

Vocabulary

Variable	holds a value and can be change
String	a list of characters such as number, letters, symbol
Integer number	whole number/counting number
Floating number	the number in decimal
Syntax	grammar/structure of language
Modulo	find the remainder
Boolean	true/false

Conditional

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

Naming Conventions

Rules for naming variable:

- letters
- numbers
- can start with letters or underscores ONLY
- underscores (_)
- NO SPACES

Valid names:

- _mystr

- my3

Hello_there

Invalid names:

- 3my= "hi" -- cannot start with number

Naming Conventions (cont)

- first name = "hi" -- no spaces allowed
- first-name -- dashes are not accepted

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(4,5))
print (max2(33,5))
def max3(num1,num2,num3):
    maxvalue = num1
    if num2 > maxvalue:
        maxvalue = num2
    if num3 > maxvalue:
        maxvalue = num3
    return maxvalue
print (max3(1,2,3))
```

5
33
3

Function

print()	show information that you want on the screen
int()	change number to be integer
float()	change the number to decimal number
input()	gain information from user
str()	a list of number, letter and symbol
len()	the length of the string
#	comment, no effect

Math

==	equal to
!=	not equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to
%	Modulo, Find the remainder
+	add
-	subtract
*	multiply
/	divide
**	exponent

Function

```
def printDefinitions():
    if word == "variable":
        print("""variable is value that
you can change""")
    elif word == "function"
        print("""function is is define
a box of code""")
    elif word == "parameter"
        print("""parameter is a valuve
of number that you give to the
function""")
```



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Function (cont)

```
elif word == "argument"
    print("""argument is set of
somethings that you give to the
function""")
elif word == "function call"
    print("""function call is when
you call the function and it will
run""")
elif word == "string"
    print("""string is anything you
can put""")
else:
    print("unknown word")
return
while True:
    user_input = input("Enter
word:")
    printDefinition(user_input)
```

maxlist

```
def maxlist(list):
    maxvalue = list[0]
    for item in list:
        if item > maxvalue:
            maxvalue = item
    return maxvalue
mylist = [1,2,3,4,55,66,777,0,1]
print(maxlist(mylist))
```

777

exercise 2 odd

```
#Receives input from the user,
converts it to an integer and
prints the product of the integer
user_number = int(input("Enter a
number"))
print(user_number*5)
#prints all the even numbers from -
100 to -1 using while loop
user_number = -100
while user_number < -1:
```

exercise 2 odd (cont)

```
print(user_number)
user_number = user_number +2
#print all the item using a loop
mylist = ['cokezero', 'bacon',
'pesi']
for item in mylist:
    print(item)
#areaOfEllipse()
def areaOfEllipse(radius1,
radius2):
    pi = 3.145
    area = pi radius1 radius2
    return area
#function call
area1 = areaOfEllipse(2,3)
print(area1)
#The user enters a negative
integer, exit the loop and print
how many of the num enter were even
and odd
evencount = 0
oddcount = 0
While True:
    num = int(input("Enter a
positive integer"))
    if num < 0:
        print("Enter numbers:",
evenCount)
        print("Odd numbers:",
oddcount)
        break
    else:
        if(num % 2) == 0
            evenCount = evencount
+ 1
        else:
            oddCount = oddCount +
1
```

Additional

string + string	squishes them together
string + number	crash
number + number	math(addition)

Multiplication & Exponents

string * string	CRASH!!!
string *	combines the strings
number	multiple time
number * number	math (multiply)
string ** number	math (multiply)CRASH!!!
number ** number	exponent (Math)
string ** number	CRASH!!!

Import Random

```
import random
intlist = [5,10,15,20,25]
random_int =
random.choice(intlist)
print (random_int)
fplist = [1.1,2.2,3.3,4.4,5.5]
random_fp = random.choice(fplist)
print (random_fp)
strlist =
['rat','cat','fat','mat','sat']
random_str =
random.choice(strlist)
print (random_str)
mylist = ['blue', 'green',
'yellow', 'red', 'pink']
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)
```



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def areaofcircle

```
def areaofcircle(r):
    if r <= 0:
        return "Error: invalid radius"

    pi = 3.1415
    area = pi * r * r

    return area #return the area of the circle
user_radius = float (input("Enter the radius: "))
print('The area of the circle is',
      areaofcircle(user_radius))
```

areaoftriangle

```
def areaofcircle(radius):
    if radius <= 0:
        return "Error: invalid raadius"

    pi = 3.1415
    area = pi * (radius*radius)

    return area

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

Enter the radius: 2
The area of the circle is 12.566

Enter the radius: 0
The area of the circle is Error: invalid raadius
```



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