

### Vocabulary

variable	something that can change
string	a list of character

### Addition

string + string combines the strings together  
Ex: "1" + "2" = 12

string + number crash

number + number math (addition)

### 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
```

### Example (cont)

```
"Hi" ← value can change
```

```
mystr (int(int)) → 1
```

```
print (int("2")) → 2
```

```
print (float(1)) → 1.0 anything to a float
```

### Python :p

```
def max2 (num1, num2):  
    if num1 > num2:  
        return (num1)  
    elif num1 < num2:  
        return (num2)  
print (max2(2, 3))  
def max3 (num1, num2, num3):  
    maxvalue = num1  
    if maxvalue < num2:  
        maxvalue = num2  
    if maxvalue < num3:  
        maxvalue = num3  
    return maxvalue  
print (max3 (8,4,3))  
def maxlist (list):  
    maxvalue = (list[0])  
    for item in list:  
        maxvalue < item  
        maxvalue = item  
    return maxvalue  
print (maxlist(range(0,123)))
```

### Naming Convention

Rule for giving name

- ◆ letter
- ◆ number
- ◆ underscore \_

Valid name

- ◆ `_myStr`
- ◆ `my3`
- ◆ `Hello_there`

Invalid name

- ◆ `3my+hi` -- cannot start with number
- ◆ `frist name = "hi"`
- ◆ `frist-name`

### Conditional Loop

```
num = 0 or count = 0  
while count < 10 # loop while  
count is less than 10  
    print(count)  
    count = count + 1
```

### Loop

```
Given list called mylist  
for item in mylist :  
    print(item)  
num = 0  
while num < len(mylist) :  
    print (mylist[num])  
    num = num+1
```



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### Function

print()	displays information on the screen
input()	receives info from the user
int()	converts a value to a floating point
str()	converts a value to a string

### Math

==	equal to
!=	no equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to
%	Modulo, Find the remainder
**	■■■■■■■ 2
and	
or	
not	
string * string	multiply
/ divide with answer as float	Ex: 5/2 == 2.5
// divide with answer as integer	Ex: 5//2 == 2

### Multiplication & Exponent

String * number	Combine that string Ex: "2"*3 = 222
string * string	Crash
number * number	Multiply (Math)
string ** string	Crash
number ** number	Exponent (Math) 2 ** 3 = 2 power 3
string ** number	Crash

### 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)

print ("Reverse: ", reverse)
```

### Function

```
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)
```

### Function (cont)

```
elif operation == "div":
    return div(num1, num2)

def product(a, b):
    return a*b

def diff(a, b):
    return a-b

def div(a, b):
    return a/b

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"))
```

### Func call areaOfEllipse ellipse use (pie r 1 r 2)

```
function should given 2 parameter
(radius1 and radius2) should return
area

def areaOfEllipse (radius1,
radius2):
    pi = 22/7 / 3.1415
    area = pi radius1 radius2
    return area
```

### while loop -100 to -1 ( even number)

```
num = -100
while num < -1:
    print (num)
    num = num + 2
num = 0
while num > -100:
    num = num -2
```



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### while loop -100 to -1 ( even number) (cont)

```
print (num)
```

### 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)
```

### Python

```
def printDefinitions(word): #
define the function named
printDefinitons
    if word == "variable":
        # variable
        print ("""
        a variable is something
that can be changed
```

### Python (cont)

```
    """)
elif word == "function":
    #function
    print ("""
    a function is block of
organized
    """)
elif word == "function call":
    #function call
    print ("""
    a function is function that
already that have code
    """)
elif word == "parameter":
    #parameter
    print ("""
    a function is something
that put in function to define
variable.
    """)
elif word == "argument":
    #argument
    print ("""
    a function is the sane as
parameter
    """)
elif word == "string":
    #string
    print ("""
    a function is character in
quotes
    """)
else:
    print ("unknow word")
while True:
```

### Python (cont)

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

### Write function called multiplication Table

```
enter number: 5 5 = user_input 1-
10 = num
5 * 1 = 5
<<<<<
5 * 10= 50
def multiplication():
    user_input =
int(input("Enter a number:"))
    num = 1
    while num <= 10:
        -
        print(user_input," ",num,"=",u-
ser_inputnum)
        -
    num = num+1
```

### Repeat Receive (+)int ,user enter (-)int exit loop

```
evenCount = 0
oddCount = 0
while True:
    user_input = int(input("Enter
num:"))
    if user_input < 0:
        print("Total
even:", evencount)
        print) "Total
odd:", oddcount)
        break
    elif user_input > 0
        if user_input %2 ==0;
#even
            evencount =
evencount + 1
        else:
            oddcount =
oddcount + 1
```

### output 4 is positive 0 is zero -8 is negative

```
user_num = input ("Enter the number")
user_num = int(user_num)
If user_num == 0
    print (user_num,"iszero")
elif user_num < 0:
    print (user_num," is negative")
elif user_num > 0:
    print( user_num, "is positive")
```

### Recieve num user determine number divisible by 3

```
9 is divisible by 3
7 is not
user_num = input ("Enter the number")
user_num = int(user_num)
If : user_num% 3==0
    print(user_num,"is divisible by 3")
else:
    print(user_num," isnot divisble by 3")
```

### Receive input from user as float print half number

```
user_input = input("Enter the number: ")
user_input = float(user_input)
print(user_input)
```



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