Cheatography

Python Cheat Sheet

by pinpin via cheatography.com/25830/cs/6963/

Math of Symbols

==	Equal to
!=	No equal to
<	Less than
>	More than
<=	Less than or equal to
>=	More than or equal to
%	Modulo, find the remainder
+	Add
-	Subtract
*	Multiplication
**	Exponent
/	Divide and quotient is float
//	Divide and quotient is integer

Text

single quoted	'example'
double quoted	"example"

Functions

print()	display information on the screen
input()	display information from the user
int()	convert a value to an integer
len()	The length of the string
float()	Change number to be decimal number
str()	converts the value to a string
#	Comment, no effect

What's is your name? code

```
mystring = "hello"
print (mystring)
firstname = input( "what is your first name?")
lastname = input( "what is your last name?")
fullname = firstname + " " + lastname
print (fullname)
letternumber = int(input( " what is letter number? " ))
if letternumber >len(fullname):
    print ( " invalid letter number, try again! " )
else:
    letter = ( fullname[letternumber] )
    print (letter)
    numberletter = int(input( "how many times to print letter " ))
    if numberletter >100:
       print ( " too many letters to print! " )
    else:
        print (letter * numberletter )
```

hello
what is your first name?
what is your last name?

what is letter number?

how many times to print letter

List Random

```
import random
intlist = [1,10,100]
random_int = random.choice(intlist)
print(random_int,intlist)
fplist = [2,20,200]
ramdom_fp = random.choice(fplist)
print(ramdom_fp,fplist)
strlist = ('Pin','Anpan','Bella')
```

List Random (cont)

```
ramdom_str = random.choice(strlist)
print(ramdom_str,strlist)
mylist = [1,10,100,2,20,200,'Pin','Anpan','Bella']
ramdom_item = random.choice(mylist)
print(ramdom_item,mylist)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1,myvar2,myvar3]
random_var = random.choice(varlist)
print(random_var,varlist)
```

10 [1, 10, 100]
200 [2, 20, 200]
Bella ('Pin', 'Anpan', 'Bella')
2 [1, 10, 100, 2, 20, 200, 'Pin', 'Anpan', 'Bella']
3 [1, 2, 3]

bacon()

```
def bacon():
    print("hello it's bacon")
    print("line 2")
    print("line 3")
    print("line 4")
    return
bacon()
bacon()
bacon()
```

hello it's bacon
line 2
line 3
line 4
hello it's bacon
line 2
line 3
line 4
hello it's bacon
line 2
line 3
line 4

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myprintnew (text, decoration)

```
def myprintnew (text, decoration):
    print(decoration + str(text) + decoration)
    return
myprintnew(1, "+++")
myprintnew('hello','-=-=-=-=-=-=-=-=-=')
myprintnew(1, "@@@@@@@")
```

```
+++1+++
-=-=-=-=-=-=-=-=hello-=-=-=-=-=-=-=-=
@@@@@@@1@@@@@@@
```

area of a triangle

```
def areaofTriangle(b, h):
    area = 0.5 b h
    return area
user_base = float(input('Enter the base of the triangle:'))
user_height = float(input('Enter the height of the triangle:'))
print('The area of the triangle is',areaofTriangle(user_base, user_height))
def volumeofPrism(b,h,l):
    volume = areaofTriangle(b, h) *l
    return volume
user_lenght = float(input('Enter the length of the prism: '))
print('The volume of the prism is',volumeofPrism(user_base, user_height, user_lenght) )
```

```
Enter the base of the triangle:11111
Enter the height of the triangle:2222
The area of the triangle is 12344321.0
Enter the length of the prism: 3333
The volume of the prism is 41143621893.0
```

Vocabulary

Variable	Hold a value and can be changed
String	A list of characters such as number, letters, symbols
Integer number	Whole number/ counting number
Float number	The number in decimal
Syntax	Grammar / Structure of language
Modulo	Find the remainder
Boolean	True / False

Naming Conventions

Rules for naming variables:
- letters
- numbers
- underscores (_)
- can start with letters or underscores ONLY
- NO SPACES

Valid names:
- _mystr
- my3

Hello_there

Invalid names:
- 3my= "hi" -- cannot start with number
- first name = "hi" -- no spaces allowed
- first-name -- dashes are not accepted

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
```

A radius of a circle code

```
#Ask the user for a radius of a circle
user_radius =input("What is the radius of the circle?")
#Convert the given radius to a floating point
radius = float(user_radius)
#make a variable called pi
pi = 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)
```

```
What is the radius of the circle?123
The area of the circle is 47527.753500000006
```

Reverse Code

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

```
Please enter your name: Timmy
Reverse: ymmiT
```

myprint(text)

```
def myprint(text):
    print("" + str(text) + "")
    return
myprint(1)
myprint("hello")
myprint(2.5)
```

1
hello
2.5

areaOfCircle(r)

```
def areaOfCircle(r):
    if r <= 0:
        return "Error: invalid
radius"
    pi = 3.1415
    area = pi  r * 2
    return area
user_radius = float(input("Enter
the radius:"))
print ('The area of the circle is',
areaOfCircle(user_radius))
```

```
Enter the radius:300
The area of the circle is 282735.0
Enter the radius:0
The area of the circle is Error: invalid radius
```

_var1

```
_var1 = 1
_var1 = 3
_var1 + 100
print(_var1)
```

```
3
```

maxlist

```
def maxlist(list):
    maxvalue = list[0]
    for item in list:
        if item > maxvalue:
            maxvalue = mylist
    return maxlist
mylist =
[21365741,2135416,2,54131,1.1515]
print(maxlist(mylist))
```

maxvalue

```
def max2(num1,num2):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    return maxvalue
print('The largest number
is',max2(2,3))
print('The largest number
is',max2(12222,10))
def max3(num1,num2,num3):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    if num3 > maxvalue:
        maxvalue = num3

    return maxvalue
print('The largest number
is',max3(1,5,10))
```

maxvalue (cont)

```
print('The largest number
is',max3(12222,5,10))
print('The largest number
is',max3(12222,164.3415645,12134856
1240))
```

```
The largest number is 3
The largest number is 12222
The largest number is 10
The largest number is 12222
The largest number is 121348561240
```

Multiplication and Exponents

string * number	combine that string multiple times
string * string	crash
number * number	math - multiply
string ** string	crash
number ** number	math - multiply
string ** number	crash

Addition

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

Conditionals

If.....	If the statement is true then do
:then.....	command under then else do
else.....	command under else

Conditionals (cont)

while.....	While this is true loop the command under the conditiona
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)

Big or small code

```
mystr = "hello THERE"
print (mystr.upper())
print (mystr.lower())
print (mystr.capitalize())
print (mystr.title())
```

HELLO THERE
hello there
Hello there
Hello There

Please enter a number Code

```
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)
```

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

Shoping List code

shoppinglist = ['shoes', 'bags', 'shirts', 'pants']
index = 0
while index < len(shoppinglist):
print (shoppinglist[index])
index = index + 1
for item in shoppinglist:
print (item)

shoes
bags
shirts
pants
shoes
bags
shirts
pants

printDefinitions

```
def printDefinitions(word):
    if word =="variable":
        print ('....')
    elif word =="function":
        print ('....')
    elif word =="parameter":
        print ('....')
    elif word =="argument":
        print ('....')
    elif word =="function call":
        print ('....')
    elif word=="string":
        print ('....')
    else:
        print("unknown word")
    return
while True:
    user_input = input("Enter word: ")
    printDefinitions(user_input)
```

Enter word:

area of a triangle

```
def areaofTriangle(b, h):
    area = 0.5 b h
    return area
user_base = float(input('Enter the base of the triangle:'))
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print('The area of the triangle is',areaofTriangle(user_base, user_height))
def volumeofPrism(b,h,l):
    volume = areaofTriangle(b, h) *l
    return volume
user_lenght = float(input('Enter the length of the prism: '))
print('The volume of the prism is',volumeofPrism(user_base, user_height, user_lenght) )
```

Enter the base of the triangle:11111
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The area of the triangle is 12344321.0
Enter the length of the prism: 3333
The volume of the prism is 41143621893.0

doubleIt(number)

```
def doubleIt(number):
    return number*2
print (doubleIt(3))
print (doubleIt(doubleIt(4)))
myvar = 12
myvar= doubleIt(myvar)
myvar= doubleIt(myvar)
print(myvar)
```

6
16
48