Python Part-2 Assignment

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

ANS: A string is a data type in python, in python a string is a immutable, string is a sequence of character, in python a string is declare using double quotation or signal quotation.

Example: [“gomathi”,”23”,”salary”]

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

ANS: In python a index start from 0 with square brackets [ ] , so in string also using [ ] to access the index in string. we  can access the characters in a string by referring to its index number inside square brackets [] .

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

string = "Big Data iNeuron"

desired\_output = "iNeuron"

string = "Big Data iNeuron"

output = string[9:]

print("The desire output = ",output)

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

string = "Big Data iNeuron"

desired\_output = "norueNi"

string = "Big Data iNeuron"

print("The original string",string)

n = 9

output = string[::-1][:n-1]

print("The desire output = ",output)

Q30. Resverse the string given in the above question.

string1 = "Big Data iNeuron"

output = string1[::-1]

print("The reversed stirng output =",output)

Q31. How can you delete entire string at once?

Ans : we have to use del function to delete the entire string in the python

del(string)

print(string)

# NameError: name 'string' is not defined

Q32. What is escape sequence?

ANS: An escape sequence is a sequence of characters that, when used inside a character or string, does not represent itself but is converted into another character or series of characters

\n – to create a new line in string

Q33. How can you print the below string?

'iNeuron's Big Data Course'

str = """ 'iNeuron's Big Data Course' """

print(str)

Q34. What is a list in Python?

A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements. Each element or value that is inside of a list is called an item.

In a list can store different types of elements as a int,string,float,complex

Q35. How can you create a list in Python?

In python we have to create a list with square brackets

Eg: list = [1,2,3,5,8]

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

To access values in lists, use the square brackets for slicing along with the index

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

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

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

output = lst[4][2]

print(output)

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

list = input("Enter the elements:")

print("\n")

user\_input = list.split()

print("list:",user\_input)

print(len(user\_input))

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

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

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

lst[2] = 'Big\_Data'

print(lst)

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

Tuple are mutable, Tuple items are ordered, unchangeable, and allow duplicate values.

Q41. How can you create a tuple in Python?

Tuple are created using round brackets ( ) with different types of element.

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

tup = ("Gomathi chakaravarthy")

print(tup)

while using tuple we need to use round brackets tuple are mutable and unchangeable.

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

Yes , We can able to append the two tuples , we can create a new variable and append the two tuple and print it,

In tuple we can’t able use append function but can use + operator to add the tuple

tup1 = (1,2,3,4,5)

tup2 = (6,7,8,9)

result = tup1+tup2

print(result)

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

tup3 = (1,2,3,4,5,45,74)

print(len(tup3))

Q45. What are sets in Python?

Sets are unordered collection of unique elements in python, sets are not allowed the duplicate elements.

Q46. How can you create a set?

In Python, we **create sets** by placing all the elements inside curly braces {} or round braces() , separated by comma

set = set(tup3)

print(set)

print(type(set))

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

set6 = set()

set6.add('iNeuron')

print(set6)

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

set6 = set()

set6.add('iNeuron')

set6.add('is')

set6.add('learning platform')

print(set6)

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

set.add adds an individual element to the set.  [set.update](https://docs.python.org/3/library/stdtypes.html#set.update), you can pass multiple iterables to it and it will iterate all iterables and will include the individual elements in the set.

Q50. What is clear() in sets?

The clear () function is used to remove all the elements in a set.

Q51. What is frozen set?

**Python frozenset() Method**creates an immutable Set object from an iterable. It is a built-in Python function. As it is a set object therefore we cannot have duplicate values in the frozenset.

Q52. How is frozen set different from set?

A set is a mutable object while frozenset provides an immutable implementation

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

Union function it prints the unique elements in a 2 sets , it return all the elements from the 2 sets expect the duplicates

Set1= {1,2,4,5,8,9,47}

Set2 = {2,5,4,8,78,56}

Output = {1,2,4,5,8,9,47,56,78}

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

The intersection () method returns a set that contains the similarity between two or more sets.

x = {"a", "b", "c"}

y = {"c", "d", "e"}

z = {"f", "g", "c"}

result = x.intersection(y, z)

print (result)

output : {c}

Q55. What is dictionary ibn Python?

Dictionaries are **used to store data values in key:value pairs**. A dictionary is a collection which is ordered, changeable and do not allow duplicates.

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

Dictionary are store the values in key and value pair but in all the data structure it stores the elements in the data structure.

Q57. How can we delare a dictionary in Python?

Using dictionary in python we have use curly brackets with key and value pair inside the brackets

Syntax: {name(key):”gomathi”(value pair)}

Q58. What will the output of the following?

var = {}

print(type(var))

output: class, dict

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

dict1={"Name":'gomathi',"Age":27,"salary":50000}

print(dict1)

# adding elements in to the dict

dict1['Annunal\_income']='6LPA'

print(dict1)

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

dict1={"Name":'gomathi',"Age":27,"salary":50000}

print(dict1)

# adding elements in to the dict

dict1['Annunal\_income']='6LPA'

print(dict1['Name'])

print(dict1['Age'])

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

Dict = { 'Dict1': {'name': 'gomathi', 'age': '19'},

         'Dict2': {'name': 'ravi', 'age': '25'}}

# Prints value corresponding to key 'name' in Dict1

print(Dict['Dict1']['name'])

# Prints value corresponding to key 'age' in Dict2

print(Dict['Dict2']['age'])

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

Get() function used to return value of item with the specified key

Using get() function in dictionary it will the none in the console page .

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

In Python Dictionary, **items()** method is used to return the list with all dictionary keys with values.

It return all the values in dictionary using item function

Eg: syntax : variable name = dict.item(), print(dict.item())

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

It removes the key values in the dictionary

dict1={"Name":'gomathi',"Age":27,"salary":50000}

dict1.pop("Name")

print(dict1)

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

The popitem() function remove and return the elements in the dictionary it performance like a FILO method (first in last out method ) which element is inserted first that element will remove first while using the popitem() function

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

The keys() method in Python Dictionary, returns a view object that displays a list of all the keys in the dictionary in order of insertion using Python

dict1={"Name":'gomathi',"Age":27,"salary":50000}

x = dict1.keys()

print(x)

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

It performs like key function it return all the values in the dictionary .

dict1={"Name":'gomathi',"Age":27,"salary":50000}

x = dict1.values()

print(x)

Q68. What are loops in Python?

There are for loop and while loop are in python

* For loop used for iteration conditions which are know
* While loop are used for unknown conditions.

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

There are two type of loops in python

* For lop
* While loop

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

|  |  |  |
| --- | --- | --- |
| **Parameter** | **For Loop** | **While Loop** |
| Keyword | For Keyword is used | While Keyword is used. |
| Use | Number of iterations already known | No prior information on the number of iterations. |
| In absence of condition | Loop runs infinite times. | Display the compile time error. |
| Initialization Nature | Once done cannot be repeated. | Repeat at every iteration. |
| Function used | Range or x range function is used to iterate. | No such function is used in the while loop. |
| Generator Support | For loop can be iterated on generators in Python. | While loop cannot be iterated on Generators directly. |
| Speed | For loop is faster than while loop. | While loop is slower as compared to for loop. |

Q71. What is the use of continue statement?

The continue key word is used to end the current iteration and move to next iteration in for loop or while loop in python.

Q72. What is the use of break statement?

'Break' in Python is a loop control statement. It is used **to control the sequence of the loop**. Suppose you want to terminate a loop and skip to the next code after the loop; break will help you do that.

Q73. What is the use of pass statement?

A pass statement **signals to a loop that there is “no code to execute here.”** It's a placeholder for future code

It returns in the empty space in console instead of thronging an error .

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

The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and stops before a specified number.

Q75. How can you loop over a dictionary?

dict2={"Name":'gomathi',"Age":27,"salary":50000}

for x in dict2:

    print(dict2[x])

it return the values by default if need we can pass the item function and key function also.

**Coding problems**

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

######## factorical number program #########

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

factorial = 1

if num<0:

    print("the fractorical does not work for negative values ")

elif num == 0:

    print("the fratorical of 0 is 1")

else:

    for i in range(1,num+1):

        factorial = factorial\*i

    print("The factorial of",num,"is",factorial)

Q77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (P*R*T)/100

def simple\_interest(p,t,r):

    print('the principle amount is :',p)

    print('the time period is:',t)

    print('the rate of interset:',r)

    si = (p \* t\* r) /100

    print("the simple interset is:",si)

    return si

simple\_interest(10000, 5, 5)

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

def compound\_interest(p,t,r):

    print('the principle amount is :',p)

    print('the time period is:',t)

    print('the rate of interset:',r)

    A = p\*(pow(1+r/100, t))

    print("the Compound interset is:",A)

    return A

compound\_interest(10000, 5, 5)

# another method we can use input function

p = int(input("Enter the principle amount:"))

r= int(input("Enter the rate of interset:"))

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

A = p\*(pow(1+r/100, t))

print("Compound interest : {}".format(A))

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

n =5

if n>1:

    for i in range(2,int(n/2)+1):

        if (n%i) == 0:

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

        break

    else:

        print(n,'is a prime number')

else:

    print(n, "is not a prime number")

another method it generate the output

def PrimeChecker(a):

    # Checking that given number is more than 1

    if a > 1:

        # Iterating over the given number with for loop

        for j in range(2, int(a/2) + 1):

            # If the given number is divisible or not

            if (a % j) == 0:

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

                break

        # Else it is a prime number

        else:

            print(a, "is a prime number")

    # If the given number is 1

    else:

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

# Taking an input number from the user

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

# Printing result

PrimeChecker(a)

Q80. Write a Python program to check Armstrong Number.

 positive integer of n digits is called an Armstrong number of order n (order is number of digits) if. **abcd...** **= pow(a,n) + pow(b,n) + pow(c,n) + pow(d,n) + …..**

num = 578

# finding the length od string in the order

order = len(str(num))

temp = num

# initialize sum

sum = 0

while temp > 0:

  digit  = temp % 10

  sum += digit \*\* order

  temp //=10

# printt the result

if num == sum:

  print(num,'is amstrong number')

else:

  print(num,'is not a amstrong number')

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

def Fibonacci\_Series(n):

    # using if-else conditional statement

    if n < 0:

        print("Oops! Incorrect input")

    # First Fibonacci number is 0

    elif n == 0:

        return (0)

    # Second Fibonacci number is 1

    elif n == 1:

        return (1)

    else:

        return (Fibonacci\_Series(n - 1) + Fibonacci\_Series(n - 2))

# printing the 12th element of the Fibonacci Series

print("12th Element of the Fibonacci Series:", Fibonacci\_Series(12))

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

### Algorithm

**Step 1**- Define a function to swap elements with the list sl as a parameter.

**Step 2-** Swap elements sl[0] and sl[n-1] using a third variable.

**Step 3-** Return the swapped list.

**Step 4-** Define the list values.

**Step 5-** Pass the list in the function and print the result.

list1 = [1,2,4,5,6,7]

print(len(list1))

def Swapping(sl):

  n = len(list1)

  # Swapping

  temp = sl[0]

  sl[0] = sl[n-1]

  sl[n-1] = temp

  return sl

print(list1)

print("Swapped list: ",Swapping(list1))

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

list1 = [1,2,4,5,6,7]

print(len(list1))

def Swapping(sl,pos1,pos2):

  n = len(list1)

  # Swapping

  temp = sl[pos1]

  sl[pos1] = sl[pos2]

  sl[pos2] = temp

  return sl

pos1 = 2

pos2 = 5

print(list1)

print("Swapped list: ",Swapping(list1,pos1-1,pos2-1))

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

list1 = [1,2,4,5,6,7]

n=1

list1.sort()

print(list1[-n:])

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

list2=[10,20,30,40,50]

n=[]

j=0

for i in range(0,len(list2)):

  j+=list2[i]

  n.append(j)

  print(n)

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

def palindrome(n):

    return n == n[::-1]

n="gomathi"

output = palindrome(n)

if output:

  print("yes")

else:

  print("no")

def isPalindrome(s):

  return s == s[::-1]

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

def remove(string, i):

    for j in range(len(string)):

        if j == i:

            string = string.replace(string[i], "", 1)

    return string

# Driver Code

string = "gomathi"

    # Remove nth index element

i = 5

    # Print the new string

print(remove(string, i))

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

string = "gomathi is praticing the code it is easy to do"

substing = "and"

string = string.split()

print(string)

if substing in string:

  print("Yes")

else:

  print("No")

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

n="hello geeks for geeks is computer science portal";

l=6

s=n.split(" ")

l=list(filter(lambda x: (len(x)>l),s))

print(l)

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

dict1 = {'A' : [1, 3, 5, 4],

             'B' : [4, 6, 8, 10],

             'C' : [6, 12, 4 ,8],

             'D' : [5, 7, 2]}

print("The original dictionary is : " ,dict1)

# Using list comprehension, values() and sorted()

res = list(sorted({element for i in dict1.values() for element in i}))

# print result

print("The unique values list is : " , res)

Q91. Write a Python program to merge two dictionary.

d1 = {'Actress ' : 'Jasmine Wiley',

    'Cricketer' : 'Nicholas Pooran',

    'Basketball': 'Jordan',

    'Football' : 'Zindane'  }

d2 = {'Tennis ' : 'Maria',

    'Stadium  ' : 'Amsterdam',

    'Basketball' : 'Washington',

    'Actress' : 'Elizabeth'}

d1.update(d2)

print(d1)

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)]

print(type(Input))

result = dict(Input)

print(result)

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)]

list1 = [9, 5, 6]

result = [(val,pow(val,3)) for val in list1]

print(result)

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)]

#Program of print all pair combinations of 2 tuples

test\_tuple1 = (7, 2)

test\_tuple2 = (7, 8)

result = [(x,y) for x in test\_tuple1 for y in test\_tuple2]

result = result + [(x,y) for x in test\_tuple2 for y in test\_tuple1]

print(result)

# output [(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)]

tup = [('for', 24), ('Geeks', 8), ('Geeks', 30)]

print(tup)

Len = len(tup)

for i in range(0,Len):

  for j in range(0, (Len - i - 1)):

    if(tup[j][1] > tup[j+1][1]):

            temp = tup[j]

            tup[j] = tup[j+1]

            tup[j+1] = temp

#  sorted list

print("Sorted List : ", str(tup))

#OUTPUT = Sorted List :  [('Geeks', 8), ('for', 24), ('Geeks', 30)]

Q96. Write a python program to print below pattern.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

n = 5

for i in range(n+1):

  for j  in range(i):

    print('\*',end='')

  print()

Q97. Write a python program to print below pattern.

\*

\*\*

\*\*\*

\*\*\*\*

 # number of rows

rows = 4

k = 2 \* rows - 2

for i in range(0, rows):

    # process each column

    for j in range(0, k):

        # print space in pyramid

        print(end=" ")

    k = k - 2

    for j in range(0, i + 1):

        # display star

        print("\* ", end="")

    print("")

Q98. Write a python program to print below pattern.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

n = 5

m = (2 \* n) - 2

for i in range(0, n):

    for j in range(0, m):

        print(end=" ")

    m = m - 1  # decrementing m after each loop

    for j in range(0, i + 1):

        # printing full Triangle pyramid using stars

        print("\* ", end=' ')

    print(" ")

Q99. Write a python program to print below pattern.

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

n = 5

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

  for j in range(1,i+1):

    print(j,end=' ')

  print('')

Q100. Write a python program to print below pattern.

A

B B

C C C

D D D D

E E E E E

def pattern(n):

    x = 65

    for i in range(0, n):

        ch = chr(x)# IT TAKES THE ASCII VLAUES

        x += 1

        for j in range(0, i + 1):

            print(ch, end=" ")

        print("\r")

pattern(5)