Cheatography

Python Cheat Sheet Cheat Sheet

by primmito via cheatography.com/25788/cs/6920/

Vocabulary

Variables	a value that can change, depending on conditions or on information passed to the program.
String	list of characters, symbols and could also have numbers.
Syntax	structure of a program.
Print	to display a value on the screen
Loop	when the instructions repeat over and over.
Integer Number	Whole number/ counting number
Float Number	The number in decimal
Modulo	Used to finds the remainder
Boolean	True/False
List	Writing consecutive words, numbers down, one below the other in []
Algorithm	A list of steps to finish something. Instructions that can be performed with or without a computer.
Code	Commands created to allow computer to perform the functions.

Addition

string + string	Combines that strings together (squished together)
string + number	Crash!
number + number	Addition (Math)

Random List

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print (intlist, random_int)
fplist = [1.0,2.0,3.0,4.0,5.0]
random_fp = random.choice (fplist)
print (fplist, random_fp)
strlist = ["candy",
"marshmellow", "icecream",
"lollipop"]
random_str = random.choice
(strlist)
print (strlist, random_str)
mylist =[1,2,3, 5.0,6.0,7.0,
"Candy", "Icecream", "Gummybears"]
random_item = random.choice
(mylist)
print (mylist, random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1, myvar2, myvar3]
random_var = random.choice
(varlist)
```

Random List (cont)

```
print (varlist, random_var)
```

Counting Down

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

    print (countdown_string)
```

Area of Triangle

```
#write a function
#name: areaofTriangle
#parameter: base height
#return: area
def areaofTriangle (base, height):
    return 1/2*baseheight
user_base= float(input("Enter the
base of the triangle: "))
user_height= float(input("Enter the
height of the triangle: "))
#function call
print ("The area of the triangle
is", areaofTriangle (user_base,
user_height))
```

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Returning largest value

```
#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 (2,3))
print (max2 (2,99))
print (max2 (2,55))
#write a function that returns the largest of three values
# name: max3
# arguments: num1, num2, num3
#return: the largest value
```

Function

float()	Change number to be decimal number.
print()	Show information that you want on the screen.
int()	Change the number/string into a integer.
str()	A list of number, letter and symbols.

Function (cont)

input()	Gain information from user.
len()	The length of the string

Multiplication and Exponents

string * number	Combines that string in the amount of numbers.
string *string	Crash!
number * number	Multiple (Math)
string **string	Crash!
number ** number	Exponent (Math)
string ** number	Crash!

Countdown Machine

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

Countdown Machine (cont)

```
print (countdown_string)
```

F

```
def myprint (text): #text is (something your giving to the function) an argument (parameter) to the function
    print (" " + str(text) + "")
    return #This exits the function
myprint(1)
myprint(2.5)
myprint ("hello")
def myprint2 (text, decoration):
    print (decoration + text + decoration)
    return
myprint2 ("hello", "+++")
myprint2 ("hello", "_=_=_=")
myprint2 ("hello", ">>>>>>")
def double (number):
    return number * 2 #return value
print(double(2))
myvar = double(double(3)) #same as double (6) because double(3) == 6
print(myvar)
```

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Receives number from user. State if Neg,Pos,Zero

```
while True:
    user_input = input ("Enter a number: ")
    user_input = int(user_input)
    if user_input > 0:
        print (user_input, "is positive.")
    elif user_input < 0:
        print (user_input, "is negative.")
    elif user_input == 0:
        print (user_input, "is zero.")
```

Area of Circle

```
def areaOfCircle (r): #r=radius
    pi = 3.1415
    area = pi  r *2
    return area
user_radius = input ("Enter the radius:")
radius = float(user_radius)
print ("The area of the circle is", areaOfCircle(radius))
```

mylist, print all item using loop

```
mylist = [1,2,3]
for item in mylist:
    print (item)
```

Ask input from user

```
user_input = input("Enter a number:")
user_input = int (user_input)
print (user_input*5)
```

Output

```
x = false
print (x and True or 1 ==1)
#OUTPUT = TRUE
```

returning largest value continue

```
def max3 (num1, num2, num3):
    maxvalue = num1

    if maxvalue < num2:
        maxvalue = num2
    if maxvalue < num3:
        maxvalue = num3
    return maxvalue
print (max3 (8,4,3))
#write a function that returns the largest number in the list
#name : maxlist
#argument: list
#return: the largest value in the list
```

Naming Convention

```
Rules for giving names
- letters
- numbers (Can't be the first letter)
- underscore _
Valid
- _mystr
- my3
- Hello_there
Invalid name
- 3my="hi" -- cannot start with number
-firstname ="hi"
= first-name
```

Examples

```
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
```

Reverse Word

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

Function

```
#how to create a function 1
def NameofFunction (myvar1,
myvar2):
    print ("hello")
    return myvar1, myvar2
#function call
NameofFunction (2, 3)
#Code above, prints only hello
#2
def NameofFunction (myvar1,
myvar2):
    print ("hello")
    return myvar1 + myvar2
#function call
NameofFunction (2, 3)
myanswer = NameofFunction (4,1)
print (myanswer)
#code 2 prints out hello hello and
5
```

Operations

```
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")
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)

print (calc(1,2, "sum"))
print (calc(4,2, "diff"))
print (calc(10,0, "div"))
print (calc(2,12, "product"))
```

Volume Of Prism

```
#Write the function compute volume
of prism
#name: volumerOfPrism
#Parameter: base, height,
prism_height
#return volume
def volumeOfPrism (base, height,
prism_height):
    #area * prism_height
    volume = areaOfTriangle
(base,height)* prism_height
    return volume
user_prism_height =
float(input("Enter the prism
height: "))
print ("The volume of the prism
is", volumeOfPrism (user_base,
user_height, user_prism_height))
```

Print all even numbers from -100 to -1. While loop

```
mynum = -100
while mynum <-1:
    print (mynum)
    mynum= mynum + 2
```

returning largest value continue2

```
def maxlist (list):
    maxvalue =(list[0])
    for item in list:
        if maxvalue < item:
            maxvalue = item
    return maxvalue
print (maxlist(range(0,123)))
```