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
print	displays information on the screen

Vocabulary (cont)

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)
letternumber = int(input("What is letter number? "))
if letternumber > len(fullname):
      print ("invalid letter number, try again! ")
else:
      letter = (fullname[letternumber] )
      print (letter)
      numberletter = int(input("How many times to print letter ? "))
      if numberletter > 100:
            print ("too many letter too print! ")
      else:
            print (letter * numberletter)
```

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
            reverse= ""
    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,',',word+str(" is a palindrome"))
    else:
        print(False,',',word+str(" 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
usernumber= input("Please enter the a number: ")
remainder= usernumber%3
if remainder ==0:
 print(usernumber, "is divisible by 3")
else:
 print(usernumber, "is not divisible by 3")
4 is positive 0 is zero -8 is negative
usernum= input("Pls enter the number: ")
if usernum>0:
  print(usernum, "is positive")
elif usernum==0:
  print(usernum, "is zero")
else:
  print(usernu, "is negative")
```

areaOFEllipse

```
# the function should be given two parameters and should return the area
def areofellipse(r1r2):
 area= 3.14r1r2
 return(area)
r1= float(input("Enter radius1: "))
r2= float(input("Enter radius2: "))
area= areaofellipse(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 * number	combine that string multiple times
string * string	crash
number * number	math - multiply
string ** string	crash
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 ("Reverse: ", 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 ("Guessing Game")
     print ("-=-=-=-=-=-=-=-=-=-=")
     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
```

Random choice code (cont)

```
        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":

   user_number = input ("enter a number")
   number = int(user_number)
   binary_string = " "
while (number>0):

   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
       duplicateword= False
       for myvar in mylist:
          if myvar== item:
            duplicateword= True
       if duplicateword= True:
            print ("Duplicate word! ")
       else:
            mylist.append(item)
```

code (cont)

```
mylist= createlist ("stop")
print(mylist)
```

For loop

```
0
1
12
mystring= ""
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 shoppinglist:
     print (myvariable)
or
mylist= [1,2,3,4]
number= 0
while number<len(mylist):
    print (mylist[number])
```

List code (cont)

```
    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:
       user_radius = input("What is the radius? ")
       radius = float(user_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:
   usernumber= input("Please enter the number: ")
   answer= int(usernumber)*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
       countdown_string = countdown_string + str(number) + " "
       number = number-1
print (countdown_string)
```

Count down code (cont)

```
#output should look like this
# if the user enter 5:
#5 4 3 2 1
#print (countdown_string)
```

Word length

```
while True:
    usernumber= input("Please enter a word: ")
    if usernumber == "exit":
        break
    print(len(usernumber))
# 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:
    variable= number+2
    print(variable)
```

Multiplication Table

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