

Functions	
print()	displays information on the screen
input()	receives information from the user
int()	converts a value to an integer
float()	change number to be decimal number
str()	a list of characters
len()	The length of the string
""" """	comment (many lines)
#	comment(one line)
import random + random.choice()	pick random item in the list

Vocabulary	
variable	holds a value and can be changed
string	a list of characters such as number, letter, symbols
input	receives information from the user
float number	number with a decimal
syntax	structure of language or grammar
integer	whole number or counting number

Vocabulary (cont)	
print	displays information on the screen
value	the number or string can be store in valuable
syntax error	make impossible to the phase

Code

```

mystring = "hello"
print (mystring)
firstname = input ("What is your first name? ")
lastname = input ( "What is your last name? ")
fullname = firstname + " " + lastname
print (fullname)
letter number = int(input - ("What is letter number? "))
if letter number > len(fullname):
    print ("in valid letter number, try again! ")
else:
    letter = (fullname[letter number])
    print (letter)
    number letter = int(input ("How many times to print letter ? "))
    if number letter > 100:
        print ("too many letter too print! ")
    else:
        print (letter * number letter)

```

Area of a triangle

```

def areaoftriangle(base, height):
    return base*height 1/2
base = float( input( 'Enter the base of the triangle: '))
height = float( input( 'Enter the height of the triangle: '))
print ('The area of the triangle is', areaoftriangle( base, height))

```

Python Palindrome

```

while True:
    def ispalindrome (word):
        reverse= ""
        myresult= ""
        for letter in word:
            reverse = letter+ reverse
        if word == reverse:
            return True
        else:
            return False
    word= input( " Please enter a word: ")
    if word == "quit":
        break
    myresult= ispalindrome (word)
    print( "This word has", len(word) ,"letters")
    if myresult== True:
        print( True)
    else:
        print( False)

```

Python Palindrome (cont)

```
> print(False, 'is not a
palindrome')
# Print: Please enter a word: kayak
This word has 5 letters
True, kayak is a palindrome
Please enter a word: mint
This word has 4 letters
False, mint is not a palindrome
```

Recieve number and determine number

```
9 is divisible by3
7 is not divisible by 3

usernum = input("Please
enter the a number: ")
remainder = usernum % 3
if remainder == 0:
    print("is
divisible by 3")
else:
    print("is not
divisible by 3")
4 is positive 0 is zero -8 is negative
usernum = input("Pls enter the
number: ")
if usernum > 0:
    print("is
positive")
elif usernum == 0:
    print("is zero")
else:
    print("is negati -
ve")
```

areaOFEllipse

```
# the function should be given
two parameters and should return
the area
def areof ellipse (r1,r2):
    area= 3.14*r1*r2
    return (area)
r1= float(input("Enter
radius1: "))
r2= float(input("Enter
radius2: "))
area= areof ellipse(r1,r2)
print(area)
```

Operation

```
== equal to
!= not equal
< less than
> greater than
<= less than or equal to
>= greater than or equal to
% Modulo, find the remainder
```

Multiplication and Exponents

```
string * combine that string
number multiple times
string * string crash
number * math - multiply
number
string ** crash
string
```

Multiplication and Exponents (cont)

```
number ** number math - exponents
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) + 1
    print("Re -
verse: ", reverse)
```

Random choice code

```
import random
mylist = ['cat', 'dog', 'chicken', 'bird', 'fish']
score = 0
chances = 3
start_over = 0
random_item = random.choice(mylist)
while chances > 0:
    start_over = 0
    random_item =
random.choice(mylist)

    while start_over < 1:
        print("== --- == -
-- == --")
        print("Gu essing
Game")
        print("== --- == -
-- == --")
```

Random choice code (cont)

```
> print("words:", mylist)
guess = input("Guess a word: ")
if (guess in mylist):

    if(guess == random_item ):
        print("That's correct!")
        score = score + 100
        print("Score:", score)
        start_over = 2
    else:
        print("Sorry,wrong choice!")
        chances = int(chances) -1
    else:
        print("Sorry, that is not even in the list")
        chances = int(chances) -1
if(chances > 0):
    print("Chances remaining:",chances)
else:
    start_over = 2
    print("Game Over! The word was ",
random_item)
    print("Chance remaining:", chances)
    print("Final score:", score)
```

Convert number to binary

```
user_number = " "
while user_number != " 0":

    use_r_number = input
    ("enter a number ")
    number = int(us er_
number)
    bin ary_string = " "
while (numbe r>0):
```

Convert number to binary (cont)

```
> remainder = number % 2
binary_string = str(remainder) + binary_
_string
number = numbe//2
print (number)
print ("binary string is ", binary_string)
```

code

```
def createlist(quitword):
    mylist= []
    while True:
        item= input( " -
Please enter a list item: ")
        if item== quitword:
            return
mylist
        dup lic ate word=
False
        for myvar in
mylist:
            if myvar==
item:
                dup -
lic ate word= True
                if duplic ate word=
True:
                    print
("Du plicate word! ")
                    else:
                        myl -
ist.ap pen d(item)
mylist= createlist ("st op")
print( mylist)
```

For loop

```
0
1
12
mystring= " "
```

For loop (cont)

```
> for number in range (3)
    mystring= mystring+ str(number)
    print (mystring)
or
mystring=""
count=0
while count<5:
    mystring= mystring+str(count)
    print(mystring)
    count= count+1
```

Addition

string + string	combine togrther
string + number	crash
number + number	math - addition

List code

```
shoppinglist = ['tshirt',
'pants', 'socks']
for myvariable in shoppi nglist:
    print (myvar iable)
or
mylist= [1,2,3,4]
number= 0
while number <le n(m ylist):
    print (mylis t[n umber])
    number= number+1
```

Random code

```
import random
mylist = ['Dog', 'Fish', 'Cat', 'Bear']
counter = 0
while counter < 10:
    random_item = random.choice(mylist)
    print(random_item)
    counter = counter + 1
```

Print name

```
name = "time GIRARD"
print(name.upper()) > TIM GIRARD
print(name.lower()) > time girard
print(name.capitalize()) > Tim girard
print(name.title()) > Tim Girard
```

Area of circle

```
while True:
    use_radius = input("What is the radius? ")
    radius = float(use_radius)
    pi = 3.1415
    area = pi * radius ** 2
    print("The area of the circle is", area)
```

Loop doesn't go forever

```
gameover = 0
while (gameover == 0):
    print("hello")
    gameover = 1
```

while loop

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

code

```
# receives input from the user in a loop. convert the input to an integer and print out that integer multiplied by 10
while True:
    use_number = input("Please enter the number: ")
    answer = int(use_number) * 10
    print(answer)
```

Count down code

```
#create a program that receives a number from the user and count down from that number on the same line
#receive the number from the user as a string
user_number = input("enter number ")
#convert the user number to an integer
number = int(user_number)
#setup the countdown string
countdown_string = ""
while number > 0:
    #add the number to the string
    #subtract 1 from the number
```

Count down code (cont)

```
> countdown_string = countdown_string + str(number) + " "
    number = number - 1
print(countdown_string)
#output should look like this
# if the user enter 5:
#5 4 3 2 1
#print(countdown_string)
```

Word length

```
while True:
    use_number = input("Please enter a word: ")
    if use_number == "exit":
        break
    print(len(use_number))
# Please enter a word: hello
5
Please enter a word: pls
3
Please enter a word: exit
```

True False

```
create function= def
True or anything is True
False and anything is False
```

User enters 12.5, print out 6.25

```
number= float(input("Please
enter number: "))
print (number/2)
```

Even number

```
# print all the even numbers
from 1 to 100 using while loop
number=0
while number <100:
    var iable= number+2
    pri nt( var iable)
```

Multiplication Table

```
usernum= int(input("Enter a
number: "))
numlist= [1,2,3 ,4, 5,6 ,7, -
8,9,10]
for num in numlist:
    answer= usernu m*num
    print (user, " *",n -
um, " =",a nswer)
```



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Page 5 of 5.

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