Python cheat sheet Cheat Sheet

by Milly via cheatography.com/25796/cs/6927/

Commands/ Functions

print()	displays information of the screen
input()	receives info from the the user
float()	converts a value to decimal
int()	integer; coverts a value to an integer
str()	string; coverts a value to a string
#	Comment; no effect

Vocabulary

variable	something that can change
string	a list of characters
Integer number	Whole number/ counting number
Float number	The number in decimal
Syntax	Grammar/ Structure of language
Modulo	Find the remainder
Boolean	True/False

Example

Print (2) – integer
Print (2.5) – float
Print (“Hello”) – string
Print (mystr) – variable
Print (str,”Hi”,2,1.0) – commas
mystr = “Hi”
mystr – name
“Hi” – value can change

Example (cont)

print (int(1.5)) – 1
print (int(“2”)) – 2
print(float(1)) - 1.0 anything to a float

Math

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

Addition

string + string	combines the strings together
string + number	crash
number + number	math (addition)

Multiplication and Exponents

string*string	CRASH!
string*number	combines the string multiple times
number*number	Multiply (Math)
string ** number	CRASH!
string ** string	CRASH!

Multiplication and Exponents (cont)

number ** number	Exponent (Math)

Naming Convention

Rule for giving name
- letter
- numbers
- underscore_
Valid name
- _myStr
- my3
- Hello_name
Invalid name
- 3my="hi" -- cannot start with number
- first name="hi"
- first-name

Reverse word

```
word = input("please enter a word.")
"""
letter_num = 0
reverse = ' '
while letter_num < len(word) :
    reverse = word[letter_num] + reverse
    letter_num = letter_num + 1
"""
reverse = ' '
for letter in word:
    reverse = letter + reverse
print ("Reverse: ",reverse)
```

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Countdown Machine

```
while True:
    user_number = input("Please enter a number")
    number = int(user_number)
    countdown_string = ""
    while number > 0:
        countdown_string = countdown_string + str(number)
        number = number - 1
    print (countdown_string)
```

List

```
shoppinglist = ['coke zero', 'bacon', 'water', 'jelly', 'gummy bears']
print (shoppinglist)
print (shoppinglist[0])
list_num =0
while list_num < len(shoppinglist):
    print ("List:", shoppinglist[list_num])
    list_num = list_num + 1
for item in shoppinglist:
    print (item)
numbers = range (1,6)
for num in numbers:
    print (num)
# a string is a list of characters, letters, numbers etc.
mystr = "hello"
for letter in mystr:
    print (letter)
shoppinglist = ['coke zero', 'bacon', 'water', 'jelly', 'gummy bears']
num = 0
for w in shoppinglist:
```

List (cont)

```
    num = num + 1
    print (num)
shoppinglist = ['coke zero', 'bacon', 'water', 'jelly', 'gummy bears']
num = 0
for w in shoppinglist:
    num = num + 1
print (num)
```

Finding area of a circle

```
while True:
    user_radius = input("Please enter the radius of the circle:")
    radius = float(user_radius)
    pi = 3.1415
    area = (pi*radius*2)
    print ("The area of the circle is", area)
```

Calculator program

```
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)
    # use if/elif/else to check what operation to do
    # call the correct function and return the answer
def sum (a, b):
     return a+b
```

Calculator program (cont)

```
    # calculate the sum of a and b
    # return the answer
def product (a, b):
    return a*b
    # calcualate the product of a and b
    # return the answer
def diff (a, b):
    return a-b
    # calculate the difference between a and b
    # return the answer
def div (a, b):
    if b!=0:
        return a/b
    else:
        return ("Error")
    # calculate the division of a and b
    # return the answer
print (calc (10, 0, "div"))
print (calc (1, 2,"sum")) # output should be 3
print (calc (4, 2, "diff")) # output should be 2
print (calc (9, 3, "div" )) # output should be 3
print (calc (2 ,12, "product" )) # output should be 24
```

Finding the area of the triangle and its prism

```
#write a function
#name: areaofTriangle
#parameters: base height
#return: area
user_base = float(input ('Enter the base of the triangle: '))
```

Finding the area of the triangle and its prism (cont)

```
user_height = float(input('Enter
the height of the triangle:'))
def areaOfTriangle (base, height):
    return 0.5*base*height #or 1/2
#functioncall
print ('The area of the triangle
is', areaOfTriangle(user_base,
user_height))
#write function compute volume of
prism
#name: volumeOfPrism
#parameters: base, height,
prism_height
#return volume
def volumeOfPrism
(base,height,prism_height):
    # area * prism_height
    volume = areaOfTriangle
(base,height) * prism_height
    return areaOfTriangle
(base,height) * prism_height
user_prism_height =
float(input('Enter the height of
the prism:'))
print ('The area of the prism is',
volumeOfPrism
(user_base,user_height,user_prism_h
eight))
```

Maximum

```
# write a function that returns the
largest of two values
# name: max2
# arguments: num1, num2
# return: the largest value
def max2 (num1,num2):
    maxvalue = num1

    if num2 > maxvalue:
        maxvalue = num2
    return maxvalue
print (max2(3,4))
# write a function that returns the
largest of three values
# name: max3
# arguments: num1, num2, num3
# return: the largest value
def max3 (num1,num2,num3):
    maxvalue = num1

    if num2 > maxvalue:
        maxvalue = num2

    if num3 > maxvalue:
        maxvalue = num3

    return maxvalue
print (max3(3,4,8))
# write a function that returns the
largest number in a list
# name: maxlist
# argument: list
# returns the largest value in the
list
def maxlist (list):
    maxvalue = list[0]
    for item in list:
        if item > maxvalue:
            maxvalue = item

    return maxvalue
list = [1,2,3,6,19,50,2,4,5]
print (maxlist(list))
```

1. Multiplying number

```
#Receive input from the user as a
float, and print out half of that
number. e.g. user enters 12.5,
print out 6.25
user_input = input("Please enter a
number:")
number = float(user_input)
finalnumber = 0.5*number
print(finalnumber)
```

2. Output

```
#What is the output of the
following code:
y = True
print (not y or 2<3)
#output is True
```

3. Error

```
message = "hello"
if (len(message) >5)
print ("Message too long")
else:
     print ("Message is good")
line 3 has an error because it has
no indent
```

4. Divisible by 3

```
#create a program to receive a
number from the user and determine
if that number
#is divisible by 3
user_input = input("Please enter a
number:")
number = int(user_input)
if number %3 == 0:
    print(number,"is divisible by
3")
else:
    print (number, "is not
divisible by 3")
```

5. Even Number

```
# print all the even numbers from 1 to 100 using a while loop
num = 2
while num <= 100:
    print (num)
    num = num+2
```

6. Output 2

```
#What is the output of the following code?
condition = True
number = 5
if condition == False: #False
    number = number ** 2
elif number <5: #False
    number = number * 2
elif condition == True: #True
    number = number%2 #5%2=1
else:
    number = number/2
print (number) # output = 1
```

7. my list (method 1)

```
#Given a list called mylist, print all elements from the list using a loop
mylist = ["Milly","Prim","Pizza"]
for item in mylist:
    print (item)
```

7. List: while loop (method 2)

```
#while loop solution
mylist = [1,2,3,4,5]
num = 0
while num < len(mylist):
    print (mylist[num])
    num = num+1
```

9. Multiplication Table

```
#Write a function called multiplicationTable that asks the user for a number and
#computes its multiplication table.
def multiplicationTable ():
    user_input = input ("Enter a number:")
    num = int(user_input)
    count=1
    while count <= 10:
        print (num,"",count,"=",numcount)
        count = count+1
#function call
multiplicationTable()
```

1) Multiply 5

```
#Write a program that receives input from the user, converts it to an integer,
#and print the product of the integer and 5
user_input = input("Please enter a number.")
user_input = int(user_input)
product = user_input * 5
print (product)
```

2) Output

```
#What is the output of the following code?
x = False
print (x and True or 1 == 1)
#False and True = False
# False or True = True
# output is True
```

3) Error 2

```
#condisder the following code
def doubleValue(value):
return value*2
print (doubleValue(4))
#line 2 has error because it is not indented
```

4) Types of number

```
#write a program that receives a number from the user and determines if that
#number is negative,zero or positive.
user_input = int(input("Please enter a number:"))
if user_input > 0:
    print (user_input,"is positive")
elif user_input == 0:
    print (user_input,"is zero")
else:
    print (user_input,"is negative")
```

5) Even numbers while loop

```
# write a program that prints all the even numbers from -100 to -1 using a
#while loop
num = -100
while num <= -2:
    print (num)
```

5) Even numbers while loop (cont)

```
    num = num + 2
```

6) Output 2

```
#What is the output of the
following code:
condition = 2<3 #True
number = 3
if condition != True: #True != True
;False
    number = number ** 2
elif number <= 0: #3 <= 0 ;False
    number = number * 3
elif number > 3: # 3>3 ; False
    number = number%10
else: #everything is False do must
do else
    number = number - 1 * 2 #
number - 2; 3-2=1; 1
print (number) # 1
```

8) 0.....

```
#complete the program below by
filling in the blank
# Expected output of program
# 0
# 01
# 012
# 0123
# 01234
mystring = ""
count = 0
while count <= 4:
    mystring = mystring
+str(count)
    print (mystring)
    count = count + 1
```

9) Area of Ellipse

```
# Write a function called
areaOfEllipse () that computes the
area of an ellipse
#using the equation pir1r2
# The function should be given 2
parameters (radius1 and radius 2)
and should
#return the area
def areaOfEllipse
(radius1,radius2):
    pi = 3.1415
    area = pi radius1radius2
    return area
#function call
area1 = areaOfEllipse(2,3)
print(area1)
```

11) Even and Odd

```
# Write a program that repeatly
receives positive integers from the
user. When
# the user enters a negative
integer, exit the loop and print
how many of the
# numbers entered were even and
odd.
evencount = 0
oddcount = 0
while True:
    user_input = int(input("Enter
a number:"))
    if user_input < 0:
        print ("Evencount=",
evencount)
        print
("Oddcount=",oddcount)
        break
    elif user_input > 0:
        if user_input % 2 == 0:
            evencount = evencount
+ 1
    else:
```

11) Even and Odd (cont)

```
        oddcount = oddcount + 1
```