Training Exercise - 2

Data Structures / Sequences

1. Get me list of odd numbers between 1 to 20 without using if condition.
2. Get a list of 1 to 20 then remove elements from list to get only even elements.
3. Get a list of 1 to 8 and then 4 to 10. Get the common elements from both the list in a new list.
4. Sort a shuffled list of 10 random numbers in descending order.
5. x=(1,2,3,4,5), y=(4,5,6,7). Combine these two tuples in a single tuple ignoring the common elements.
6. Define two sets and perform all the set operations and validation operations.
7. Generate a dictionary {1:1,2:1,3:1,4:1,...,10:1} in one line using dictionary's method.
8. Print all the keys and values of a dictionary.
9. Two dictionaries {'a':1,'b':2,'c':3}, {'a':4,'d':5,'e':6}. Merge these two dictionaries.
10. How to check whether a key is existing in a dictionary or not.
11. How can we have two variables refering to a single list, set and dictionary.
12. Use all the case methods of strings.
13. How to split a string with a substring?
14. How to replace a string with a substring?
15. How to join multiple strings with a substring?
16. How to make partition of a string?
17. How to find the no of occurences of a substring?
18. Use all the validation methods used with string.
19. Convert all the data structures to other data structures.
20. Get the last element of the list, tuple and string.
21. Get last 3 elements of the list, tuple and string.
22. Get first 5 elements of list, tuple and string.
23. Get all the elements excluding first and last elements from list, tuple and string.
24. Get all the elements in a list using : operator.
25. Get last 5 elements from a list of 1 to 10 using negative indexing.
26. Get 4 elements of the list excluding last 2 elements using negative indexing.
27. Convert a list of tuple to dictionary.
28. Create a dictionary using range() as following. {'a':1, 'b':2, 'c':3, 'd':4, 'e':5....'y':25, 'z':26}. The code needs to be in one line.
29. There are two lists [1,2,3,4,5,6,7,8,9,10],[11,12,13,14,15,16,17,18,19,20]. Get a third list from these two lists as [12,14,16,18,20,22,24,26,28,30].
30. Get Square of all the elments in a list from 1 to 10 numbers.

31. There are two lists [1,2,3,4,5], [4,5,6,7] get a list from these two lists [1,2,3,6,7].
32. Create a function for string that will check whether a string is having the first letter as Capital and not anyother letter is capital.
33. Create a class Student and add member variables with False values. The variables are as listed below. Marks will have a default value blank list.
    1. Name
    2. Reg No
    3. Roll No
    4. Standard
    5. Admission Year
    6. Marks
    7. Result

    Add a constructor that will assign Name, Reg No, Roll No, Standard, Admission year. In the constructor add validation for Name to be only Alphabetic, Reg No to be alphanumeric, Roll No, Standard nad Admission year to be numeric. All abobve values will be accepted as string only.

    Add a method that will accept a dictionary for marks containing subject as key and marks as values. It will add the dictionary to the list of marks. Marks list will have multiple elements and each element will be a dictionary only. Here there should be a validation to acccept the marks which are less than or equal to 100 only. If the obtained marks are less than 40 the result willl be fail otherwise pass. In the dictionary the result can be added.

    Add another method that will generate the result. This method will check if there is any line in the marks having fail as result the result will be Fail and it will print the complete result as following.

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Name : <Student Name>

Roll No : <Roll No> Standard: <Standard>

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Subject	Total Marks	Passing Marks	Obtained Marks	Result
<Sub 1>	100	40	<obtained marks>	<result>
<Sub 1>	100	40	<obtained marks>	<result>
<Sub 1>	100	40	<obtained marks>	<result>

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TOTAL <total> <total> <total>

Result: PASS / FAIL Percentage: <percentage>