'''

(1) write a program to create one array from another array.

'''

x= [343,55,63,2,2]

print("original array")

print(x)

y=[]

y[:] = x

print("New Array\n",y)

'''

(2) create a program to retrieve, display and update only a range of elements from an array using indexing and slicing in arrays.

'''

import numpy as np

array = np.array([43,55,22,3,533])

for x in array:

print(x)

array[0] = 500

print(array)

print(array[0:5:2])

*#note => range of elements word*

*'''*

*(3)=> write a program to understand various methods of array class mentioned: append, insert , remove , pop , index , tolist and count*

*'''*

*import array as arr*

*a = arr.array('i', [52,262,13,22,3,2,52,1])*

*print(a)*

*a.append(50)*

*print("array after append")*

*a.insert(1,633)*

*print("array after inserting 633 at 2nd position / 1st index\n",a)*

*a.remove(50)*

*print("remove 50 from array\n",a)*

*a.pop()*

*print("pop last element of array\n",a)*

*print("5th index of array",a[5])*

*print("Array to list=>",a.tolist())*

*print("Count of 52",a.count(52))*

*'''*

*(4)=> write a program to sort the array elemnts using bubble sort techniques.*

*'''*

*import array as a*

*def bubblesort(arr):*

*n = len(arr)*

*for i in range(n-1):*

*for j in range(0,n-i-1):*

*if arr[j] > arr[j+1]:*

*arr[j],arr[j+1] = arr[j+1],arr[j]*

*return arr*

*a= a.array('i',[53,6,2,2,26,6,263,1,2])*

*print(bubblesort(a))*

*'''*

*(5)=> create a program to search the position of an element in an array using index() method of array class.*

*'''*

*import array as np*

*a = np.array('i',[535,256,6,6,2,6,2,46,2])*

*pos = a.index(int(input("Enter Element from above list=>")))*

*print(pos)*

*'''*

*element= int(input("Enter the search element=>"))*

*try:*

*pos = a.index(element)*

*print(f"element {element} found at position {pos}")*

*except ValueError:*

*print(f" element {element} not found")*

*'''*

*'''*

*(6) => write a program to gnerate prime numbers with the help of a function to test prime or not.*

*'''*

*def checkprime():*

*num = int(input("Enter a number->"))*

*if num <= 1:*

*print(num, " is a not prime number")*

*return*

*c=0*

*for i in range(1,num+1):*

*if num % i == 0:*

*c += 1*

*if c == 2:*

*print(num," is a prime number")*

*else:*

*print(num, " is not a prime number")*

*checkprime()*

*'''*

*(7) => write a python program that remove any repeated items from a list so that each item appears at most once. for instance, the list [1,1,2,3,4,3,0,0] would become [1,2,3,4,0]*

*'''*

*list1 = [1,1,2,3,4,0,0]*

*list2= []*

*for i in list1:*

*if i not in list2:*

*list2.append(i)*

*'''*

*else:*

*print(i," value is repeating")*

*'''*

*print(list2)*

*'''*

*(8) write a program to pass list to a function and display it*

*'''*

*def display\_list(list1):*

*for i in list1:*

*print(i)*

*list1=[435,5,23,1,3]*

*display\_list(list1)*

*'''*

*(9)=> write a program to demostrate the use of Positional argument, keyword argument and default arguments*

*'''*

*'''*

*#Positonal Arguments*

*This type of argument structure means you must provide all values in the exact order expected by the function.*

*'''*

*def pos(x,y,z):*

*print(x,y,z)*

*pos("a","b","c")*

*#Keyword Argument*

*def kw(x,y,z):*

*print(x,y,z)*

*kw(z="c",y="e",x="o")*

*#Default argument*

*def da(x,y,z="c"):*

*print(x,y,z)*

*da("c","d")*

*da("a","b","d")*

*'''*

*(10)=> Write a program to show variable length argument and its use.*

*'''*

*def variable\_length(\*args):*

*for i in args:*

*print(i)*

*variable\_length([53,33,6,3,2])*

*def kwargs(\*\*kwargs):*

*for key,value in kwargs.items():*

*print("Key=>",key,"\nValue=>",value)*

*data = {"1":"abc","2":"xyz"}*

*kwargs(\*\*data)*

*'''*

*(11)=> write a lambda/anonymouse function to find bigger number in two given numbers.*

*'''*

*val = lambda x,y:max(x,y)*

*print(val(53,52))*

*'''*

*(12)=> create a decorator function to increase the value of function by 3.*

*'''*

*def increase(func):*

*def wrapper(number):*

*return func(number)+3*

*return wrapper*

*@increase*

*def plus\_three(number):*

*return number*

*#plus\_three = increase(plus\_three)*

*print(plus\_three(10))*

*'''*

*(13)=> create a program name "employee".py and implements the functions DA,HRA,PF and ITAX. create anohter program that uses the function of employee module and calculate gross and net salaries of an employee.*

*'''*

*#employee.py*

*def DA(basic\_salary): #Dearness allowance*

*return basic\_salary \* 0.10*

*def HRA(basic\_salary): #House Rent Allowance*

*return basic\_salary \* 0.20*

*def PF(basic\_salary): #provident fund*

*return basic\_salary \* 0.12*

*def ITAX(gross\_salary): #income tax*

*return gross\_salary \* 0.05*

*#main.py*

*from employee import DA,HRA,PF,ITAX #\**

*def cal\_salary(basic\_salary):*

*da = DA(basic\_salary)*

*hra = HRA(basic\_salary)*

*pf = PF(basic\_salary)*

*gross\_salary = basic\_salary + da + hra*

*itax = ITAX(gross\_salary)*

*net\_salary = gross\_salary - pf - itax*

*return gross\_salary, net\_salary*

*basic\_salary = float(input("Enter the basic salary->"))*

*gross\_salary, net\_salary = cal\_salary(basic\_salary)*

*print(f"Gross salary => {gross\_salary:.2f}")*

*print(f"Net Salary => {net\_salary}")*

*'''*

*(14)=> write a programm to create a list using range functions and*

*perform append,update and delete elements operations in it.*

*'''*

*list1 = [i for i in range(0,9)]*

*'''*

*list1 = []*

*for i in range(0, 9):*

*list1.append(i)*

*'''*

*print(list1)*

*list1.append(50)*

*print(list1)*

*list1.insert(2,40)*

*print(list1)*

*list1.remove(40)*

*print(list1)*

*'''(15)=> write a program to combine twolist, perform repetition of lists and*

*create cloning of lits.*

*'''*

*list1= [i for i in range(1,7)]*

*list2 =[i for i in range(7,13)]*

*print(list1)*

*print(list2)*

*list3 = list1+list2*

*print(list3) #[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]*

*#perform repetition*

*new\_list = [i for i in list3 for x in (0,1)]*

*print(new\_list) #[1, 1, 2, 2, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 9, 9, 10, 10, 11, 11, 12, 12]*

*list4=list2[:]*

*print(list4)*

*print(list2)*

*'''(16)=> create a sample list of 7 elements and implements the list methods*

*mentioned: append,insert,copy, extend, count,remove, pop,sort,reverse and clear*

*'''*

*list1=[i for i in range(0,7)]*

*print(list1)*

*#append*

*list1.append(50)*

*print(list1)*

*#insert*

*list1.insert(2,50)*

*print(list1)*

*#copy*

*list2=list1.copy()*

*print(list2)*

*#extend*

*list3=[i for i in range(7,12)]*

*list1.extend(list3)*

*print(list1)*

*#count*

*print(list1.count(50))*

*#remove*

*list1.remove(50)*

*print(list1)*

*#pop*

*print(list1.pop())*

*print(list1)*

*#reverse*

*list1.reverse()*

*print(list1)*

*#clear*

*list2.clear()*

*print(list2)*

*'''*

*(17)=> write a program to create nested list and display its elements.*

*'''*

*list1=[[1,2,3],[4,5,6],[7,8,9]]*

*for x in list1:*

*print(f"\n{x}")*

*#print(" ".join(map(str,x)))*

*'''*

*(18)=> Write a program to accpect elements in the form of a tuple*

*and display its minimum, maximum, sum and average.*

*'''*

*tup = (1,23,4,5,6,63,6,3,4)*

*print("max=>",max(tup))*

*print("min=>",min(tup))*

*print("sum=>",sum(tup))*

*print("Avg=>",sum(tup)/len(tup))*

*'''*

*(19)=> Creae a program to sort tuple with nested tuples.*

*'''*

*nested\_tuples = ((3, 'apple'), (1, 'banana'), (2, 'orange'))*

*sorted\_tuples = sorted(nested\_tuples, key=lambda x: x[0])*

*print(sorted\_tuples)*

*'''*

*typ = [(1, (2, 3)), (3, (2, 1)), (2, (2, 1))]*

*sort\_tup = sorted(typ, key=lambda t: (t[1][1], t[0]))*

*print(sort\_tup) #[(3, (2, 1)), (2, (2, 1)), (1, (2, 3))]*

*EXP*

*'''*

*'''*

*(20)=> Write a program to create a dictionary from the user and display the elements.*

*'''*

*my\_dict = {'name':"xyz","age":17,"address":"idk dude"}*

*print(my\_dict["name"])*

*print(my\_dict["age"])*

*print(my\_dict["address"])*

*'''(21)=> Create a dictionary that will accpect cricket players name and*

*score in a match. Also we are retrieving runs by entering the player'name*

*'''*

*score\_dict = {}*

*def add\_player\_score(name,score):*

*score\_dict[name] = score*

*def get\_player\_score(name):*

*return score\_dict.get(name,"Player not found")*

*add\_player\_score("virat kohli",75)*

*add\_player\_score("rohit sharma",6)*

*add\_player\_score("ms",57)*

*player\_name = input("Enter player name=>")*

*score = get\_player\_score(player\_name)*

*print(f"{player\_name} => {score}")*

*'''*

*(22)=> write a program to convert the elements of two list into key-value*

*pairs of dictionary.*

*'''*

*value=['python','c++','java','ruby']*

*index = [1,2,3]*

*dict1=dict(zip(index,value))*

*print(dict1)*

*'''*

*(23)=> Create a python function to accpect python function as a dictionary*

*# and display its elements.*

*'''*

*def func(d):*

*for key in d:*

*print("Key=>",key,"Value=>",d[key])*

*dict = {1:'a',2:'b'}*

*func(dict)*