Abbreviation

str	string
len()	lenght
print()	print
int()	change to be integer
float()	make it to be decimal number
while :	While something is true the condition in the loop will proceed
for ...... in...... :	For ..... in (your list or string) repeat the command inside the loop that many times
while True :	forever proceed
If ....: then....... else	If the "If" statement is true the loop will proceed the condition inside then loop but if the "If" statement is false the loop will proceed the condition inside else loop

Vocabulary

variable	a value or thing that can be change
string	A list of character such as letter, number or symbol
boolean	True and False (with capital letter)
modulo	Remainder of the division

Vocabulary (cont)

syntax	The grammar of writing pyton
float	number with decimal point
integer	Rounded number with no decimal point

function

input	receives information from user
print	show the result

Rule for giving name

- letter
- number
- underscore
- NO SPACE!!!!!!
- start with letter or underscore **ONLY**

Valid name
- myvar_1
- myvar1_
- _myvar1

Invalid name
- 1myvar (number be the first letter of the name)
- my var (no space in the name)
- my-var (no dash)

Define the function

```
def areaofcircle (radius): #define
function named areaofcircle,
parameter radius
    if radius <= 0:
        return "Error: Invalid
radius"
    pi = 3.1415
    area = 3.1415 * radius**2
    return area # return the area
of the circle
```

Define the function (cont)

```
userradius = float(input("Enter the
radius:"))
print ("The area of the circle is",
areaofcircle(userradius))
```

The result
Enter the radius:0
The area of the circle is Error: Invalid radius

Define Function

```
def bacon() :
    print ("hello it's bacon")
    return

bacon()
```

Function of Palindrome

```
string = input("Please type the
string:")
string = str(string)
letter_num = 0
reverse = ""
while letter_num < len(string) :
    reverse =
string[letter_num]+ reverse
    letter_num = letter_num + 1
if string == reverse :
    print ("This string is
palindrome")
else :
    print ("This string is not
palindrome")
```

Result of the function :
Please type the string:456
This string is not palindrome

OR

Please type the string:12321
This string is palindrome

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Published 11th February, 2016.
Last updated 18th March, 2016.
Page 1 of 5.

Maximum Value

```
#write a function that returns the
largest of two values
#name: max2
#arguments: num1, num2
#return: the largest value
def max2(num1, num2):
    if num1>num2 :
        maxvalue = num1
    else :
        maxvalue = num2
    return maxvalue
user_num1 = int(input("Enter the
first number:"))
user_num2 = int(input("Enter the
second number:"))
print ("The largest value
is:",max2(user_num1, user_num2))
```

Enter the first number:5
Enter the second number:2
The largest value is: 5

Maximum three function

```
#write a function that returns the
largest number of three value
#name: max3
#arguments: num1, num2, num3
#return: the largest value
def max3 (num1,num2,num3):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    if num3 > maxvalue:
        maxvalue = num3
    return maxvalue
```

Maximum three function (cont)

```
user_num1 = int(input("Enter the
first number:"))
user_num2 = int(input("Enter the
second number:"))
user_num3 = int(input("Enter the
third number:"))
print ("The largest value
is:",max3(user_num1, user_num2,
user_num3))
```

Enter the first number:12
Enter the second number:3
Enter the third number:456
The largest value is: 456

For loop

```
mylist = [1,2,3,4,5]
for number in mylist :
    print (number)
```

```
1
2
3
4
5
```

Even number from -100 to -1

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

Operator

==	compare
!=	not equal
while	loop
+	plus
-	minus
/	divide and quotient is float
>=	greater than or equal
>	greater than
<=	less than or equal

Operator (cont)

<	less than
%	keep the remainder
**	power
#	comment
//	divide and quotient is integer
*	multiply
"""........"""	multi-line comment

Capitalize

print (mystr.upper())	all letter become uppercase	HELLO THERE
print (mystr.lower())	all letter become lowercase	hello there
print (mystr.capitalize())	first letter become uppercase, all other lowercase	Hello there
print (mystr.title ())	first letter of each word is uppercase	Hello There

Put letter in different line

```
mystr = "Hello"
letter_num = 0
while letter_num < len(mystr):
    print (mystr[letter_num])
    letter_num = letter_num + 1
```

Out put
H
e
l
l
o

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Published 11th February, 2016.
Last updated 18th March, 2016.
Page 2 of 5.

Different type of list

```
import random
intlist = [1,2,3]
random_int =
random.choice(intlist)
print (intlist,random_int)
fplist = [1.02,3.02,5.36]
random_fp = random.choice(fplist)
print (fplist, random_fp)
strlist = ['mind','mom','hall']
random_str =
random.choice(strlist)
print (strlist, random_str)
mylist = [1,2.35,'tiger']
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)
```

```
[1, 2, 3] 2
[1.02, 3.02, 5.36] 5.36
['mind', 'mom', 'hall'] mom
[1, 2.35, 'tiger'] tiger
[1, 2, 3] 2
```

Function defeinition

```
def printDefinition(word):
    #word = user_input
    if word=="variable":
        print ("""
        A variable is the value
that can change. You can refered it
by make the name of the variable
        """)
```

Function defeinition (cont)

```
    elif
word=="function":#function
        print ("""
        A function define the block
of code that can be reuse
        """)
    elif
word=="parameter":#parameter
        print("""
        A parameter is the thing
that you give to the function in
Pyton
        """)
    elif
word=="argument":#argument
        print("""
        An argument is the thing
that you give to the function
        """)
    elif word=="function
call":#function call
        print("""
        A function call is command
that call code in the function to
run or execute
        """)
    elif word=="string":#string
        print("""
        A string is the list of
letter, number, space or everything
        """)
    else :
        print ("Unknow word")
    return
while True:
    user_input = input("Enter
word:")
```

Function defeinition (cont)

```
    printDefinition(user_input)
```

RESULT
Enter word:funciton
Unknow word
Enter word:function

A function define the block of code that can be reuse

Enter word:hi
Unknow word
Enter word:hello
Unknow word'
Enter word:edlfw
Unknow word
Enter word:variable

A variable is the value that can change. You can refered it by make the name of the variable

Enter word:funciton call
Unknow word
Enter word:

The program keep asking to enter the word because the loop **while True**

Maximum number in list

```
#write a function that returns the
largest number in a list
#name: maxlist
#argument: numlist
#return the largest value in a list
def maxlist(numlist):
    maxvalue = numlist[0]
    for item in numlist :
        if item >= maxvalue:
            maxvalue = item
    return maxvalue
numlist = [1,2,35,2654,232,5,2,5]
print(maxlist(numlist))
```

```
2654
```

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Published 11th February, 2016.
Last updated 18th March, 2016.
Page 3 of 5.

Print fifth character from the list

```
myword = "hellothere"
print (myword[4])

o
```

expected output of the program

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

Result must be:
0
01
012
0123
01234

Operation

string + string	combine together
string * string	invalid syntax
string * number	repeat the string by the number
number + number	addition
number * number	multiple
string ** string	invalid syntax
string ** number	invalid syntax

Reverse

```
word = input ("Please type the
world : ")
letter_num = 0
reverse = ""
while letter_num < len(word) :
    reverse = word[letter_num]+
reverse
    letter_num = letter_num + 1
print ("reverse :", reverse)
OR
word = input("Please type the word
:")
reverse = ""
for letter in word :
    reverse = letter + reverse
print ("reverse :", reverse)
```

Convert decimal to binary

```
number = input ("What you want to
convert to binary :")
number = int(number)
binary = ""
while (number > 0):
    remainder = number%2
    binary = str(remainder)+
binary
    number = number//2
print (binary)
```

Countdown number

```
number = input ("What you want to
countdown :")
number = int(number)
countdown = ""
while number > 0:
    countdown = countdown +
str(number) + " "
```

Countdown number (cont)

```
    number = number - 1
print(countdown)
```

Circle area

```
user_radius = input("What is a
radius of a circle?") # to get
number from user
radius = float(user_radius)
#Convert the given radius to a
floating point
pi = float(3.1415) #determine the
value of variable called pi
area = pi(radius²) #Calculate the
area of the circle using exponents
print ("The area of the circle is",
area) #Show the area of the circle
to the user
```

Guessing Game

```
chance = 5
score = 0
mylist = ['coke','bacon',
'chicken', 'pocky', 'pepsi',
'pizza']
import random
random_item =
random.choice(mylist)
while chance > 0:

    print ("-=-=-=-=-=-=-=-=-
=-=-=-=-=-=-=-=-")
    print ("Guessing Game")
    print ("-=-=-=-=-=-=-=-=-
=-=-=-=-=-=-=-=-")

    print ("Words:", mylist)

    user_guese = input("Guese the
word: ")
    if user_guese == random_item:
        score = score+100
        print ("That's correct!
Score:", score)
```

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Published 11th February, 2016.
Last updated 18th March, 2016.
Page 4 of 5.

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Guessing Game (cont)

```
        random_item =
random.choice(mylist)
    else:
        chance = chance-1
        if user_guese in mylist:
            print ("Sorry, wrong
choice!")
            print ("Chances
Remaining:", chance)
        else:
            print ("Sorry, that is
not ever in the list")
            print ("Chances
Remaining:", chance)
print ("Game Over! The word was",
random_item)
print ("Final Score:", score)
```

Area of triangle

```
# write a function that computers
the area of a triangle
#name: areaofTriangle
#parameters : b, h
#return : area
def areaofTriangle(b,h):
    area = 0.5bh
    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",
areaofTriangle(user_base,user_heigh
t))
```

RESULT

```
Enter the base of the triangle:6
Enter the height of the triangle:10
The area of the triangle is 30.0
>>>
```

Function of volume

```
# write a function that computers
the area of a triangle
#name: areaofTriangle
#parameters : b, h
#return : area
def areaofTriangle(b,h):
    area = 0.5bh
    return area
user_base = float(input("Enter the
base of the triangle:"))
user_height = float(input("Enter
the height of the triangle:"))
#write a function that computes the
volume of a prism
#name: volumeofPrism
#parameters: b, h, l
#return: volume
def volumeofPrism(b,h,l):
    volume =
areaofTriangle(b,h)*l
    return volume
user_lenght = float(input("Enter
the lenght of the prism:"))
print ("The volume of the prism
is",
volumeofPrism(user_base,user_height
,user_lenght))
```

RESULT

```
Enter the base of the triangle:4
Enter the height of the triangle:6
Enter the lenght of the prism:10
The volume of the prism is 120.0
```

While loop

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

```
2
4
5
6
7
8
```