Cheatography

Python cheat sheet - Cliff Cheat Sheet

by Kawazoe via cheatography.com/25791/cs/6922/

Function

print()	display given info.
input()	receives info from user
int()	converts a value to an integer
float()	converts a value to a floationg point
str()	converts a value to a string
len()	the length of the string
==	equal to
<=	less than or equal to
>=	more than or equal to
%	Modulo, Find the remainder
#	Comment, no effect on programming
whlie True	continues
for	looping forever
if...then	"if true" will work, "if false" won't work loop stops
//	int outcome
/	float outcome

Multiplication and Exponent

string * string	Crash
string*number	combines the string multiple times
number*number	Math - Multiply
string**number	Crash
number**number	Math - Exponent

Multiplication and Exponent (cont)

string**string	Crash

commands

import	imports program
random	given written program
random.choice()	random items in the list

Randomizer

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print (intlist,random_int)
fplist =
[2.0,2.1,2.2,2.3,2.4,2.5]
random_fp = random.choice(fplist)
print (fplist,random_fp)
strlist =
['a','b','c','d','e','f']
random_str =
random.choice(strlist)
print (strlist,random_str)
mylist = [1,9.9,"hello"]
random_mylist =
random.choice(mylist)
print (mylist,random_mylist)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1,myvar2,myvar3]
random_var =
random.choice(varlist)
print (varlist,random_var)
```

Max Value in list / Max value

```
def max2(num1,num2):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    return maxvalue
print (max2 (4,3))
print (max2 (3,22))
answer = max2 (1,5)
print (answer)
def max3(num1,num2,num3):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    if num3 > maxvalue:
        maxvalue = num3
    return maxvalue
print (max3 (10,7,8))
print (max3 (7,10,8))
print (max3 (7,8,10))
def maxlist(list):
    maxvalue = list[0]
    for num in list:
        if maxvalue < num:
            maxvalue = num
    return maxvalue
print (maxlist(range(0,101)))
mylist =
1,5,76,23,78,34,5678,2,5,8,675,2,6,
86,54,23,6,8
print (maxlist(mylist))
```

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Palindrome

```
"""
Cliff 1003
"""
def isPalindrome (word):
        index = 0
 # word[0] len(word)-1 -0
        numberOfLoops = 0
        while index <
1/2*len(word):
            numberOfLoops += 1
            print('Comparing',word[
index] ,word[len(word)-1-index])
            if word[index] ==
word[len(word)-1-index]:
                index = index + 1
            else:
                print
('loops:',numberOfLoops)
                return False


        print
('loops:',numberOfLoops)
        return True
while True:
    user_input =input("what is your
word? ")
    if user_input == "quit":
        break
    print (len(user_input))
    myword =
isPalindrome(user_input)
    if myword == True:
        print ((user_input),"is a
palindrome")
    else:
        print ((user_input),"isn't
a palindrome")
```

Vocabulary

Variable	something that can change
String	a list of characters
Print	display given info.
Syntax	Grammar/Structure of language
Modulo	Find the remainder
Boolean	True/False

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)
```

Convert into binary

```
user_number = ""
while user_number != ' 0 ':
    user_number = input ("Enter a
number to convert into 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)
```

Conditionals

if else	if the statement is true then do the command under. Else do command under else
elif	Similar to if else, but allows more conditions. (short abbreviation for if else
for loop	Will loop through every element of the set
while loop	A loop condition with conditions 1.initial value 2.ending condition 3.update
while true	While the statement is true keep looping
Concat enation	Joins the strings by linking then end to end

Finding the triangle (area,volume)

```
def areaoftriangle(num1,num2):
    area = 1/2num1num2
    return area
user_base = float(input('what is
your base of the triangle; '))
user_height = float(input('what is
your height of the triangle; '))
print ('The area of the triangle
is:
',areaoftriangle(user_base,user_hei
ght))
def
volofprism(base,height,prism_height
):
    volume =
areaoftriangle(base,height) *
prism_height
    return volume
user_prism = int(input('Enter the
prism height; '))
```

Finding the triangle (area,volume) (cont)

```
print ("The volume of the prism is; ",
volofprism(user_base,user_height,user_prism))
```

Guessing Game

```
import random
score = 0
chances = 5
print ("Score:", score)
print ("Chances:", chances)
mylist = ['apple', 'banana', 'orange', 'mango', 'cherry']
print (mylist)
random_item = random.choice(mylist)
while chances > 0 :
    user_guess = input("Guess a word:")
    if user_guess == random_item:
        print ("That's correct!")
        score = score+100
        print ("Score:", score)
        print ("Chances:", chances)
        random_item = random.choice(mylist)
    else:
        if user_guess in mylist:
            print ("Sorry, wrong choice!")
            chances = chances-1
            print ("Score:", score)
            print ("Chances:", chances)
        else:
            print ("Sorry, that is not even in the list")
            chances = chances-1
            print ("Score:", score)
            print ("Chances:", chances)
```

Guessing Game (cont)

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

Naming Convention

Rules for giving names
- letter
- numbers
- underscore_

Valid name
- _mystr
- my6
- Kawazoe_Kyousuke

Invalid name
- 3my = "whatever" #can't start with a number
- Kawa zoe = "whatever" #can't have space
- first-name = "somthing" #can't have "-"

Countdown Machine

```
user_number = input("What number do you want to countdown? ")
number = int(user_number)
countdown_string = ''
while number > 0
countdown = countdown_string - str(number) + " "
number = number - 1
#print(number)
print (countdown_string)
```

Math Operation Function Writing

```
def calc(num1,num2,operation):
    if operation == "sum":
        return sum(num1,num2)

    elif operation == "product":
        return product(num1,num2)

    elif operation == "diff":
        return diff(num1,num2)

    elif operation == "div":
        return div(num1,num2)

def sum(a,b):
    return (a+b)

def product(a,b):
    return (a*b)
def diff(a,b):
    return (a-b)
def div(a,b):
    if b != 0 :
        return a//b
    else:
        print ("ERROR")
print(calc(10,0,"div"))
print(calc(1,2,"sum"))
print(calc(4,2,"diff"))
print(calc(9,3,"div"))
print(calc(2,12,"product"))
```

True / False

True or ... / ... or True	True
False and ... / ... and False	False

22/03/16 code

```
'''
theList = ['1','2','3']
for item in theList:
    print(item)
'''
'''
index = 0
whileList = ['1','2','3','4']
while index < len(whileList):
    print (whileList[index])
    index = index + 1
'''
"""
while True:
    user_input = (input("your
word?: "))
    print ("your length of the word
is: ",len(user_input))
    if user_input == "exit":
        break
"""
"""
def theFunction():
    while True:
        user_input = input("word:
")
        if user_input == "stop":
            break
theFunction()
"""
"""
def computeThis(a1,b2):
    product = a1*b2
```

22/03/16 code (cont)

```
    print (product)
    return
computeThis (2,5)
"""
"""
def finalFunction(string):
    print ("",(string),"**")
    return
finalFunction ("cliff")
"""
```

print item using while

```
index = 0
whileList = ['1','2','3','4']
while index < len(whileList):
    print (whileList[index])
    index = index + 1
```

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