Cheatography

JaPython Cheat Sheet

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Vocabulary

variable	something that can change
string	a list of characters

Function

print()	show information that you want on the screen
int()	Change number to be number integer
float()	Change number to be decimal number
input()	Gain information from user
str()	A list of number, letter and symbols
len()	The length of the string
#	Comment, no effect

Vocabulary

Variable	Hold a value and can be change
String	A list of character such as number, letter and 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

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

Create Function

```
def calc(num1, num2, operation):
    # use if/elif/else to check what operation to do
    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)
    #call the correct function and return the answer
def sum(a, b):
    return a + b
    # calculate the sum of a and b
    # return the answer
def product(a, b):
    return a *b
    # calculate the product of a and b
    # return the answer
def diff(a, b):
    a - b
```

Create Function (cont)

```
    #calculate the difference between a and b
    # return the answer
def div(a, b):
    if b != 0:
        return a /b
    else:
        print("Error")
    #calculate the division of a and b
    # return the answer
print(calc(10, 0, "div")) # division by zero
print(cal(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
```

Math

==	equal to
!=	no equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to
%	Modulo, Find the remainder 33 % 10 == 3

// divide with answer as an integer. E.g. 5//2 == 2

/ divide with answer as a float. E.g. 5/2 == 2.5

True or anything is always True False and anything is always False

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Addition

string + string	Combine together
string + number	CRASH!
number + number	Addition (Math)

Multiplication and Exponents

string * number	Combine that string
string* string	CRASH!
number * number	Multiply (Math)
string ** string	CRASH!
number ** number	Exponent (Math)
string ** number	CRASH!

Define 1

```
# write definitions for the following words
# use a multi-line string to print them to the screen
def printDefinitions(word): # define the function named printDefinitions
    if word == "variable":
        # variable
        print ("""
        a variable is reserved memory locations to store values.
        """)
    elif word == "function":
        #function
        print ("""
        a function is block of organized
        """)
    elif word == "function call":
        #function call
        print ("""
```

Define 1 (cont)

```
        a function call is function that already have code, and use it.
        """)
    elif word == "parameter":
        #parameter
        print ("""
        a parameter is something that put in function to define variable.
        """)
    elif word == "argument":
        #argument
        print ("""
        a argument is parameter
        """)
    elif word == "string":
        #string
        print ("""
        a string is characters in quotes
        """)
    else:
        print ("Unknown word")

while True:

    user_input = input("Enter a word to define: ")
    printDefinitions(user_input) # function call
```

Reverse Word

```
while True:
word = input("Please enter a word")
index = 0
reverse = ' '

while int(index) < len(word):
        reverse = word[index] + (reverse)
        index = int(index) + 1
```

Reverse Word (cont)

```
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)
```

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)

print (countdown_string)
```

Naming Convention

Rule for giving name
- letter
- numbers
- underscore_

Valid name

Naming Convention (cont)

- _myStr
- my3
- Hello_there

Invalid name

- 3my="hi" -- cannot start with number
- first name="hi"
- first-name

Python

```
import random
intlist = [1,2,3,4,5]
random_int = random.choice(intlist)
print (intlist, random_int)
fplist = [1.5,2.5,3.5,4.5,5.5]
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, 2, 3, 4, 5, 1.5, 2.5, 3.5, 4.5, 5.5, '1', '2', '3', '4', '5']
random_item = random.choice(mylist)
print (mylist, random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = [myvar1, myvar2, myvar3]
random_var = random.choice(varlist)
print (varlist, random_var)
```

radius

```
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 cicle is", area)
```

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