**Note: Each code should have exception handling and logging for additional bonus once assessment is done push the code in github repo under foldername as “Assessment”.**

1. Write a program to raise a RunTimeError Exception

2.Write a program to demonstrate printing pattern of alphabets

A

B C

D E F

G H I J

K L M N O

3.Write a program to Sort a List of Tuples in Increasing Order by the Last Element in Each Tuple

4.Write a program to Find the Sum of Digits in a Number

5.Write a Python program to find a missing number from a list

Input : [1,2,3,4,6,7,8]

Output : 5

6. Assuming that we have some email addresses in the "username@companyname.com" format, please write program to print the user name of a given email address. Both user names and company names are composed of letters only.

7.Write a program to display an user-defined Exception

8.Write a program to overload + operator.

9.Write a PYTHON program to check the validity of a password chosen by a user.

To be considered valid, a password

a) contains at least 1 letter between [A-Z],

b) contains at least 1 letter between [a-z],

c) contains at least 1 number between [0-9],

d) contains at least 1 special character from [$#@],

e) has a minimum length of 6 characters, and

f) has a maximum length of 12 characters.

Your program will consist of two user-defined functions: validate(s) and main(). The validate() function implements the validation procedure described above. The parameter (or input) to the function is a string s. If s fits the above criteria, print valid. Otherwise, print not valid.

10.Write a program to accept Date & Time in IST format and convert it to US format(EST).

11.Write a Python program to find whether it contains an additive sequence or not.

The additive sequence is a sequence of numbers where the sum of the first two numbers is equal to the third one.

Sample additive sequence: 6, 6, 12, 18, 30

In the above sequence 6 + 6 =12, 6 + 12 = 18, 12 + 18 = 30....

Also, you can split a number into one or more digits to create an additive sequence.

Sample additive sequence: 66121830

In the above sequence 6 + 6 =12, 6 + 12 = 18, 12 + 18 = 30....

Note : Numbers in the additive sequence cannot have leading zeros.

12.Take question 11 and implement logging on it and logging statement has to be meaningful and should include entire details for easy tracking.

13.Write a Python program where you take any positive integer n, if n is even, divide it by 2 to get n / 2. If n is odd, multiply it by 3 and add 1 to obtain 3n + 1. Repeat the process until you reach 1.

Example :

For instance, starting with n = 12, one gets the sequence 12, 6, 3, 10, 5, 16, 8, 4, 2, 1.

n = 19, for example, takes longer to reach 1: 19, 58, 29, 88, 44, 22, 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1.

14.Write a Python program to check if a given positive integer is a power of two

15.Write a program to Sort a List of Tuples in Increasing Order by the Last Element in Each Tuple

Example

Case 1:

Enter a list of tuples:[(2,5),(1,2),(4,4),(2,3)]

Sorted:

[(1, 2), (2, 3), (4, 4), (2, 5)]

Case 2:

Enter a list of tuples:[(23,45),(25,44),(89,40)]

Sorted:

[(89, 40), (25, 44), (23, 45)]

16.Write a Program to Count the Number of Lines in a Text File

17.Define a class named Circle which can be constructed by a radius. The Circle class has a method which can compute the area.

18.Write a Program to Append, Delete and Display Elements of a List Using Classes

19.Write a Program to Create a Class in which One Method Accepts a String from the User and Another Prints it

20.Write a program to compute the frequency of the words from the input. The output should output after sorting the key alphanumerically.

Suppose the following input is supplied to the program:

New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3.

Then, the output should be:

2:2

3.:1

3?:1

New:1

Python:5

Read:1

and:1

between:1

choosing:1

or:2

to:1

21.Write a Program to Read the Contents of a File in Reverse Order

22.Write a program that accepts a sentence and calculate the number of letters and digits.

Suppose the following input is supplied to the program:

hello world! 123

Then, the output should be:

LETTERS 10

DIGITS 3

23.Write a Program to Read a String from the User and Append it into a File

24.Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number.

Suppose the following input is supplied to the program:

34,67,55,33,12,98

Then, the output should be:

['34', '67', '55', '33', '12', '98']

('34', '67', '55', '33', '12', '98')

25.With a given integral number n, write a program to generate a dictionary that contains (i, i\*i) such that is an integral number between 1 and n (both included). and then the program should print the dictionary.

Suppose the following input is supplied to the program:

8

Then, the output should be:

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}