PYTHON ASSIGNMENT 1

Q-1. What will be the output of the following code snippets? Explain.

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

Ans. The output will be [1,3,5,7,9] because the when we using giving the 2 at the last which states the jump of the indices in the last , on the other hand at a[0:9:1] here 0 is the starting index 9 is the ending index and 1 is the jump for the same. If we cant mention anything the by default it take starting index to ending index.

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ii) def f(value, values):
           v = 1
           values[0] = 44
       t = 3
       v = [1, 2, 3]
       f(t, v)
       print(t, v[0])

Ans. Code execution is starting from the t=3 then read the list after this the function f is called with passing the parameters t= 3 and the list v=[1,2,3] then the control goes to the function f , f changes the value of the list at 0th index with 44 but not the t because the variable value is not changed by the function f in place of this f creating the variable v which doesn't effect the value of t then through print statement the value of t=3 and the 0th index which is changed by function f is printed which is 44 so output will be: 3 44.

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iii) data = [[[1, 2], [3, 4]], [[5, 6], [7, 8]]]
           def fun(m):
                   v = m[0][0]
                   for row in m:
                   for element in row:
                           if v < element:
                                   v = element
           return v

       print(fun(data[0]))

Ans: In this , print(fun(data[0])) pass the value of [[1,2],[3,4]] as m, then the value of v is initialize by data[0][0][0] i.e m[0][0] which is 1, now the first loop is iterating through [1,2] as 0th index and [3,4] as 1th index. Then the element is being assigned as 1,2,3,4 in the second loop then the if condition check weather the value of v is less then element if yes its value is updated by element , hence the largest value is 4 upto which the loop is running so this function will return v=4, so the output will be 4.

Q -2. Write a program in Python to delete first element from a list.

Ans

    a=[1,2,3,4,5,6,7,8]

    a.pop(1)   // it will delete the 2 cause 2 is at index 1.

    print(a)   //output   [1,3,4,5,6,7,8]

Q-3. Write a program to accept three numbers from the user and insert it at the end of given Tuple T1.

T1 = (23, 32, 4, 5, 2, 12, 23, 7, 9, 10, 23)

Ans.   T1= (23, 32, 4, 5, 2, 12, 23, 7, 9, 10, 23)

    a=input();

    b=input();

    c=input();

    T1+=(a,b,c)

    print(T1)

Q-4.   How to remove all items at once from dictionary ?

Ans.   we can use following method : -

    a=[1,2,3,4,5,6,7]

    del a[:]

    print(a)   // output   []

Q-5. Write a Python script to sort (ascending and descending) a dictionary by value.

Ans.   import operator

d={1:5,2:6,3:7,4:8}

Asc_order=dict(sorted(d.items(), key=operator.itemgetter(1)))

print(Asc_order)

Dsc_order=dict(sorted(d.items(), key=operator.itemgetter(1)),reverse=True)

print(Dsc_order)

Q-6. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys.

Ans.

D=dict()

for i in range(1,16):

D[i]=i**2

print(D)

Q-7.Write a program to find the sum of the digits of a number accepted from user.

Ans.   a=int(input())

Sum=0;

While a!=0:

Sum=Sum+(a%10);

a=int(a/10);

print(Sum);

Q-8. Write a Python program to construct the following pattern, using a nested for loop.

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* * * *
* * * * *
* * * *
* * *
* *
*
```

Ans.   a=5;

for i in range(0,a):

    for j in range(0,i+1):

        print("*",end=' ')

    print(" ")

for i in range(a+1,0,-1):

    for j in range(1,i-1):

        print("*",end=' ')

    print(" ")

Q-9. Write a program to read first 10 characters from a file named "data.txt"

Ans.   file=open("data.txt",'r');

Data=file.read(10)

print(Data)

Q-10.Write a program in python to display number of lines in a file("data.txt").

Ans.   file=open("data.txt",'r');

Data=file.readlines()

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print(len(Data))
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Q-11.Write a program to convert these json files to a csv file. Content of the files is given below. Create a single csv that should contain data from the json files.

file1.json
{"ID":{"0":90,"1":56,"2":34,"3":96,"4":45},"Name":{"0":"Akash","1":"Chalsea","2":"Divya","3":"Sajal","4":"Shubham"},"Marks":{"0":81,"1":87,"2":100,"3":89,"4":78},"Grade":{"0":"B","1":"B","2":"A","3":"B","4":"C"}}

file 2.json
{"ID":{"0":23,"1":43,"2":12,"3":13,"4":67,"5":89},"Name":{"0":"Ram","1":"Deep","2":"Yash","3":"Aman","4":"Arjun","5":"Aditya"},"Marks":{"0":89,"1":97,"2":45,"3":78,"4":56,"5":76},"Grade":{"0":"B","1":"A","2":"F","3":"C","4":"E","5":"C"}}

Ans.

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import pandas as ps

a=ps.read_json("file1.json")

b=ps.read_json("file2.json")

df= ps.concat([a,b])

df.to_csv("Unique_combined_file.csv",index=False)
```