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!

Conditionals

if.....	if the statement is true then do
:then....	command under then else do
else....	command under else
while.....	while this is true loop the command under the conditional
While True	loops forever
for each	For every item in the list repeat
item in name of list	the command under the loop that many times. (a string is a list too)

boolean

```
print (True)
print (2<3)
print (2 != 2)
```

Example

```
Print (2) - integer
Print (2.5) - floating point
Print ("Hello") - string
Print (mystr) - variable
Print (mystr, "Hi" ,2,1.0) - - commas
```

Example (cont)

```
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/Remember %
print (4%2) #0
print (30%7) #2
```

palindrome

```
reverse = ""
letter_num = 0
word = input('type in a word: ')
while letter_num < len(word):
    reverse = word[letter_num] +
reverse
    letter_num = letter_num + 1
if reverse == word:
    print ("it is palindrome")
else:
    print ("it is not palindrome")
```

maxvalue

```
def max2(num1, num2):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    return maxvalue
print(max2(8,99))
print(max2(5,6))
def max3(num1, num2, num3):
    maxvalue = num2
    if num2 > maxvalue:
        maxvalue = num2
    if num3 > maxvalue:
        maxvalue = num3
    return maxvalue
```

maxvalue (cont)

```
print(max3(1,2,3))
print(max3(4,5,6))
def maxlist(list):
    maxvalue = mylist[0]
    for item in mylist:
        if item > maxvalue:
            maxvalue = item

    return maxvalue
mylist = [1,5,9,10,13]
print(maxlist(mylist))
```

Vocabulary

variable	something that can change
string	a list of characters
integer/number	pos/neg natural numbers and zero
floating point	decimal number
lenght	the lenght of the string
Modulo	Finds the remainder
Boolean	True/False
Syntax	Grammar/Structure of the language

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

Naming Conventions (cont)

- first name = "hi" -- dashes are not accepted

Countdown 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)
```

import random

```
import random
intlist = [1,2,3,4,5]
random_int =
random.choice(intlist)
print (random_int)
fplist = [5.0,5.1,5.2,5.3,5.4,5.5]
random_fp = random.choice(fplist)
print(random_fp)
strlist =
['dog','cat','bird','fish','fox']
random_str =
random.choice(strlist)
print(random_str)
mylist =
['milly','earn','pim',1.1, 1.2]
random_item =
random.choice(mylist)
print(random_item)
myvar1 = 1
myvar2 = 2
myvar3 = 3
varlist = myvar1, myvar2, myvar3
random_var =
random.choice(varlist)
print (varlist, random_var)
```

convert number to integer and multiply product

```
num =int(input("Enter the
number:"))
print(num * 5)
```

recieve number that divide by 3

```
num = int(input("Enter your
number:"))
remainder = num % 3
if remainder == 0:
    print(num, "is divisible by 3")
else:
    print(num, "is not divisible by
3")
```

recieve number and know that number is - ,+,0

```
num = int(input("Enter a number"))
if num > 0:
    print(num, "is positive")
elif num < 0:
    print(num, "is negative")
else:
    print(num, "is zero")
```

printFibonaccibetween0-50using loop

```
0,1,1,2,3,5,8,13,...(■■■■■■■
■■■■■)
num1 = 0
num2 = 1
fibonacci = num1 + num2
myoutput = "0,1"
while fibonacci: < 50:
    myoutput = myoutput + "," +
str(fibonacci)
    num1 = num2
    num2 = fibonacci:
    fibonacci: = num1 + num2
print(myoutput)
```

Symbols

==	equal to
!=	not equal to
<	less than
<=	less than or equal to
>	greater than
>=	greater than or equal
+	add
-	substract
*	multiply
/	divide and quotient is float
//	divide and quotient is integer
**	exponent
%	modulo: the remainder

Functions

print0	displays information on the screen
input0	receives info from the user
int0	converts the value into an integer
str0	converts the value to a string
float0	converts the value to a floating point
len0	the lenght of the string
#	One line comment not include in code
'''	Multi-line comment

Spelling a string out in reverse ode

```
word = input("Type in an word; ")
reverse = " "
for letter in word:
reverse = letter + reverse
print ("Reverse: ", reverse)
```

By **millyy**
cheatography.com/millyy/

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This prints the true or false value using boolean

```
print(True)
print (2<3)
print (2 != 2)
```

def area of circle

```
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))
```

triangle and prism area

```
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', areaOfTrinagle(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_lengtth))
```

use a for loop to print....

```
0,01,012,0123,01234(■■■■■■■■■■
■■■■■■■■■■■■■■■■■ )
mystring = ""
fpr num in range(5):
    print (mystring)
```

about mystring fill in the blank

```
mystring = ""
count = 0
while count < 5
    mystring = mystring +
str(count)
    print (mystring)
    count = count+1
```

convert the integer and print product

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

print even number using loop

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