Python Cheat Sheet

by JBear via cheatography.com/25803/cs/6928/

Vocabulary

Variable	something that can chage
String	a list of characters
Integer number	whole number/counting number
Float number	the number in decimal
Syntax	grammar/structure of lauguage
Modulo	find the remainder
Boolean	true/false
Parameter/Argument	variable next to name of function

Multiplication and Exponents

string*number	Combine that string (repeat string)
string*string	Crash
number*number	Multiply (Math)
string**string	Crash
number**number	Exponent (Math)
string**number	Crash

Combining Strings

```
"hi" + "there" == "hithere"
"hi" * 5 == "hihihihihi"
```

Forever While Loop

```
while True: # forever
 user_input = input('Enter a
number: ')
 number = int(user_input)
 print ('The number squared is',
number ** 2)
```

Conditional While Loop

```
count = 0 # start at zero
while count < 10: # loop while
count is less than 10
 print(count) #will print numbers 0
- 9
 count = count + 1 # must increase
count
```

For-Loop with List

```
forlist = [3, 4, 5, 2, 1]
for item in forlist:
 print(item)
```

Range()

```
#creates a list of numbers from 0
to the specified
number
numberlist = range(5)
# is the same as creating the
following list
numberlist2 = [0, 1, 2, 3, 4]
for num in range(100):
 print (num) # prints all numbers
from 0 - 99
for num in range(5, 50):
 print(num) #prints all numbers
from 5 - 49
```

Lists

```
mylist = [2,3,4,5] # create a list
#select an item from a list
print (mylist[0]) #selects first
item and displays 2
```

Lists (cont)

```
# len() determines the length of
the list
print (len(mylist)) # displays 4
mylist.append(5) # adds an item to
the end of the list
```

Example of List

```
mylist = [2,3,4,5] # create a list
#select an item from a list
print (mylist[0]) #selects first
item and displays 2
# len() determines the length of
the list
print (len(mylist)) # displays 4
mylist.append(5) # adds an item to
the end of the list
```

Note

- [redacted] remainder [redacted] 0
- str [redacted] = "2" 3 = 222
- [redacted] 2 [redacted] 0
- [redacted] 2 [redacted] 1

Different between [ ] and ( )

[ ] = uses for arrange ([redacted])
( ) = uses for print, condition, etc.

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Math

==	equal to
!=	not equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to
%	modulo, find the remainder

Addition

string + string	Combine together
string + number	Crash
number + number	Addition (Math)

Create Function Calculate

```
def calc(num1, num2, operation):
    if operation == "sum":
        return sum(num1, num2)
    elif operation == "diff":
        return diff(num1, num2)
    elif operation == "div":
        return div(num1, num2)
    elif operation == "product":
        return product(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
```

Create Function Calculate (cont)

```
    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"))
```

Example for How to create Function

```
def areaOfTriangle(base,height):
    return 0.5*base*height
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_h
eight))
def
volumeOfPrism(b,h,prismheight):
    volume =
areaOfTriangle(b,h)*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)
```

From Work Sheet

```
Write a program that repeatedly
receives positive integers from the
user. When the user enters a
negative integer, exit the loop an
print how many of the number
entered were odd and even.

evencount = 0
oddcount = 0
```

From Work Sheet (cont)

```
while True:
     num = int(input("Enter: "))
     if num<0:
        print("Even: ",evencount)
        print("Odd: ",oddcount)
        break
     else:
        if num%2 =0:
           evencount =
evencount+1
        else:
           oddcount = oddcount + 1
```

Count Worksheet2

```
Complete the program below by
filling in the blank:
Expected output of program:
0
01
012
0123
01234
mystring = ""
count = 0
while count < 5
   mystring = mystring +
str(count)
   count = count +1
```

From worksheet 3

```
Use a for loop to print the
following:
0
012
0123
```

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From worksheet 3 (cont)

```
01234
mystring = ""
for num in range(5)
     mystring = mystring + str(num)
     print (mystring)
```

Function

print()	displays information on the screen
int()	converts a value to an integer
str()	converts a value to a string
float()	converts a value to a floating point
input()	receives info from the user
len()	the length of the string
#	comment, no effect
def	create function
return	exit the function
break	exit the loop

Example for counting down number

```
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)
The result will be:
Please enter a number 5
```

Example for counting down number (cont)

```
54321
```

Number to binary

```
user_number = input("Enter number
to convert to binary : ")
number = int(user_number)
binary_string = ''
while (number > 0):
    remainder = number % 2
    binary_string =
str(remainder) +
str(binary_string)
    number = number // 2
print ("Binary string
is",binary_string)
```

Example of how to random

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print(intlist, random_int)
fplist = [1.0,2.0,3.5,4.4,5.6]
random_fp = random.choice(fplist)
print(fplist, random_fp)
strlist = ['1','2','3','4','5']
random_str =
random.choice(strlist)
print(strlist, random_str)
mylist = [1,1.0,'a']
random_item =
random.choice(mylist)
print(mylist, random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1,myvar2,myvar3]
```

Example of how to random (cont)

```
random_var =
random.choice(varlist)
print(varlist, random_var)
```

Example for calculate in python

```
while True:
    #Ask the user for a radius of a
circle
    user_radius = input("Please
enter 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 exponent
    area = pi*radius*2
    #display the area of the circle
to the use
    print ("The area of the circle
is", area)
```

From worksheet 4

```
Create a program to receive a
number from the user and determine
if that number is divisible by3.
Example:
- 9 is divisible by 3.
- 7 is not divisible by 3.
user_num = input("Enter the number:
")
if user_num%3 == 0:
   print(user_num, "is divisible by
3")
else:
   print(user_num, " is not
divisible by 3")
```

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