In [1]:
```python
#what is a function?
#  = A function is a block of code which only runs when it is called.
# you can pass data, known as parameter, into function.
# A function can return data as a result.

####CREATING A FUNCTION

#in python a function is defined using the keyword:

#There are mainly two types of function.

#user defoined functions: the user defined function defined by the user to per
#the specific task.

#BUILT IN FUNCTION: The buikd function are those function thar are predefined
#in python.

# How to create a function.

'''def x():
    print("hello")'''

#how to call a function

'''def x():
    print("hello")

x()

x()

x()'''

#HOW can we pass an argument.

'''def add(a,b):
    print(a+b)
def sub(c,d):
    print(c-d)
def mul(e,f):
    print(e*f)

add(5,6)
add(5,2)
sub(3,7)
sub(7,9)
mul(9,9)
mul(2,5)'''

#CREATE  functions and pass two arguments and perform all arthmetic operations
#then call it in shuffling way.

#first subtraction
#second multiplication
```

```python
#third division
#fourth floor division
#fifth exponentiation
#sixc modolus
#add in the seventh function


'''def sub(c,d):
    print(c-d)

def mul(e,f):
    print(e*f)

def div(a,b):
    print(a/b)

def floor(y,z):
    print(y//z)

def exp(s,t):
    print(s**t)

def mod(r,p):
    print(r%p)

def add(l,m):
    print(l+m)

sub(3,7)
sub(7,9)
mul(9,9)
mul(2,5)
div(4,5)
div(6,7)
floor(7,7)
floor(3,6)
exp(5,5)
exp(2,8)
mod(6,9)
mod(4,6)
add(7,8)
add(10,45)'''


#PERFORM a function with the help of user input


'''def x():
    a=int(input("enter a number: "))
    b=int(input("enter a number: "))
    print(a+b)
    print(a*b)
    print(a//b)
    print(a%b)
    print(a/b)
    print(a**b)
```

```
    print(a-b)
x()'''


#    parameters or arguments?

'''The parameter and argument can be used for the same things: information tha
are passed into a function.

FROM a function perspective:

A parameter is the variable listed inside the parameter

ARBITRARY ARGUMENTS, * args'''

'''def x(*names):

    print("i am good"+ names[0])
    print("hello world" + " "+ names[2])
    print("good morning",names[5])
    print("i am indian officer"+" "+ names[2])
    print("i am an army officer" +" "+ names[4])

x("ABC","XYZ","IBM","GOOGLE","REF","INDIAN","MICROSOFT","AMAZON")'''

'''keyword arguments

you can also send arguments with the key= value syntax.arguments
this way the older of the arguments doesnot matter.'''


# def x(Name,Age,Class):
#    print("my name is"+" "+Name)
#    print("my class is",Class)
#    print("my age is",Age)

# x(Name="abc",Age="18",Class="12")

#1 Create three function and take two arguments in first function and do expon
#and in second function create a dicitonary and print the all keys of this dic
#and in third function create a set and update this set.

'''def exp(a,b):
    print(a**b)
exp(5,7)'''

# def di():
#    x={
#    'hello' : 56,
#    "where" : 12,
#    "are"   : 55,
#    "you"   : 22
#    }
#    for i in x:
#        print(i)
```

```python
# di()
# di()

# def di():
#    a=set()
#    b=(4,5,6)
#    a.update(b)
#    print(a)

# di()



#2 Create three fucntion in first function do exponentiatiuon,in second fucnti
#multiplication and in third functions do subtraction.and call it in shuffling

# def exp(a,b):
#    print(a**b)
# def mul(c,d):
#    print(c*d)
# def sub(e,f):
#    print(e-f)

# exp(4,5)
# mul(5,9)
# sub(7,9)

#3 Create three function and find the exponent in first function,find floor di
# in second fucntion find the modulus in third function ,take two arguments an
# function to three times,call second function to one time and call third func
# call it in shuffling way. take different parameters when you call the functi

# def exp(a,b):
#    print(a**b)
# def floor(c,d):
#    print(c//d)
# def mod(e,f):
#    print(e%f)

# exp(4,6)
# exp(1,6)
# exp(2,5)
# floor(5,6)
# mod(8,7)
# mod(2,2)

# abritrary keyword argument
# If you do not know how many arguments that will be passed into your function

# This way the function will receive a tuple of arguments, and can access the
# Example

# If the number of arguments is unknown, add a * before the parameter name:

# def x(**a):
```

```
#    print("My Name is"+" "+a["Name"])
#    print("My Class is" + a["Class"])
#    print("My Age is" + a["Age"])

# x(Name="ABCD",Age="18",Class="10",Roll_no="37")


# Default Parameter Value

# The following example shows how to use a default parameter value.

# If we call the function without argument, it uses the default value:

# def x(city="Delhi"):
#   print("I am from", city)

# x("punjab")
# x("rajasthan")
# x()
# x("M.p")
# x()
# x()


# The pass Statement

# function definitions cannot be empty, but if you for some reason have a func
# Example

# def x():
#    pass

# RETURN VALUES

# To let a function return a value,use the return statement:

# def a(x):

#   return 5 * x

# print(a(3))

# print(a(5))

# print(a(7))

 # ########################

 # CREATE thre function find division in first function and print table of any
 # with the help of while loop i second function and find the multiplication i
 # Take two argument in first and third function and take user input.in second
 # it in theshuffling way.

# 1.1

# def div(a,b):
```

```python
#    print(a/b)

# div(5,6)
# div(2,5)

# 1.2

# def table():
#    x=int(input("enter a table: "))
#    i=1
#    j=10
#    while i<=j:
#        print(i*x)
#        i=i+1
# table()

# 1.3

# def mul(c,d):
#    print(c*d)
# mul(5,4)
# mul(5,2)

# question 2

#Create a function and make a list with ther eight items and remove two items
# only one item on the place of two items without method

# def x():
#    a=[1,2,3,4,5,6,7,8]
#    a[4:6]=[9]
#    print(a)
# x()


# question 3

# Create a fucntion and make a tupe with five elements and add one item in thi
# and item index should be 3


# def x():
#    a=("hello","how","are","you","kemp")
#    print(a)
#    d =list(a)
#    d.insert(3,"runo")
#    print(d)
#    a=tuple(d)
#    print(d)
# x()

# question 4

# create three function and find the  factorial in first function, and print o
# counting with the help of while loop and in third function take two argument
```

```python
# 4.1

# def fac():
#    x=int(input("enter any number: "))
#    y=1
#    while x>=1:
#        y=y*x
#        x=x-1
#        print(y)
# fac()

# 4.2


# def rev():
#    x=int(input("enter a number to reverse: "))
#    i=0
#    while x>i:
#        print(x)
#        x=x-1

# rev()

# 4.3

# def add(a,b):
#    print(a+b)
# def mul(c,d):
#    print(c*d)
# add(5,9)
# mul(7,7)

# ####### Python anonymous / lambda function

# The anonymous function, also known as lambda functons.

# In python, an anonymous function is a function that is defined without a nam

# While normal function are defined using the def keyword in python, anonymous

# hence, anonymous function are also called lambda functions.

# A lambda function is a small anonymous function.

# # A lambda function can take any number of arguments, but can only have one

# Example

# Add 10 to argument a, and return the result:

# x = lambda a : a + 10
# print(x(5))

# Lambda functions can take any number of arguments:

# Example
```

```python
# Multiply argument a with argument b and return the result:

# x = lambda a, b : a * b
# print(x(5, 6))


# Example

# Summarize argument a, b, and c and return the result:

# x = lambda a, b, c : a + b + c
# print(x(5, 6, 2))

# x = lambda a,b,c,d,e,f : a + b * c - d + e / f

# print(x(2,5,6,7,8,9))

#  PYTHON ZIP() FUNCTION

# JOIN TWO TUPLES TOGETHER:

# x=("sun","mon","tues")

# y=("jan","feb","march")

# z=zip(x,y)

# print(tuple(z))


# x=("sun","mon","tues","thur")

# y=("jan","feb","march","april")

# z=zip(x,y)

# print(list(z))



# x=("sun","mon","tues")

# y=("jan","feb","march")

# z=zip(x,y)

# print(set(z))

# x=("hello","runo","haha")
# y=("what","haha","noob")
# z=zip(x,y)
# print(tuple(z))


# # Create a function and take six argument and perform any arithmetic operati
```

```python
# a single line expression

# x = lambda a,b,c,d,e,f : a + b * c - d + e / f

# print(x(2,5,6,7,8,9))



# Create a function and with the help of two tuple make a dictionary.

# a={"hello","yoo","what"}
# b={"where","are","you"}
# z=zip(a,b)
# print(dict(z))



# Create four function an perform arithmetic operation ass you want in each fu
# in a shufling way

# def exp(a,b):
#    print(a**b)
# def floor(c,d):
#    print(c//d)
# def mod(e,f):
#    print(e%f)
# def add(z,y):
#    print(z+y)



# floor(5,6)
# mod(8,7)
# add(9,9)
# exp(6,9)

# CREATE two function and find the 10 even number in first function and find 1

# def even():
#    x=int(input("enter any number to check :"))
#    y=0
#    z=0
#    while z<x:
#        y+=1
#        if y%2==0:
#            print(y)
#            z+=1
# even()



# def odd():
#    x=int(input("enter any number to check :"))
#    y=0
#    z=0
#    while z<x:
#        y=y+1
#        if y%2!=0:
#            print(y)
#            z=z+1
```

```
# odd()


# CREATE three function and find the 10 whole number do the sum of these whole
# in first function and find the exponent in second function


# def who():
#   x=int(input("enter any number to check :"))
#   y=0
#   z=0
#   s=0
#   while z<x:
#       y=y+1
#       if y%2==0:
#           print(y)
#           z=z+1
#           s=s+1
#           print("the sum of whole numnber: ",s)
# who()
```

Out[1]: 'def exp(a,b):\n\tprint(a**b)\nexp(5,7)'

In [ ]: