
enter a number: ")
number = int(us er_ number)
countd own _string = " "
while number > 0:
        cou ntd own _string =
countd own _string + " " +
str(nu mber)
        number = number-1
print (count dow n_s tring)
```

This prints the true or false value using boolean

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


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Convert to binary

```
user_n umber = ' '
while user_n  umber != ' 0 ' :
                  use r_n  umber
= input ("Enter a number to
convert to binary  ")
                  number =
int(us  er _ n umber)
                  bin ary  _s -
tring = ' '
                while (number >
0):
                                -
  rem ainder = number%2
                                -
  bin ary  _s tring = str(re  -
ma i n der)+ binary  _s tring
                                -
  number = number//2
print ("Binary string is",
binary  _s t ring)
```

Print definition

```
def printdefinition(word) :
       if word == " Var iab le"
:
               print ("""
              A variable is
something that has volume. Also
it can change
               " " ")
       elif word == " Fun cti -
on" :
               print ("""
              A function is
define block of code that can
reuse
               " " ")
       elif word == " Par ami -
ter " :
               print ("""
              A parameter and
argument are some thing you give
to the function
```

Print definition (cont)

```
>       """)
   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.ch oic -
e(m ylist)
while chance > 0:
```

Guessing Game (cont)

```
>    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)
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:
  pri nt( item)
```


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While Loop with List

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

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Last updated 11th May, 2016.

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