

### 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 / 2
base = float(input('Enter the base of the triangle: '))
```

### Area of a triangle (cont)

```
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= areofellipse(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
number
string ** string crash
number ** number math - exponents
number
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)
```