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

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

Countdown Machine

```
user_number = input("What number do you want to countdown?")
number = int(user_number)
countdown_String = ' '
while number > 0:
    countdown_number = countdown_string + str(number) + ""
    number = number + 1
#print number
print (countdown_string)
```

Input loop

```
while True:
    user_input = int(input("what is your number:"))
    integer = user_input*10
    print (integer)
```

recieves input loop then convert to integer and * 10

Decision Making/Conditional statement

```
if 3 < 2: #if statement must compare 2 booleans
    print ('3 is less than 2')
elif 4 < 2: #can have 0 or more elif statements.
    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')
```

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

```
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)
    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 ("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"))
```

for loop each item

```
forlist = ['hi', 'hello',
'goodbye']
for gg in forlist:
    print(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 = " "
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(intlist, random_int)
fplist = [1.1, 1.2, 1.3, 1.4]
random_fp = random.choice(fplist)
print (fplist, random_fp)
strlist = ["Allo", "Stego",
"Carno", "T-rex"]
random_str =
random.choice(strlist)
print(strlist, random_str)
mylist = ["Yasashii", 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(varlist, 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
```

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