Srajit Deva – Pure Storage

OJT - Python Excersice - Paper2

1. Write a program to reverse a number without using any inbuit function.

2. Given a list of first 10 natural numbers, write a program to find the square of all even numbers and cube of all odd numbers and store them in another list

3. Given a tuple (“Msys”, “Technologies”, “2007”), add “Python” at the end of this tuple and the output should also be in the form of tuple. Make a note that tuples are immutable in nature so you need to find some idea to make modification and print the updated tuple.

4. In the dictionary {‘India’:’New Delhi’, ‘USA’:’Washington D.C.’, ‘Nepal’:’Kathmandu’} list out all the keys in a list named as ‘list_keys’ and list out all the values in a list named as ‘list_values’. Also find out the value of key ‘Australia’ in the list and as it is not existing in the list print ‘NA’ as its value.

5. Given a dictionary {‘Msys Technologies’:’Sanjay Sehgal’, ‘Infosys’:’Salil Parekh’, ‘TCS’:’Rajesh Gopinathan’, ‘Wipro’:’Thierry Delaporte’} make a list of all the values associated with keys in alphabetically sorted order.

6. Write a program to extract the words starting with lowercase letter present in the list. [‘Nissan’, ‘maruti’, ‘hyundai’, ‘Volkswagen’, ‘audi’]

7. Write a program using dictionary comprehension which will contain the key value pair of i:i**2. Value of ‘i’ will start from 1 and will go upto 10.

8. Take the input marks from user using input() function and find out the grade of the students. Note the grading will be in this manner – (100 – 91) – A1, (90-81) – A2, (80-71) – B1, (70-61) – B2, (60-51) – C1 (50-40) – C2 and less than 40 students will ‘Fail’. Also make sure user should input the marks in the range 0<=marks<=100, if user will input some other marks in should print invalid marks.

9. Given a list [1,2,1,5,9,10,2,2,7,5,3,10,8,9,15,17,21,16,17,90] find the difference between the length of the list and the count of unique elements in the list.

10. In the given String -- ‘MsYs TecHNOlogiEs iS a gREat place To woRk’ find the count of lowercase and uppercase letters.

11. Write a python function with name **reverse_vowel** that takes one string as an argument and reverse the order of vowels present in the string. The function should return the string having reversed order of vowels. For example – If the input string which is given as argument is ‘Hello’ then the output string should be ‘Holle’. You need to reverse the vowel irrespective of lowercase or uppercase.

12. Write a method **number_of_prime_numbers()** which takes two input arguments **num1** and **num2** and should return the total number of prime numbers in the range. The numbers **num1** and **num2** are inclusive of the range. Also add all the numbers in an empty list and return the sum of the list. So finally your function will return two things, first will be the count of prime numbers and the other will be the sum of all the prime numbers in the given range.

13. Write a lambda function which takes two input arguments **x** and **y**. If x is greater than y then it should return square of y and if y is greater than x, then it should return square of x.

14. Given two lists --

list_1 = [‘Msys’, ‘Tata’, ‘Wells’, ‘Mobinius’]

list_2 = [‘Technologies’, ‘Power’, ‘Fargo’, ‘Technologies’]

Write a python code using **map** and **lambda** function which will create the list named as **my_list** consisting of the combination of first name and second name from list_1 and list_2 respectively.

15. Given a list --

list_1 = [10, 12, 15, 67, 95, 45, 43, 89, 91, 80, 75, 78, 94, 100]

use the **filter()** function to find the list of numbers that are multiple of either 2 or 5.

16. Write a function which will take a string argument and reverse the words in the string. For example – Input string -- “Hello World”. Output should be “olleH dlroW”.

17. Write a program to replace duplicate adjacent alphabets from given string with ‘_’.
For Example -- input given string : **'abcdaa hssbbye'** and output : **‘abcda_ hs_b_ye’**

18. Print the below rohmbus pattern according to the given number

for eg: given number is 4 then
o/p will be

```
   1
  212
 32123
4321234
 32123
  212
   1
```

19. Write a function which takes input string from the user as argument and the character also taken by the user as the argument and remove all the occurences of that character from the string. Also if the given character is not present in the string your function should raise the exception stating that “Given character is not present in the string. Please try with a new one”.

20. You are given a string having alphabets,digits,special characters. Write three different functions to extract the digits[should be in sorted order], special character & vowels[should be in reverse] from the given string.

i/p string : "abcd123bye09@8"
o/p: digits - 012389
special character - @
vowels - ea

21. You are given a string and width. Your task is to wrap the string into paragraph of width in reverse order. Blank spaces should be ignored.

for eg: i/p - first line contains a string with blank spaces - Hello, welcome to this organisation.

the second line conatins the width - 4

o/p

lleH
ew,o
mocl
tote
osih
nagr
tasi
.noi

22. Find the **palindrome words** with the count value from the given string.Output should be in form of dict. key will be palidrome word and value will be number of occurence.

i/p given a string - Nittin & his mom went to a park last friday. His Mom observed that the weather was too cool. Nittin also met his sis. If we reverse the number 1331 then we also get 1331.

o/p - {'nittin': 2, 'mom': 2, 'sis': 1, '1331': 2}

23. create 2 dictionaries as follows:
dict1 = {'name': 'Msys', 'Place': 'Pune'}
dict2 = {'EmpID': 0001, 'Salary': 50000}
Perform following operations:
a. create single dictionary by merging dict1 & dict2
b. update the salary to 10%
c. update age to 35
d. extract & print all the values & keys separetly in tuple.
e. delete the element with key 'Age' & print the dictionary elements.

24. You have given a string str1 = "abcbaefabcabchijkl"
your task is to find the combination of given word without repetition, present in the string , given word 'abc'
o/p = 7
explaination :
abc, cba,
cba,
bca, acb
cab, bac

25. Given an Integer n, count the total number of times 1 is appearing in all non-negative integers less than or equal to n.
Ex – **n = 13, output should be 6**
method – 1 is coming 6 times starting from number 0 till 13 in ‘1’, ‘10’, ‘11’, ‘12’, ‘13’. Also note 1 is coming 2 times in 11. That is why 6 is the output

26. Design a binary tree structure in python/any preferred language in such a way that it is in the form of a triangle and built on AND logic. Initially it looks like the below structure.

L6 1
L5 1 1
L4 1 1 1
L3 1 1 1 1
L2 1 1 1 1 1
L1 1 1 1 1 1 1

If any value at L1 level is updated then the whole tree should get updated accordingly. For example, if third value at L1 level is updated to 0 then the tree should get updated as below.

L6 0
L5 0 0
L4 0 0 0
L3 0 0 0 1
L2 1 0 0 1 1
L1 1 1 0 1 1 1

27. Need to find minimum number of new chair purchase for work area with simulated set of array values.

C - A new employee comes to work area and new chair need to purchase
R - Employee from work area goes to meeting room and free up the chair
U - Employee comes from meeting room and occupy the chair
L - Leaves the work area and free up the chair

Input :
n = 3
simulated value : ['CCRLU', 'CRLCUC', 'CCCC']

Output:
2
2
4

28. Given a string `s` and an integer `k`, reverse the first `k` characters for every `2k` characters counting from the start of the string.
If there are fewer than `k` characters left, reverse all of them. If there are less than `2k` but greater than or equal to `k` characters, then reverse the first `k` characters and leave the other as original.

```
Input: s = "abcdefg", k = 2
Output: "bacdfeg"
```

```
Input: s = "abcd", k = 2
Output: "bacd"
```

29. Write an automation script using seleniumn which should choose the desired product from any e-commerce site such as flipkart or amazon add it to the cart (make sure you should also login using the automation script) and then redirect you to the payment page. As payment will require to get

OTP info and bank details, you can stop your work till the payment page. If you really want to explore more then you can explore how you can automate the payment procedure too.

Also please try to do this usecase for the automation --
1) log in to Flipkart and search for dell laptop in Search.
2) On the left side, choose the processor as Core i5.
3) Fetch the laptop details and print the output like Name, model, price, RAM, etc.

30. Write an automation script which should automate marking the attendence in Keka portal. Try to automate the marking for your username. This may require you to do extensive research as Keka login is under company. So please do not restrict your exploration.