

### Function

|         |  |
|---------|--|
| print() | Show information that you want on the screen |
| int()   | Change number to be number integer           |
| float() | Change number to be decimal number           |
| input() | Gain information from user                   |
| str()   | A list of number, letter and symbols         |
| len()   | The length of the string                     |
| #       | Comment, no effect                           |

### Vocabulary

|                |  |
|----------------|--|
| Variable       | Hold a value and can be change                         |
| String         | A list of character such as number, letter and symbols |
| Integer number | Whole number/counting number                           |
| Float number   | The number in decimal                                  |
| Syntax         | Grammar/Structure of language                          |
| Modulo         | Find the remainder                                     |
| Boolean        | True/False   |

### Example

Print (2) – integer  
 Print (2.5) – floating point  
 Print ("Hello") – string  
 Print (mystr) – variable  
 Print (mystr, "Hi", 2, 1.0) -- commas  
 mystr = "Hi"  
 mystr ← name  
 "Hi" ← value can change  
 print (int(1.5)) → 1  
 print (int("2")) → 2  
 print (float(1)) → 1.0 anything to a float  
 Modulo/Remainder %  
 print (4%2) → 0  
 print (30%7) → 2

### Sort word per line

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

H  
e  
l  
l  
o

### Selecting Largest Value

```
def max2 (num1,num2):
    if num1 > num2:
        return num1
    if num1 < num2:
        return num2
def max3 (num1,num2,num3):
    if num1 > num2 and num1 > num3:
        return num1
    if num2 > num1 and num2 > num3:
        return num2
    if num3 > num1 and num3 > num2:
        return num3
num1=input("Enter your num1:")
num2=input("Enter your num2:")
num3=input("Enter your num3:")
print("the largest number of max3 is:",max3(num1,num2,num3))
print("the largest number of max2 is:",max2(num1,num2))
```

### ==

```
myboolean = 2 == 3
if myboolean:
    print ("truth")
else:
    print ("lies")
```

### 0,01,012,0123,01234

```
mystring = ""
count = 0
while count <= 4:
    mystring = mystring + str(count)
    print (mystring)
    count = count + 1
mystring = ""
for num in range(5):
```

### 0,01,012,0123,01234 (cont)

```
mystring = mystring + str(num)
print (mystring)
```

### Definition

```
def printDefinition(word):
    if word == "variable":
        print ("""
        A variable is the the thing that can be changed.
        """)
    elif word == "parameter":
        print ("""
        A parameter is the limiting factor
        """)
    elif word == "argument":
        print ("""
        An argument is the identifier that you give to
        function
        """)
    elif word == "string":
        print ("""
        A string is something that can be repeated by
        the number.
        """)
    elif word == "function call":
        print ("""
        A function call is the word you use to reuse the
        function.
        """)
    else:
        print ("unknown word")
    while True:
        user_input = input("Please type the word :")
        printDefinition(user_input)
```

### Math

|    |                            |
|----|----------------------------|
| == | equal to                   |
| != | no equal to                |
| <  | less than                  |
| >  | more than                  |
| <= | less than or equal to      |
| >= | more than or equal to      |
| %  | Modulo, Find the remainder |

### Addition

|                 |                  |
|-----------------|------------------|
| string + string | Combine together |
| string + number | CRASH!           |
| number + number | Addition (Math)  |

### Multiplication and Exponents

|                  |                     |
|------------------|---------------------|
| string * number  | Combine that string |
| string* string   | CRASH!              |
| number * number  | Multiply (Math)     |
| string ** string | CRASH!              |
| number ** number | Exponent (Math)     |
| string ** number | CRASH!              |

### Naming Convention

Rule for giving name

- letter
- numbers
- underscore \_

Valid name

- \_myStr
- my3
- Hello\_there

Invalid name

- 3my="hi" -- cannot start with number
- first name="hi"
- first-name
- first+name

### Area of Circle

```

"""
Python Intro Assignment #2
name
student number
"""
#Ask the user for a radius of a circle
user_radius = input("What is a radius of a circle?")
#Convert the given radius to a floating point
radius = float(user_radius)
#Make a variable called pi
pi = float(3.1415)
#Calculate the area of the circle using exponents
area = pi(radius*2)
#Display the area of the circle to the user
print ("The area of the circle is", area)

```

### Hex

```

user_number = input("Enter number to convert to hex : ")
number = int(user_number)
hex_string = ""
while (number > 0):
remainder = number % 16
if remainder == 10:
remainder = 'A'
elif remainder == 11:
remainder = 'B'
elif remainder == 12:
remainder = 'C'
elif remainder == 13:
remainder = 'D'
elif remainder == 14:
remainder = 'E'
elif remainder == 15:
remainder = 'F'
hex_string = str(remainder) + str(hex_string)
number = number // 16
print ("Hex string is 0x",hex_string)

```

### 1 \* 1 = 1

```

def multiplicationTable(num):
multi = 0
while multi < 10:
multi = multi + 1
user_output = num*multi
print ( num,"*",multi,"=",user_output)
user_num = int(input("Enter the number: "))
multiplicationTable(user_num)

```

### Fibonacci

```

num1 = 0
num2 = 1
fibonacci = num1 + num2
output = "0,1"
while fibonacci < 50:
output = output + "," + str(fibonacci)
num1 = num2
num2 = fibonacci
fibonacci = num1 + num2
print (output)

```

### Boolean

|                |       |
|----------------|-------|
| False or True  | True  |
| False and True | False |
| True and False | False |
| True and True  | True  |
| False or False | False |

### 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)

```

### Convert to binary

```

user_number = ''
while user_number != '0':
user_number = input ("Enter a number to convert to binary")
number = int(user_number)
binary_string = ''
while (number > 0):
remainder = number%2
binary_string = str(remainder)+ binary_string
number = number//2
print ("Binary string is", binary_string)

```

### Countdown Machine

```

user_number = input("What number do you want to count down? ")
number = int(user_number)
countdown_string = ''
while number > 0:
countdown_number = countdown_string + str(number) + " "
number = number - 1
#print(number)
print (countdown_string)

```

### Sort fruit list

```
fruits = [] #an empty list
for number in range(5):
    user_fruit = input("Please enter a fruit")
    fruits.append(user_fruit)
print ("Size of fruit list is", len(fruits))
fruits.sort()
for fruit in fruits:
    print ("Fruit: ", fruit)
```

### Print Name

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

### Guess

```
import random
chance = 3
score = 0
mylist = ['Hack', 'ToeyD.', 'Patter','Tim','Lily']
random_item = random.choice(mylist)
while chance > 0:
    print (mylist)
    print ("Chances Remaining =",chance)
    guess = input("Guess a word from the above :")
    if guess == random_item:
        score = score + 100
        print ("That's correct!","The score is :",score)
        random_item = random.choice(mylist)
    else:
        print ("Sorry, wrong choice!")
        chance = chance - 1
    if guess in mylist:
        print ("")
    else:
        print ("Sorry,that is not even in the list!")
    if chance == 0:
        print ("Game Over! The word
was",random_item)
    print ("Final score: ",score)
```

### Even,Odd number

```
even = 0
odd = 0
while True:
    user_num = int(input("Enter the number :"))
    if user_num >= 0:
        if user_num % 2 == 0:
            even = even + 1
        else:
            odd = odd + 1
    else:
        print ("Even number :", even)
        print ("Odd number :", odd)
        break
```

### For loop word

```
For word in mylist:
    print (word)
```

