## Assignment Part-1

Q1. Why do we call Python as a general purpose and high-level programming language?

Ans. Simple to use with Simple Syntax. Doesn’t require to understand the details of the computer to develop the program efficiently.

Q2. Why is Python called a dynamically typed language?

Ans. We don't have to declare the type of a variable or manage the memory while assigning a value to a variable in Python

Q3. List some pros and cons of Python programming language?

Ans. Pros

Language Simplicity

Write less and get more functionality

Cons.

Uses Excessive Memory

Will not Release Memory until it finished execution

Q4. In what all domains can we use Python?

Ans. Web Applications

Q5. What are variable and how can we declare them?

Ans. A variable is used to represent an unknown character.

* A variable name must start with a letter or the underscore character.
* A variable name cannot start with a number.
* A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ ).
* Variable names are case-sensitive (name, Name and NAME are three different variables).
* The reserved words(keywords) cannot be used naming the variable.

Q6. How can we take an input from the user in Python?

Ans. By using input()

Q7. What is the default datatype of the value that has been taken as an input using input() function?

Ans. String

Q8. What is type casting?

Ans. Changing type of the variable

Q9. Can we take more than one input from the user using single input() function? If yes, how? If no, why?

Ans. No

Q10. What are keywords?

Ans. Which are predefined words having some functionality. Ex. And, or, for, break, etc

Q11. Can we use keywords as a variable? Support your answer with reason.

Ans. No

Q12. What is indentation? What's the use of indentation in Python?

Q13. How can we throw some output in Python?

Ans. Using print(“ ”)

Q14. What are operators in Python?

Ans. And. Or, !

Q15. What is difference between / and // operators?

Ans. / ->division gives float value

//-> division Gives smallest Integer Value

Q16. Write a code that gives following as an output.

iNeuroniNeuroniNeuroniNeuron

name="iNeuron"

print(name\*4)

Q17. Write a code to take a number as an input from the user and check if the number is odd or even.

number=int(input("Enter a number to check odd/even: "))

if(number%2==0):

    print("Even")

else:

    print("odd")

Q18. What are boolean operator?

Ans. True, False. Which tells the condition is true or not.

Q19. What will the output of the following?

```

1 or 0 -🡪1

0 and 0 🡪0

True and False and True 🡪 False

1 or 0 or 0 -🡪1

```

Q20. What are conditional statements in Python?

Ans. If -else, While

Q21. What is use of 'if', 'elif' and 'else' keywords?

Ans: if-Else-> Used if there are 2 conditions.

Elif-> used if there are multiple conditions

Q22. Write a code to take the age of person as an input and if age >= 18 display "I can vote". If age is < 18 display "I can't vote".

age = input("Enter Age")

if int(age)>=18:

    print("I Can Vote")

else:

    print("I Can't Vote")

Q23. Write a code that displays the sum of all the even numbers from the given list.

numbers = [12, 75, 150, 180, 145, 525, 50]

Ans.

import functools

numbers = [12, 75, 150, 180, 145, 525, 50]

even\_exp=lambda x : x%2==0

even\_list = list(filter(even\_exp,numbers))

print(even\_list)

add=lambda x,y:x+y

print(functools.reduce(add,even\_list))

Q24. Write a code to take 3 numbers as an input from the user and display the greatest no as output.

num1=int(input("Enter Ist Number"))

num2=int(input("Enter 2nd Number"))

num3=int(input("Enter 3rd number"))

if (num1>=num2 and num1>=num3) :

        print(num1, " is Greater")

elif (num2>=num1 and num2>=num3):

      print(num2, "is greater")

else:

     print(num3, " is greater")

(or)

if (num1>=num2 and num1>=num3) :

        print(num1, " is Greater")

elif num2>=num3:

    print(num2, "is greater")

else:

     print(num3, " is greater")

Q25. Write a program to display only those numbers from a list that satisfy the following conditions

- The number must be divisible by five

- If the number is greater than 150, then skip it and move to the next number

- If the number is greater than 500, then stop the loop

```

numbers = [12, 75, 150, 180, 145, 525, 50]

Ans:

numbers = [12, 75, 150, 180, 145, 525, 50]

x=[]

for i in numbers:

    if i%5==0:

        if i>500:

            break

            if i > 150:

                continue

        x.append(i)

print(x)

```Q26. What is a String and how can we define it in python?

|  |  |
| --- | --- |
|  | Q27. How can we access the string using its index? |
|  |  |
|  | Q28. Write a code to get the desired output of the following |
|  | string = "Big Data iNeuron" |
|  | desired\_output = "iNeuron"  Ans. |
|  |  |
|  | ``` string = "Big Data iNeuron"  print(string[9:16]) |
|  |  |
|  | Q29. Write a code to get the desired output of the following |
|  |  |
|  | string = "Big Data iNeuron" |
|  | desired\_output = "norueNi"  Ans. |
|  | string = "Big Data iNeuron"  print(string[-1: -8:-1]) |
|  |  |
|  | Q30. Resverse the string given in the above question.  Ans.  string = "Big Data iNeuron"  print(string[-1: :-1]) |
|  |  |
|  | Q31. How can you delete entire string at once? |
|  |  |
|  | Q32. What is escape sequence? |
|  |  |
|  | Q33. How can you print the below string? |
|  | ``` |
|  | 'iNeuron's Big Data Course' |
|  | Ans.  print("'iNeuron's Big Data Course'") |
|  |  |
|  | Q34. What is a list in Python?  Ans. A list is a collection of heterogenous data. |
|  |  |
|  | Q35. How can you create a list in Python?  Ans. X=[] |
|  |  |
|  | Q36. How can we access the elements in a list?  Ans.By using Index  X[0], x[5], etc |
|  |  |
|  | 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]) |
|  |  |
|  | Q38. Take a list as an input from the user and find the length of the list. |
|  | Ans.  lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]  print(len(lst)) |
|  | 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[3]="Big"  print(lst) |
|  |  |
|  | Q40. What is a tuple? How is it different from list?  Ans. Tuples are ordered, indexed collections of data. Similar to string indices, the first value in the tuple will have the index [0], the second value [1], and so on. Tuple is immutable whereas lists are mutable |
|  |  |
|  | Q41. How can you create a tuple in Python?  Ans. We use (). Example. N=(1,2) |
|  |  |
|  | Q42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.  We can’t add anything in tuple since it is immutable. |
|  |  |
|  | Q43. Can two tuple be appended. If yes, write a code for it. If not, why?  Ans.  n=(1,2)  k=(3,4)  print(n+k) |
|  |  |
|  | Q44. Take a tuple as an input and print the count of elements in it.  Ans.  n=(1,2,3,5,4,3,9)  print(len(n)) |
|  |  |
|  | Q45. What are sets in Python?  Ans. Which are Mutable and have no duplicates and is an unordered collection. |
|  |  |
|  | Q46. How can you create a set?  Ans. Using curly braces {} |
|  |  |
|  | Q47. Create a set and add "iNeuron" in your set. |
|  |  |
|  | Q48. Try to add multiple values using add() function. |
|  |  |
|  | Q49. How is update() different from add()? |
|  |  |
|  | Q50. What is clear() in sets? |
|  |  |
|  | Q51. What is frozen set? |
|  |  |
|  | Q52. How is frozen set different from set? |
|  |  |
|  | Q53. What is union() in sets? Explain via code.  Ans. Gives all values removing duplicates in both sets  n={1,2,3,4,4,4,4,5,5,5}  k={4,5,8,9,1,6,7,8,}  print(n|k) |
|  |  |
|  | Q54. What is intersection() in sets? Explain via code.  Ans. Gives Common values in both sets  n={1,2,3,4,4,4,4,5,5,5}  k={4,5,8,9,1,6,7,8,}  print(n & k) |
|  |  |
|  | Q55. What is dictionary in Python? |
|  |  |
|  | Q56. How is dictionary different from all other data structures. |
|  |  |
|  | Q57. How can we delare a dictionary in Python? |
|  |  |
|  | Q58. What will the output of the following? |
|  | ``` |
|  | var = {} |
|  | print(type(var)) |
|  | Ans.  <class 'dict'> |
|  |  |
|  | Q59. How can we add an element in a dictionary? |
|  |  |
|  | Q60. Create a dictionary and access all the values in that dictionary. |
|  |  |
|  | Q61. Create a nested dictionary and access all the element in the inner dictionary. |
|  |  |
|  | Q62. What is the use of get() function? |
|  |  |
|  | Q63. What is the use of items() function? |
|  |  |
|  | Q64. What is the use of pop() function? |
|  |  |
|  | Q65. What is the use of popitems() function? |
|  |  |
|  | Q66. What is the use of keys() function? |
|  |  |
|  | Q67. What is the use of values() function? |
|  |  |
|  | Q68. What are loops in Python?  Ans. A loop allows us to execute a statement or group of statements multiple times. For loop and while loop |
|  |  |
|  | Q69. How many types of loop are there in Python?  Ans. For loop and while loop |
|  |  |
|  | Q70. What is the difference between for and while loops?  Ans. If we know the range use for loop or else use while loop |
|  |  |
|  | Q71. What is the use of continue statement? |
|  | Ans. Ends the current iteration |
|  | Q72. What is the use of break statement?  Ans. Exits from the loop |
|  |  |
|  | Q73. What is the use of pass statement?  Ans. If we don’t need code then we use pass so that the program can pass the execution |
|  |  |
|  | Q74. What is the use of range() function? |
|  |  |
|  | Q75. How can you loop over a dictionary? |
|  |  |
|  |  |
|  | ### Coding problems |
|  | Q76. Write a Python program to find the factorial of a given number. |
|  | Ans.  num = int(input("Enter a Number to do FActorial: "))  def factorial(k):      x=1      if k==0 or k==1:           return x      for i in range(1,k+1):           x=x\*i      return x  print(factorial(num)) |
|  | Q77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (P\*R\*T)/100  p=int(input("Enter the principle Amount: "))  t=int(input("Enter number of years: "))  r=int(input("Enter Rate of interest: "))  def SI(p,t,r):      sim\_int = p\*t\*r/100      return sim\_int  print(SI(p,t,r)) |
|  | Q78. Write a Python program to calculate the compound interest. Formula of compound interest is A = P(1+ R/100)^t.  Ans.  p=int(input("Enter the principle Amount: "))  t=int(input("Enter number of years: "))  r=int(input("Enter Rate of interest: "))  def CI(x,y,z):      Amount = x\*(1+(z/100))\*\*y      return Amount  print("Total Amount after 10 years= ",CI(p,t,r))  print("Compound Interest: ", CI(p,t,r)-p) |
|  |  |
|  | Q79. Write a Python program to check if a number is prime or not.  Ans.  num=int(input("Enter a number to know prime or not: "))  k=0  for i in range(1,num+1):          if num%i==0:              k=k+1  if k==2:      print(num, " is prime")  else:      print(num, " is not prime") |
|  |  |
|  | Q80. Write a Python program to check Armstrong Number.  Ans.  num=int(input("Enter number to check Armstrong: "))  def Armstrong(k):      temp=0      n=str(k) #to know the number of digits      z=len(n)      while k>0:          i=k%10          temp=temp+i\*\*z          k=int(k/10)      return temp  num1=Armstrong(num)  if num1==num:      print(num, "is Armstrong")  else:      print(num, "is not Armstrong") |
|  |  |
|  | Q81. Write a Python program to find the n-th Fibonacci Number.  num=int(input("Enter the range of Fibonacci series: "))  a,b=0,1  ls=[0,1]  for i in range(3,num+1):      temp=a+b      ls.append(temp)      a=b      b=temp  print("Fibonacci Series is: " ,ls)  print(num, "th fibonacci number is: ", ls[num-1]) |
|  |  |
|  | Q82. Write a Python program to interchange the first and last element in a list.  ls=[0,1,2,3,4,5,6,7]  print("before intercange: ",ls)  temp=ls[0]  ls[0]=ls[-1]  ls[-1]=temp  print("After intercange: ",ls) |
|  |  |
|  | Q83. Write a Python program to swap two elements in a list.  Ans.  ls=[0,1,2,3,4,5,6,7,8,9]  index1=int(input("Enter the index1 to swap: "))  index2=int(input("Enter the index2 to swap: "))  print("list before Swap: ", ls)  def swap(x,y,ls):      temp=ls[x]      ls[x]=ls[y]      ls[y]=temp      print("List After Swap: ",ls)  swap(index1,index2,ls) |
|  |  |
|  | Q84. Write a Python program to find N largest element from a list.  ls=[0,1,2,3,4,5,12,7,8,9]  print(max(ls)) |
|  |  |
|  | Q85. Write a Python program to find cumulative sum of a list. |
|  |  |
|  | Q86. Write a Python program to check if a string is palindrome or not.  Ans.  string=input("Enter a string to check palindrome or not: ")  string1=string[-1: :-1]  if string==string1:      print("Palindrome")  else:      print("not palindrome") |
|  |  |
|  | Q87. Write a Python program to remove i'th element from a string.  Ans.  string=input("Enter a string:  ")  key=int(input("Enter the ith index of string to delete: "))  s1=string[0:key]  s2=string[key+1:len(string)]  print(s1+s2) |
|  |  |
|  | Q88. Write a Python program to check if a substring is present in a given string. |
|  |  |
|  | Q89. Write a Python program to find words which are greater than given length k. |
|  |  |
|  | Q90. Write a Python program to extract unquire dictionary values. |
|  |  |
|  | Q91. Write a Python program to merge two dictionary. |
|  |  |
|  | 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}  Ans.  Input = [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]  dict={}  for i in Input:      dict[i[0]]=i[1]  print(dict) |
|  | ``` |
|  |  |
|  | 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)] |
|  | Ans.  list = [9, 5, 6]  list1=[]  for i in list:      x=i\*\*3      list1.append((i,x))  print(list1) |
|  |  |
|  | 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)] |
|  | Ans.  test\_tuple1 = (7, 2)  l1=len(test\_tuple1)  test\_tuple2 = (7, 8)  l2=len(test\_tuple2)  list=[]  for i in range(l1):      for j in range(l2):          list.append((test\_tuple1[i],test\_tuple2[j]))  for i in range(l1):      for j in range(l2):          list.append((test\_tuple2[i],test\_tuple1[j]))  print(list) |
|  |  |
|  | 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)] |
|  | Ans.  Input=[('for', 24), ('Geeks', 8), ('Geeks', 30)]  n=len(Input)  for i in range(n):      for j in range(n-1):          if Input[j][1]>Input[j+1][1]:              temp=Input[j]              Input[j]=Input[j+1]              Input[j+1]=temp  print(Input) |
|  |  |
|  | Q96. Write a python program to print below pattern. |
|  | ``` |
|  | \* |
|  | \* \* |
|  | \* \* \* |
|  | \* \* \* \* |
|  | \* \* \* \* \* |
|  | Ans.  num=int(input("Enter the pattern Range: "))  for i in range(num+1):      for j in range(i):          print('\*',end=" ")      print() |
|  | Q97. Write a python program to print below pattern. |
|  | ``` |
|  | \* |
|  | \*\* |
|  | \*\*\* |
|  | \*\*\*\* |
|  | \*\*\*\*\* |
|  | ```  Ans:  num=int(input("Enter the pattern Range: "))  for i in range(num+1):      for k in range(num-i):          print(" ", end=" ")      for j in range(i):          print("\*",end=" ")      print() |
|  |  |
|  | Q98. Write a python program to print below pattern. |
|  | ``` |
|  | \* |
|  | \* \* |
|  | \* \* \* |
|  | \* \* \* \* |
|  | \* \* \* \* \*  Ans:  num=int(input("Enter the pattern Range: "))  for i in range(num+1):      for k in range(num-i):          print(" ", end="")      for j in range(i):          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 |
|  | Ans.  num=int(input("Enter the pattern Range: "))  for i in range(num+1):      for j in range(i):          print(j+1,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 |
|  | Ans  list=['A','B','C','D','E','F','G','H','I','J','K','L','M','N','O','P','Q','R','S','T','U','V','W','X','Y','Z']  n=len(list)  x=input("Enter an alphabet in Caps: ")  for k in range(n):      if list[k]==x:          break  for i in range(0,k+1):      for j in range(0,i+1):          print(list[i],end=" ")      print() |