

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

Multiplication and Exponents	
string * string	Crash!
string * number	combine that string
number * number	multiply (Math)
string ** string	Crash!
number ** number	Exponent(Math)
string ** number	Crash!

Example	
<pre>print (2.5) - Float print (2) - Integer print ("Hello") - string print (mystr) - variable print (mystr,"Hi,2,1,0) - commas mystr = "noobs" mystr - name "noobs" - can be change print (int(1.5)) - 1 print (int("2")) - 2</pre>	

Countdown Machine	
<pre>user_number = input("What number do you want to countdown?") number = int(us er_ number) countd own _String = ' ' while number > 0: cou ntd own _number = countd own _string + str(nu - mber) + " " number = number + 1 #print number print (count dow n_ s tring)</pre>	

Input loop	
<pre>while True: use r_input = int(in - put ("what is your number :")) integer = user_i nput*10 print (integer)</pre>	
recieves input loop then convert to integer and * 10	

Decision Making/Conditional statement	
<pre>if 3 < 2: #if statement must compare 2 booleans print ('3 is less than 2') elif 4 < 2: #can have 0 or more elif statem ents. print ('4 is less than 2') elif 5 < 2: print ('5 is less than 2') else: #can have 0 or 1 else statement at the end print ('none of above are true')</pre>	

Vocabulary	
variable	something that can be change
string	a list of characters 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

Addition	
string + string	combine number
string +number	CRASH!
number + number	Addition (Math)

Naming Convention	
Rule for giving name	
- letter - numbers - underscore _	
Valid name	
- Allahu_akbar - _gg3 - _print	
Invalid Name	
- 3my = "hi" -- cannot start with number - first name = "hi" -first-name	

Math Operation	
Empty content for Math Operation table	

```
def calc(num1, num2, operation):
    if operation == " sum ":
        return sum(num1,
num2)
    elif operation == " pro -
duc t":
        return produc -
t(num1, num2)
    elif operation == " dif -
f":
        return
diff(num1, num2)
    elif operation == " -
div ":
        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):
    if b!=0:
        return (a//b)
    else:
        print ("er -
ror ")
print (calc(10, 0, " div "))
print( cal c(1 ,2, " sum "))
print( cal c(4 ,2, " dif f"))
print( cal c(9 ,3, " div "))
print( cal c(2 ,12 ,"pr odu -
ct"))
```

for loop each item

```
forlist = ['hi', 'hello',
'goodbye']
for gg in forlist:
    pri nt(gg)
```



Math

```
== equal to
!= no equal to
< less than
> more than
<= less than or equal to
>= more than or equal to
% Modulo, Give remainder when dividing
and
or
not
* multiply
/ divide with answer as a float 5/2 = 2.5
// divide with answer as an interger 5//2 = 2
** exponent 2**3 = 8
```

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

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)
```

Reverse

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

Reverse (cont)

```
> while int(index) < len(word)
    reverse = word[index] + (reverse)
    index = int(index) + 1
print("Reverse:", reverse)
```

Making list & random item

```
import random
intlist = [1, 2, 3, 4, 5]
random_int = random.choice(intlist)
print( int list, random_int)
fplist = [1.1, 1.2, 1.3, 1.4]
random_fp = random.choice(fplist)
print (fplist, random_fp)
strlist = ["Allo", " Ste go",
" Car no", " T-r ex"]
random_str = random.choice(strlist)
print( str list, random_str)
mylist = ["Ya sas hii ", 1.3, 2]
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( var list, random_var)
```

While Loop each item

```
wlist = [2, 4, 5, 6, 7, 8]
gg = 0
while gg < len(wlist):
    print (wlist [gg])
    gg = gg + 1
```