Assignment_Function

- KUMAR SAURAV
- DSAIML
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In [5]:
```
# Define a function calls addNumber(x, y) that takes in two number and returns the



def addNumber(a,b):
    print(a+b)

addNumber(20,30)
```

```
50
```

In [6]:
```
# Define a function calls subtractNumber(x, y) that takes in two numbers and retur


def subtractNumber(a,b):
    print(a-b)

subtractNumber(20,30)
```

```
-10
```

In [7]:
```
# Write a function getBiggerNumber(x, y) that takes in two numbers as arguments an



def getBiggerNumber(a,b):
    if a>b:
        print(f'{a} is bigger than {b}')
    else:
        print(f'{b} is bigger than {a}')

getBiggerNumber(20,30)
```

```
30 is bigger than 20
```

In [32]:
```
# Python provides many built-in modules with many useful functions.
# One such module is the math module. The math module provides many useful functio
# You will need to do a "import math" before you are allowed to use the functions 


# Calculate the square root of 16 and stores it in the variable a

import math

a = math.sqrt(16)

print(f'Square root of 16 is {a}')


# Calculate 3 to the power of 5 and stores it in the variable b

import math

b = math.pow(3,5)
```

```
print(f'3 to the power of 5 is {b}')


# Calculate area of circle with radius = 3.0 by making use of the math.pi constant


import math
pi = math.pi

radius = float(input("Enter radius of the circle:"))

Circumference = 2 * pi * radius

print(f'Circumference of the circle is: = {round(Circumference)}')
```

```
Square root of 16 is 4.0
3 to the power of 5 is 243.0
Enter radius of the circle:3
Circumference of the circle is: = 19
```

In [8]:
```
# Write a function to convert temperature from Celsius to Fahrenheit scale.
# oC to oF Conversion: Multipy by 9, then divide by 5, then add 32.

# Note: Return a string of 2 decimal places.
# In - Cel2Fah(28.0)
# Out - '82.40'
# In - Cel2Fah(0.00)
# Out - '32.00'




def temp_converter(num):
    f =  round (((9/5)* num) + 32,3)
    return f

celsius_temp = float(input('Enter temperature in Celsius: '))

fahrenheit_temp =  temp_converter(celsius_temp)
print("Temp in fahrenheit = ", fahrenheit_temp )
```

```
Enter temperature in Celsius: 0.00
Temp in fahrenheit =  32.0
```

In [4]:
```
# Write a function to compute the BMI of a person.
#     BMI = weight(kg)  /  ( height(m)*height(m) )

# Note: Return a string of 1 decimal place.
# In - BMI(63, 1.7)
# Out - '21.8'
# In - BMI(110, 2)
# Out - '27.5'



def bmi_converter(w,h):
    bmi = round(w/(h*h),2)
    return bmi

weight = float(input('Enter the weight(kg) : '))
height = float(input('Enter the height(m) : '))
```

```
bmi_body =  bmi_converter(weight,height)
print("BMI = ", bmi_body )
```

```
Enter the weight(kg) : 63
Enter the height(m) : 1.7
BMI =  21.8
```

In [9]:
```
# Write a function percent(value, total) that takes in two numbers as arguments, ar
# In - percent(46, 90)
# Out - 51
# In - percent(51, 51)
# Out - 100
# In - percent(63, 12)
# Out - 525



def percent(v,t):
    p = round((v/t)*100,2)
    return p

values = eval(input("Enter the value : "))
total = eval(input("Enter the total : "))

percentage_value = percent(values,total)
print('The percentage value =',percentage_value)
```

```
Enter the value : 63
Enter the total : 12
The percentage value = 525.0
```

In [1]:
```
# Write a function to compute the hypotenuse given sides a and b of the triangle.
# Hint: You can use math.sqrt(x) to compute the square root of x.
# In - hypotenuse(3, 4)
# Out - 5
# In - hypotenuse(5, 12)
# Out - 13



def hyp_cal (a,b):
    import math
    h = math.sqrt((a*a)+(b*b))
    return h


side_a = eval(input("Enter the value of a : "))
side_b = eval(input("Enter the value of b : "))

hypotenuse = hyp_cal(side_a,side_b)
print('The hypotenuse of the triangle =',hypotenuse)
```

```
Enter the value of a : 3
Enter the value of b : 4
The hypotenuse of the triangle = 5.0
```

In [42]:
```
# Write a function getSumOfLastDigits() that takes in a list of positive numbers ar
# getSumOfLastDigits([2, 3, 4])
# 9
# getSumOfLastDigits([1, 23, 456])
# 10

def getSumOfLastDigits(num_list):
    return sum(x % 10 for x in num_list)
```

```
list = eval(input('Enter a list of nos :'))

list_sum = getSumOfLastDigits(list)
print('The sum of last digits = ',list_sum)
```

```
Enter a list of nos :[1,23,456]
The sum of last digits =  10
```

In [ ]:
```
# Write a function that uses a default value.
# In - introduce('Lim', 20)
# Out - 'My name is Lim. I am 20 years old.'
# In - introduce('Ahmad')
# Out - 'My name is Ahmad. My age is secret.'



def intro(a,b):
```

In [11]:
```
# Write a function isEquilateral(x, y, z) that accepts the 3 sides of a triangle as
# The program should return True if it is an equilateral triangle.

# In - isEquilateral(2, 4, 3)
# False - False
# In - isEquilateral(3, 3, 3)
# Out - True
# In - isEquilateral(-3, -3, -3)
# Out - False



def isEquilateral(x, y, z):
    if x == y == z:
        print('Equilateral Triangle')
    else:
        print('Not an Equilateral Triangle')


side_1 = eval(input('Enter the value of one side : '))
side_2 = eval(input('Enter the value of second side : '))
side_3 = eval(input('Enter the value of third side : '))

equi_tri = isEquilateral(side_1,side_2,side_3)
```

```
Enter the value of one side : 3
Enter the value of second side : 4
Enter the value of third side : 5
Not an Equilateral Triangle
```

In [12]:
```
# For a quadratic equation in the form of ax2+bx+c, the discriminant, D is b2-4ac.
# In - quadratic(1, 2, 3)
# Out - 'The discriminant is -8.'
# In - quadratic(1, 3, 2)
# Out - 'The discriminant is 1.'
# In - quadratic(1, 4, 4)
# Out - 'The discriminant is 0.'




def quadratic(a,b,c):
    d = (b*b)- (4*a*c)
    return d
```

```
num_1= eval(input('Enter the value of a : '))
num_2= eval(input('Enter the value of b : '))
num_3= eval(input('Enter the value of c : '))


disc = quadratic(num_1,num_2,num_3)
print('The value of dicriminant is :',disc)
```

```
Enter the value of a : 1
Enter the value of b : 2
Enter the value of c : 3
The value of dicriminant is : -8
```

In [21]:
```
# Define a function calls addFirstAndLast(x) that takes in a list of numbers and re
# In - addFirstAndLast([])
# Out - 0
# In - addFirstAndLast([2, 7, 3])
# Out - 5
# In - addFirstAndLast([10])
# Out - 10


def addFirstAndLast(lst):
    s = lst[0]+ lst[len(lst)-1]
    return s

new_lst = eval(input('Enter the list of nos.: '))

sum_fnl = addFirstAndLast(new_lst)
print('The sum of first and last number =',sum_fnl)
```

```
Enter the list of nos.: [1,2,3,4,5]
The sum of first and last number = 6
```

In [24]:
```
# Complete the 'lambda' expression so that it returns True if the argument is an ev

x = lambda num : 'Even' if num % 2 == 0 else 'Odd'
x(13)
```

Out[24]:
```
'Odd'
```

In [ ]:
```
# Get the documentation of below function

def getScore():
  '''A function that computes and returns the final score.'''
  pass
```

Out[ ]:
```
"'A function that computes and returns the final score."
```

In [31]:
```
# In Python, it is possible to pass a function as a argument to another function.
# Write a function useFunction(func, num) that takes in a function and a number as
# The useFunction should produce the output shown in the examples given below.

# def addOne(x):
#   return x + 1
# useFunction(addOne, 4)
# 25
# useFunction(addOne, 9)
# 100
# useFunction(addOne, 0)
# 1
```

```
def addOne(x):
    return x+1

def useFunction(addOne, x):
    return addOne(x)*(x+1)

useFunction(addOne,9 )
```

Out[31]:
```
100
```

In [32]:
```
# Write a function find_max that accepts three numbers as arguments and returns the
# Write another function main, in main() function accept three numbers from user ar




def find_max(x,y,z):
    if x > y and x > z:
        return x
    else:
        if y > x and y > z:
            return y
        else:
            if z > x and z > y:
                return z

num_1 = eval(input('Enter the value of first number : '))
num_2 = eval(input('Enter the value of second number : '))
num_3 = eval(input('Enter the value of third number : '))

num_2
maximum = find_max(num_1,num_2,num_3)
print('The maximum of three numbers is :', maximum)
```

```
Enter the value of first number : 23
Enter the value of second number : 34
Enter the value of third number : 45
The maximum of three numbers is : 45
```

In [83]:
```
# Write a function, is_vowel that returns the value true if a given character is a
# and otherwise returns false.
# Write another function main, in main() function accept a string from user and cou
# of vowels in that string.


def is_vowel(char):
    vowels = ['a', 'e', 'i', 'o', 'u']
    if char in vowels:
        return True
    else:
        return False

character = str(input('Enter a letter : ')).lower()

vowel_chr = is_vowel(character)
print('Is it a vowel?',vowel_chr)



print('***************')

def main():
```

```
    count = 0
    string = input('Enter a text: ').lower()
    for ch in string:
        if(is_vowel(ch)):
            count += 1
    print('Number of vowels are', count)
main()
```

```
Enter a letter : r
Is it a vowel? False
***************
Enter a text: aeroplane
Number of vowels are 5
```

In [11]:
```
# Write a function named is_prime, which takes an integer as an argument and returns
# if the argument is a prime number, or false otherwise.
# Also, write the main function that displays prime numbers between 1 to 500.


def is_prime(n):
    if (n==1 or n==0):
        return False
    for i in range(2,n):
        if(n%i==0):
            return False
    else:
        return True

num_1 = eval(input('Enter a number : '))

prime_num = is_prime(num_1)
print('Is the number prime?',prime_num)

print('*******')

def main():
    for i in range(1,501):
        if is_prime(i):
            print(i, end = " ")
main()
```

```
Enter a number : 9
Is the number prime? False
*******
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107
109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197 199 211 223 22
7 229 233 239 241 251 257 263 269 271 277 281 283 293 307 311 313 317 331 337 347
349 353 359 367 373 379 383 389 397 401 409 419 421 431 433 439 443 449 457 461 46
3 467 479 487 491 499
```

In [28]:
```
# Write a function in python to find the sum of the cube of elements in a list.
# The list is received as an argument to the function, in turn, the function must r
# Write the main function which invokes the above function.




def sum_cube(lst):
    sum = 0
    for i in lst:
        sum += i**3
    return sum

num_lst = eval(input('Enter a list of nos.: '))
```

```
add_lst = sum_cube(num_lst)
print('The sum of cube of numbers is :', add_lst)

print('********')

def main():
    lst = [1,2,3,4,5,6,7]
    s = sum_cube(lst)
    print(f'Sum of cubes is {s}')

main()
```

```
Enter a list of nos.: [2,3,4,5,6]
The sum of cube of numbers is : 440
********
Sum of cubes is 784
```

In [3]:

```
# Write the definition of a function zero_ending(scores) to add all those values ir
# which are ending with zero and display the sum.
# For example: If the scores contain [200, 456, 300, 100, 234, 678] The sum should



def zero_ending(scores):
    sum = 0
    for i in scores:
        if i%10 == 0:
            sum += i
    return(sum)

lst = eval(input('Enter a list of numbers : '))

new_sum = zero_ending(lst)
print('The sum of numbers ending with zero =',new_sum)
```

```
Enter a list of numbers : [200, 456, 300, 100, 234, 678]
The sum of numbers ending with zero = 600
```

In [4]:

```
# Write a definition of a method count_now(places) to find and display those place
# in which there are more than 5 characters.

# For example :
# If the list places contains
# ["DELHI","LONDON","PARIS","NEW YORK","DUBAI"]
# The following should get displayed :
# LONDON
# NEW YORK



def count_now(lst):
    elist= []
    for i in lst:
        if len(i)>5:
            elist.append(i)
    return elist

lst_words = eval(input('Enter the list of words : '))

count_new = count_now(lst_words)
print('Words having characters more than 5 is ',count_new)
```

```
Enter the list of words : ["DELHI","LONDON","PARIS","NEW YORK","DUBAI"]
Words having characters more than 5 is  ['LONDON', 'NEW YORK']
```

In [13]:
```
# Write a method in python to display the elements of list thrice if it is a numbe
# the element terminated with '#' if it is not a number.

# For example, if the content of list is as follows :
# ThisList=['41','DROND','GIRIRAJ', '13','ZARA']
# The output should be
# 414141
# DROND#
# GIRIRAJ#
# 131313
# ZARA#


def dis_list(lst):
    for i in lst :
        if i.isdigit() :
            print(3*i)
        else:
            print(i+'#')


dis_list(['41','DROND','GIRIRAJ', '13','ZARA'])
```

```
414141
DROND#
GIRIRAJ#
131313
ZARA#
```

In [1]:
```
# For a given list of values in descending order, write a method in python to searc
# for a value with the help of Binary Search method.
# The method should return position of the value and should return -1 if the value


def binary_search(lst, x):
    low = 0
    high = len(lst)-1
    mid = 0

    while low <= high :
        mid = (low+high)//2

        if lst[mid] > x :
            low = mid + 1

        elif lst[mid] < x:
            high = mid - 1

        else:
            return mid

    return -1

list = eval(input('Enter the list in descending order :'))
num = eval(input('Enter the number to find its index value :'))

index = binary_search(list,num)
if index != -1:
    print('Element found at index',str(index))
else:
    print('Element not found')
```

```
Enter the list in descending order :[90,80,70,60,50,40,30]
Enter the number to find its index value :50
Element found at index 4
```

In [4]:
```
# Write a function half_and_half that takes in a list and change the list
# such that the elements of the second half are now in the first half.

# For example, if the size of list is even and content of list is as follows :
# my_liist = [10,20,30,40,50,60]
# The output should be
# [40,50,60,10,20,30]
# if the size of list is odd and content of list is as follows :
# my_liist = [10,20,30,40,50,60,70]
# The output should be
# [50,60,70,40,10,20,30]
```

```
def half_and_half(list):
    if len(list) % 2 == 0:
        start = 0
    else:
        start = 1

    l = len(list)//2

    for i in range(l):
        temp = list[i]
        list[i] = list[i+l+start]
        list[i+l+start] = temp



my_list = [10,20,30,40,50,60,70]
half_and_half(my_list)
print(my_list)
```

```
[50, 60, 70, 40, 10, 20, 30]
```

In [7]:
```
# Write a function that accepts a dictionary as an argument. If the dictionary cont
# return an empty dictionary, otherwise, return a new dictionary whose values are t
# keys are the values.
```

```
def swap_key_value(d):
    L = list(d.values())
    for value in L:
        if L.count(value) > 1:
            return dict()

    new_dict = {}
    for k, v in d.items():
        new_dict[v] = k
    return new_dict


d = {'a':10,'b':20,'c':20}
print(d)
n = swap_key_value(d)
print(n)
```

```
d = {'a':10,'b':20,'c':30}
print(d)
n = swap_key_value(d)
print(n)
```

```
{'a': 10, 'b': 20, 'c': 20}
{}
{'a': 10, 'b': 20, 'c': 30}
{10: 'a', 20: 'b', 30: 'c'}
```

In [ ]:

In [ ]:

In [ ]:

In [ ]: