Cheatography

# Python 123 Cheat Sheet

by kawkub1 via cheatography.com/25790/cs/6924/

## Vocabulary

| | |
|---|---|
| Variable | Something that can be change |
| String | A list of characters |
| Integer Number | Whole number/counting number |
| Float Number | The number in decimal |
| Syntax | Grammar |
| Modulo | Remainder |
| Boolean | True&False |

## Function

| | |
|---|---|
| print() | display info. on the screen |
| input() | receives info from the user |
| int() | convert a value to an interger |
| float() | convert a value to a floating point |
| str() | convert a value to a string |
| len() | The length of the string |
| # | comment |
| if then else | if ... is True "then" will work or if it False then "else" will work |
| While: True | Forever Loop |
| for | Looping Forever |

## Function largest number

```
def max2(num1,num2):
    if num1 > num2:
        maxvalue = num1
    elif num2 > num1:
        maxvalue = num2
    return maxvalue

#function call
print(max2(92,3))
print(max2(4,5))
def max3(num1,num2,num3):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    elif num3 > maxvalue:
        maxvalue = num3
    return maxvalue
#function call
print(max3(92,5,6))
print(max3(8,9,7))
print(max3(99,40,49))
def maxlist(list):
    maxvalue = list[0]
    for num in list:
        if maxvalue < num:
            maxvalue = num
    return maxvalue
mylist = 3,5476,134,8,451,87
print (maxlist(mylist))
```

## Naming Convention

Rules for giving name

-letter

-numbers

-underscores

Valid Name

- _myStr

- my3

- Hello_there

Invalid Name

- 3mt = "hi" -- cannot start with number

- first name = "hi"

- first-name

## Volume and Triangle

```
def areaOfTriangle(base,height):
    area=1/2 base height
    return(area)
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))
def volumeOfPrism(base,height,prism_height):
    volume = areaOfTriangle(base,height) * prism_height
    return (volume)
user_prism_height = float(input('Enter the prism height:'))
```

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## Volume and Triangle (cont)

```
print ('the volume of the prism
is', volumeOfPrism(user_base,
user_height, user_prism_height))
```

## Palindrome

```
def isPalindrome(word):
    if reverse_item == user_word:
        return "true"
    else:
        return "false"
while True:
    user_word = input('What is the
word: ')
    length = len(user_word)
    if user_word == 'quit':
        break
    else:
        print("Length of the word
is: ",(length))

    reverse = ""
    for item in user_word:
        reverse = item + reverse
    reverse_item = reverse
    s = 0
    while s < length / 2 + 1 :
        if reverse_item[s] ==
user_word[s]:
            print(user_word, "is a
palindrome")
            break
            s = s + 1
        else:
            print(user_word, "is
not a palidrome")
            break
```

## Math

| | |
|---|---|
| = = | equal to |
| != | not equal to |
| < | less than |
| > | greater than |
| <= | less than or equal to |
| >= | greater than or equal to |
| % | Modulo, Find the remainder |

## Addition

| | |
|---|---|
| String + String | combine together |
| string + number | CRASH |
| number + number | math |

## Multiplication and Exponent

| | |
|---|---|
| string * number | combine the string |
| string * string | CRASH |
| number * number | math |
| string ** string | CRASH |
| number ** number | Math |
| string ** number | CRASH |

## Example

Print (2) -interger

Print (2.4) - Floating Point

Print (myStr) - variable

Print ("Hello") - string

Print (myStr,"Hi",2,1,0) -- commas

myStr = "Hi"

mystr - name

"Hi" - value can change

print (int(1.5)) - 1

## Example (cont)

print (float(1)) - 1.0

print (4%2) - 0

## Randomizer

```
"""
Group member: Kim, Pop, and Earn
Group: 10-03
"""
import random
mylist = ('lion' , 'tiger' , 'dog'
, 'bee' , 'cat')
print (mylist)
random_item =
random.choice(mylist)
print (random_item)
chance = 7
score = 0
while chance > 0:
    user_guess = input("Guess a
word: ")
    if user_guess == random_item:
        score = score + 100
        print ("That's Correct!")
        print ('score=',(score))
        random_item =
random.choice(mylist)

    else:
        if user_guess in mylist:
            chance = chance - 1
            print ("Sorry, wrong
choice")
            print ("chance =",
(chance))
            print ("The word is:
",random_item)
            random_item =
random.choice(mylist)
```

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## Randomizer (cont)

```
            print ("score",
(score))
        else:
            chance = chance - 1
            print ("Sorry, that is
not even in the list")
            print ("chance =",
(chance))
            random_item =
random.choice(mylist)
            print ("score",
(score))
    if chance == 0:
        print ("GAME OVER!")
        print (' Answer =',
(random_item))
        print ("Final Score =",
(score))
```

## Area

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

## Calculating 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":
```

## Calculating Program (cont)

```
        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):
    return (a / b)
print (calc(1,2,"sum"))
print(calc (4,2, "diff"))
print (calc (9, 3, "div"))
print(calc (2, 12, "product"))
```

## Palindrome2

```
'''
Kim Jaroensattayatham(1003)
'''
def isPalindrome(word):
    index = 0
    reverse = ""
    while int(index) < len(word):
        reverse = word[index] +
reverse
        index = int(index) + 1
    if reverse == user_input:
        return "true"
    else:
        return "false"
while True:
    user_input = input("please
enter the word")
```

## Palindrome2 (cont)

```
    if user_input == "quit":
        break
    print(len(user_input))
    print(isPalindrome(user_input))
```

## Reverse Word

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

## Convert To BInary

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

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## Countdown Machine

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

## IMPORT

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print(intlist, random_int)
fplist = [1.0,1.2,1.3]
random_fp = random.choice(fplist)
print(fplist, random_fp)
strlist = ['a','b','c','d','e']
random_str =
random.choice(strlist)
print(strlist, random_str)
mylist = [1,1.0,'hello']
random_item =
random.choice(mylist)
print (mylist, random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist =[myvar1,myvar2,myvar3]
random_var =
random.choice(varlist)
```

## IMPORT (cont)

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

## Asking Name Code

```
firstname = input(" what is your firstname? ")
lastname = input(" what is your lastname?")
fullname = firstname + " " + lastname
print (fullname)
letternum = int(input(" what is the letter number? "))
if len(fullname) < letternum :
print("Invalid letter number, try again! ")
else :
print (fullname[letternum])
letterprint = int(input(" how many time to print letter "))
if letterprint > 100 :
print (" too many letters to print ")
else :
print (fullname[letternum] * letterprint)
```

## rdtfghjbkn

```
'''
theList = ('A' , 'B' , 'C' , 'D')
for item in theList:
    print (item)
whileList = ('a' , 'b' , 'c')
index = 0
while index < len(whileList):
    print(whileList[index])
    index = index + 1
```

## rdtfghjbkn (cont)

```
while True:
    user_input = input("Enter your word")
    print (len(user_input))
    if user_input == "exit":
        break
def theFunction():
    while True:
        user_input = input ("Enter the word:")
        if user_input == "stop":
            break
#call the function
theFunction()
def computeThis(a1,b2):
    theproduct = a1 * b2
    print(theproduct)
    return
computeThis(1,2)
'''
def finalFunction(string):
    print("*",string,"*")
    return
finalFunction("Kim")
```


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