\*\*\*PYTHON ASSIGNMENT 2\*\*\*

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Q26. What is a string? How can we declare string in Python?

ANS: A string is a sequence of characters which are declared in single quotes or double quotes. Declaration of string in python:

str="hello"

print (str)

Q27. How can we access the string using its index?

ANS: We can access the characters in string by referring index number inside the square brackets.

str1 ="hello"

print(str1[0])

Q28. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "iNeuron"

ANS: CODE

string ="Big Data iNeuron"

print(string[9:])

[Running] python -u "/config/workspace/examples.py"

iNeuron

Q29. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "norueNi"

ANS:CODE

string ="Big Data iNeuron"

print(string[16:8:-1])

[Running] python -u "/config/workspace/examples.py"

norueNi

Q30. Resverse the string given in the above question.

ANS:CODE

string ="Big Data iNeuron"

print(string[16::-1])

[Running] python -u "/config/workspace/examples.py"

norueNi ataD giB

Q31. How can you delete entire string at once?

ANS:By using del keyword we can delete the string

string ="Big Data iNeuron"

del string

print(string)

[Running] python -u "/config/workspace/examples.py"

Traceback (most recent call last):

  File "/config/workspace/examples.py", line 5, in <module>

    print(string)

NameError: name 'string' is not defined

Q32. What is escape sequence?

ANS: Escape sequence allow to add special characters in string(ex: by adding blackslash before charcter you want to escape).

Q33. How can you print the below string?

'iNeuron's Big Data Course'

ANS: CODE

string ='iNeuron\'s Big Data Course'

print(string)

[Running] python -u "/config/workspace/examples.py"

iNeuron's Big Data Course

Q34. What is a list in Python?

ANS: List in python is used to store sequence of data types.

Q35. How can you create a list in Python?

ANS: We create list in python using square brackets.

L1=[]

print(L1)

[Running] python -u "/config/workspace/examples.py"

[]

Q36. How can we access the elements in a list?

ANS: We can acess elements in list by representing indices

L1=[1,2,3,4]

print(L1[1])

[Running] python -u "/config/workspace/examples.py"

2

[Done] exited with code=0 in 0.026 seconds

Q37. Write a code to access the word "iNeuron" from the given list.

lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]

ANS:

lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]

print(lst[4][2])

[Running] python -u "/config/workspace/examples.py"

iNeuron

[Done] exited with code=0 in 0.027 seconds

Q38. Take a list as an input from the user and find the length of the list.

ANS:

List = []

print("Enter list element , (5 to exit): ")

while(1):

    x = int(input())

    if(x == 5):

        break

    List.append(x)

print("List : ", List)

print("length of the list is: ", len(List))

Enter list element , (5 to exit):

1

2

3

4

5

List : [1, 2, 3, 4]

length of the list is: 4

Q39. Add the word "Big" in the 3rd index of the given list.

lst = ["Welcome", "to", "Data", "course"]

ANS: lst = ["Welcome", "to", "Data", "course"]

lst.insert(2,"Big")

print(lst)

abc@2fbe8d8bc67a:~/workspace$ /bin/python /config/workspace/A

['Welcome', 'to', 'Big', 'Data', 'course']

Q40. What is a tuple? How is it different from list?

ANS:A tuple is an ordered and immutable data type written in round brackets() whereas list is used to store sequence of data types and it is mutable written in square brackets[].

Q41. How can you create a tuple in Python?

ANS: T1=()

print(T1)

Q42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.

ANS: T1=("sita","and")

T1[2]="shailu"

print(T1)

TypeError: 'tuple' object does not support item assignment

No,we are not able to do because tuple is immutable.

Q43. Can two tuple be appended. If yes, write a code for it. If not, why?

ANS: T1.append("shailu")

AttributeError: 'tuple' object has no attribute 'append'

Q44. Take a tuple as an input and print the count of elements in it.

ANS: x = input('Please enter some values:')

input\_tuple = tuple(int(val) for val in x.split())

print('tuple:',input\_tuple)

count = input\_tuple.count(1)

abc@274f175c323b:~/workspace$ /bin/python /config/workspace/a.py

Please enter some values:1 2 1 2 1

tuple: (1, 2, 1, 2, 1)

The count of 1 is: 3

Q45. What are sets in Python?

ANS:Sets in python is a data structure where we dump different elements which have a unique values(no duplicate values),represented by {}.

Q46. How can you create a set?

ANS: set1={1,2,1,2,3,5}

Q47. Create a set and add "iNeuron" in your set.

ANS: set1={1,2,1,2,3,5}

print(set1)

set1.add("iNeuron")

print(set1)

abc@274f175c323b:~/workspace$ /bin/python /config/workspace/a.py

{1, 2, 3, 5}

{1, 2, 3, 5, 'iNeuron'}

Q48. Try to add multiple values using add() function.

ANS: set1={1,2,1,2,3,5}

print(set1)

set1.add("iNeuron")

set1.add(7)

set1.add(8)

set1.add(9)

print(set1)

abc@274f175c323b:~/workspace$ /bin/python /config/workspace/a.py

{1, 2, 3, 5}

{1, 2, 3, 5, 7, 8, 9, 'iNeuron'}

Q49. How is update() different from add()?

ANS: In python, to add a single element we use add() function,whereas to add multiple elements we use update () function.

Q50. What is clear() in sets?

ANS: clear() is used to clear all elements in the set.

Q51. What is frozen set?

ANS: Frozen set create an immutable object from an iterable and it is a built in function.

Q52. How is frozen set different from set?

ANS: In python, frozen set are immutable object(means remain same once created) where as set is a mutable object(can be changed after creation).

Q53. What is union() in sets? Explain via code.

ANS: union() in sets: all the elements in sets.

set1={1,2,1,2,3,5}

set2={7,8,9,3,5}

print(set1|set2)

{1, 2, 3, 5, 7, 8, 9}

Q54. What is intersection() in sets? Explain via code.

ANS: intersection() in sets: common elements in sets.

set1={1,2,1,2,3,5}

set2={7,8,9,3,5}

#print(set1|set2)

print(set1&set2)

{3, 5}

Q55. What is dictionary in Python?

ANS: In python ,dictionary is a collection that is ordered ,changeable and do not allow duplicates.

Q56. How is dictionary different from all other data structures.

ANS:In dictionary, items are represented in key: value, this are referred by using key name.

Q57. How can we delare a dictionary in Python?

ANS: dict2={}

dict2['name']='shailu'

dict2['age']='24'

print(dict2)

{'name': 'shailu', 'age': '24'}

Q58. What will the output of the following?

var = {}

print(type(var))

ANS: <class 'dict'>---print type of given var.

Q59. How can we add an element in a dictionary?

ANS: dict2={}

dict2['name']='shailu'

dict2['age']='24'

print(dict2)

dict2.update({'gender':'female'})

print(dict2)

{'name': 'shailu', 'age': '24'}

{'name': 'shailu', 'age': '24', 'gender': 'female'}

Q60. Create a dictionary and access all the values in that dictionary.

ANS:

dict2={}

dict2['name']='shailu'

dict2['age']='24'

#print(dict2)

dict2.update({'gender':'female'})

#print(dict2)

total\_values=list(dict2.values())

print (total\_values)

['shailu', '24', 'female']

Q61. Create a nested dictionary and access all the element in the inner dictionary.

ANS: dict2={}

dict2['name']='shailu'

dict2['age']='24'

#print(dict2)

dict3={'color':'black','gender':'female'}

dict2['other details']=dict3

print(dict2)

{'name': 'shailu', 'age': '24', 'other details': {'color': 'black', 'gender': 'female'}}

Q62. What is the use of get() function?

ANS:get()function used when we need to get a value of any item in dictionary with a specified key.

Q63. What is the use of items() function?

ANS:items() function used to return list with all dictionary keys with values.

Q64. What is the use of pop() function?

ANS:pop() function used to remove elements from list.

Q65. What is the use of popitems() function?

ANS:popitems() function used to remove the last item from a specified dictionary.

Q66. What is the use of keys() function?

ANS: keys() function used to return a new object that contain alist of all keys in dictionary.

Q67. What is the use of values() function?

ANS:values() function returns a new object that contain a list with all values in dictionary.

Q68. What are loops in Python?

ANS:Loops in python-used to repeat a statement or group of statement if condition is true.

Q69. How many type of loop are there in Python?

ANS: for loop and while loop.

Q70. What is the difference between for and while loops?

ANS: for loop used when we know the number of iterations whereas while loop used iteration are unknown.

Q71. What is the use of continue statement?

ANS:continue statement is used to return the control flow of program to the beginning of loop.

Q72. What is the use of break statement?

ANS:break statement used to terminate the execution of loop.

Q73. What is the use of pass statement?

ANS: pass statement is a null statement ,used as a placeholder for future code.

Q74. What is the use of range() function?

ANS: range() function returns an immutable sequence of number startingfrom 0 and incremented by one and ends at a specified number, used to get specified range of values.

Q75. How can you loop over a dictionary?

ANS: Using for loop ,we can loop over a dictionary.

**Coding problems**

Q76. Write a Python program to find the factorial of a given number.

import math

a = int(input(" enter number : "))

fact = math.factorial(a)

print("The Result of %d  = %d" %(a, fact))

enter number : 5

The Result of 5 = 120

Q77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (PRT)/100

p = int(input("Enter principal amount: "))

r = int(input("Enter rate of interest: "))

t = int(input("Enter time : "))

simpleInterest = (p\*r\*t)/100

print("Simple Interest = ",simpleInterest)

Enter principal amount: 2000

Enter rate of interest: 2

Enter time : 2

Simple Interest = 80.0

Q78. Write a Python program to calculate the compound interest. Formula of compound interest is A = P(1+ R/100)^t.

p = int(input("Enter principal amount: "))

r = int(input("Enter rate of interest: "))

t = int(input("Enter time : "))

compoundInterest = p\*(1+r/100)\*\*t

print("CI = ",compoundInterest)

Enter principal amount: 1000

Enter rate of interest: 2

Enter time : 2

CI = 1040.4

Q79. Write a Python program to check if a number is prime or not.

num=int(input("enter a number"))

if num > 1:

   for i in range(2, num//2):

      if (num % i) == 0:

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

         break

      else:

         print(num, "is a prime number")

   else:

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

enter a number24

24 is not a prime number

Q80. Write a Python program to check Armstrong Number.

num = int(input("Enter a number: "))

sum = 0

temp = num

while temp > 0:

   x = temp % 10

   sum += x \*\* 3

   temp //= 10

if num == sum:

   print(num,"is an Armstrong number")

else:

   print(num,"is not an Armstrong number")

Enter a number: 153

153 is an Armstrong number

Q81. Write a Python program to find the n-th Fibonacci Number.

def fib\_num(n):

   if n<=0:

      print("Fibonacci can't be done")

   # First Fibonacci number

   elif n==1:

      return 0

   # Second Fibonacci number

   elif n==2:

      return 1

   else:

      return fib\_num(n-1)+fib\_num(n-2)

n=int(input("Enter n: "))

print("Fibonacci number is ",fib\_num(n))

Enter n: 5

Fibonacci number is 3

Q82. Write a Python program to interchange the first and last element in a list.

def swaplist(List):

   size = len(List)

   temp = List[0]

   List[0] = List[size - 1]

   List[size - 1] = temp

   return List

List = [1,12,3,4,5]

print(swaplist(List))

[5, 12, 3, 4, 1]

Q83. Write a Python program to swap two elements in a list.

def swap(list, p1, p2):

    list[p1], list[p2] = list[p2], list[p1]

    return list

List = [5, 4, 9, 7]

p1, p2  = 1, 3

print(swap(List, p1-1, p2-1))

[9, 4, 5, 7]

Q84. Write a Python program to find N largest element from a list.

def N\_max\_ele(list, N):

    result\_list = []

    for i in range(0, N):

        maximum = 0

        for j in range(len(list)):

            if list[j] > maximum:

                maximum = list[j]

        list.remove(maximum)

        result\_list.append(maximum)

    return result\_list

list1 = [21, 8, 87, 6, 0, 3, 2, 7, 23]

N = 3

print(N, "max elements  ",list1)

print(N\_max\_ele(list1, N))

3 max elements [21, 8, 87, 6, 0, 3, 2, 7, 23]

[87, 23, 21]

Q85. Write a Python program to find cumulative sum of a list.

list = []

length = int(input("Enter number of elements : "))

for i in range(0, length):

    value = int(input())

    list.append(value)

cumList = []

sumVal = 0

for x in list:

    sumVal += x

    cumList.append(sumVal)

print("Entered List ", list)

print("Cumulative sum List ", cumList)

Enter number of elements : 3

2

7

9

Entered List [2, 7, 9]

Cumulative sum List [2, 9, 18]

Q86. Write a Python program to check if a string is palindrome or not.

x=input("Enter string:")

if(x==x[::-1]):

   print("The string is a palindrome")

else:

   print("The string isn't a palindrome")

Enter string:mom

The string is a palindrome

Enter string:brother

The string isn't a palindrome

Q87. Write a Python program to remove i'th element from a string.

def remove\_char(s, i):

    a = s[ : i]

    b = s[i + 1: ]

    return a+b

string = "frog"

i = 2

print(remove\_char(string,i-1))

frog

fog

Q88. Write a Python program to check if a substring is present in a given string.

def check(str1, sstr):

   if (str1.find(sstr) == -1):

      print(sstr,"NOT PRESENT IN STRING")

   else:

      print(sstr,"PRESENT IN STRING")

str1 = input("Enter the string ")

sstr=input("Enter Substring ")

check(str1, sstr)

Enter the string PYTHON PROGRAM

Enter Substring PYTHON

PYTHON PRESENT IN STRING

Q89. Write a Python program to find words which are greater than given length k.

def string\_len(string\_length, my\_string):

   result\_string = []

   words = my\_string.split(" ")

   for x in words:

      if len(x) > string\_length:

         result\_string.append(x)

   return result\_string

string\_length = 3

my\_string ="ramu and ravi"

print(my\_string)

print ("words greater than given length " , string\_length )

print(string\_len(string\_length, my\_string))

ramu and ravi

words greater than given length 3

['ramu', 'ravi']

Q90. Write a Python program to extract unquire dictionary values.

myDict = {'mango': 20, 'apples': 11, 'orange': 23, 'banana': 1}

values = list({val for val in myDict.values() })

print(myDict)

print(values)

{'mango': 20, 'apples': 11, 'orange': 23, 'banana': 1}

[1, 11, 20, 23]

Q91. Write a Python program to merge two dictionary.

dict\_1={'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}

dict\_2={'meena': 12, 'swetha': 5}

dict\_1.update(dict\_2)

print(dict\_1)

{'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45, 'meena': 12, 'swetha': 5}

Q92. Write a Python program to convert a list of tuples into dictionary.

Input : [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

Output : {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}

Input =[('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

dict\_1 = dict(Input)

print(dict\_1)

{'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}

Q93. Write a Python program to create a list of tuples from given list having number and its cube in each tuple.

Input: list = [9, 5, 6]

Output: [(9, 729), (5, 125), (6, 216)]

Input\_list = [9, 5, 6]

output = [(val, pow(val, 3)) for val in Input\_list]

print(output)

[(9, 729), (5, 125), (6, 216)]

Q94. Write a Python program to get all combinations of 2 tuples.

Input : test\_tuple1 = (7, 2), test\_tuple2 = (7, 8)

Output : [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]

test\_tuple1 = (7, 2)

test\_tuple2 = (7, 8)

pairCombination = []

for val1 in test\_tuple1:

    for val2 in test\_tuple2:

        tup = [val1, val2]

        pairCombination.append(tuple(tup))

for val1 in test\_tuple2:

    for val2 in test\_tuple1:

        tup = [val1, val2]

        pairCombination.append(tuple(tup))

print("pair Combinations ", pairCombination)

pair Combinations [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]

Q95. Write a Python program to sort a list of tuples by second item.

Input : [('for', 24), ('Geeks', 8), ('Geeks', 30)]

Output : [('Geeks', 8), ('for', 24), ('Geeks', 30)]

def tuple\_sort(my\_input):

   return(sorted(my\_input, key = lambda x: x[1]))

my\_input = [('for', 24), ('Geeks', 8), ('Geeks', 30)]

print("output : ",tuple\_sort(my\_input))

output : [('Geeks', 8), ('for', 24), ('Geeks', 30)]

Q96. Write a python program to print below pattern.

n=5

for i in range(1,n+1):

     for j in range(1, i+1):

            print("\* ",end="")

     print( )

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

Q97. Write a python program to print below pattern.

n = 5

for i in range(n):

    for j in range(1, n - i):

        print(" ", end="")

    for k in range(0, i + 1):

        print("\*", end="")

    print()

\*

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Q98. Write a python program to print below pattern.

n=5

k=n-1

for i in range(0,n,1):

    for j in range(0,k):

        print(end=" ")

    k=k-1

    for j in range(0,i+1):

        print("\* ",end="")

    print()

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

Q99. Write a python program to print below pattern.

size = 5

for i in range(size):

    for j in range(i+1):

        print(j+1, end=" ")

    print("  ")

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q100. Write a python program to print below pattern.

size = 5

ascii= 65

for i in range(0,size):

    for j in range(0,i+1):

        val=chr(ascii)

        print(val, end=" ")

    ascii+=1

    print( )

A

B B

C C C

D D D D

E E E E E