Python Assignment

Note
1. This assignment should be completed individually.
2. Do not look at solutions to this assignment or related ones on the Internet.

- **You are expected to work on this assignment by yourself.**
- **You may not consult with your classmates or anybody else about their solutions.**
- **You are also not to look at solutions to this assignment or related ones on the Internet.**
- **You are allowed to use resources on the Internet for programming (say to understand a particular command or a data structure).**

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1. Write a Python program to get the Python version you are using
2. Write a Python program to display the current date and time.
3. Write a Python program which accepts the radius of a circle from the user and compute the area.
   Sample Output :
   r = 1.1
   Area = 3.8013271108436504
4. Write a Python program which accepts the user's first and last name and print them in reverse order with a space between them.
5. Write a Python program which accepts a sequence of comma-separated numbers from user and generate a list and a tuple with those numbers.
   Sample data : 3, 5, 7, 23
   Output :
   List : ['3', ' 5', ' 7', ' 23']
   Tuple : ('3', ' 5', ' 7', ' 23')
6. Write a Python program to accept a filename from the user and print the extension of that.
   Sample filename : abc.java
   Output : java
7. Write a Python program to calculate the length of a string.
8. Write a Python program to count the number of characters (character frequency) in a string.
   Sample String : google.com'
   Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}
9. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.
   Sample String : 'restart'
   Expected Result : 'resta$t'
10. Write a Python program to remove the nth index character from a nonempty string
11. Write a Python program to change a given string to a new string where the first and last chars have been exchanged
12. Write a Python program to remove the characters which have odd index values of a given string
13. Write a Python program to count the occurrences of each word in a given sentence.
14. Write a Python script that takes input from the user and displays that input back in upper and lower cases.
15. Write a Python function to reverses a string if it's length is a multiple of 4.
16. Write a Python program to sum all the items in a list.

17. Write a Python program to multiplies all the items in a list.
18. Write a Python program to get the largest number from a list.
19. Write a Python program to get the smallest number from a list.
20. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings. Go to the editor
    Sample List : ['abc', 'xyz', 'aba', '1221']
    Expected Result : 2
21. Write a Python program to remove duplicates from a list.
22. Write a Python program to check a list is empty or not.
23. Write a Python program to clone or copy a list.
24. Write a Python program to print the numbers of a specified list after removing even numbers from it.
25. Write a Python program to shuffle and print a specified list.
26. Write a Python script to sort (ascending and descending) a dictionary by value.
27. Write a Python script to add a key to a dictionary.
    Sample Dictionary : {0: 10, 1: 20}
    Expected Result : {0: 10, 1: 20, 2: 30}
28. Write a Python script to check if a given key already exists in a dictionary.
29. Write a Python program to iterate over dictionaries using for loops.
30. Write a Python script to merge two Python dictionaries
31. Write a Python program to create a tuple
32. Write a Python program to create a tuple with different data types
33. Write a Python program to create a tuple with numbers and print one item.
34. Write a Python program to unpack a tuple in several variables.
35. Write a Python program to add an item in a tuple.
36. Write a Python program to create a set.
37. Write a Python program to iteration over sets
38. Write a Python program to add member(s) in a set.
39. Write a Python program to remove item(s) from set
40. Write a Python program to remove an item from a set if it is present in the set.
41. Write a Python program to create an array of 5 integers and display the array items. Access individual element through indexes.
42. Write a Python program to append a new item to the end of the array.
43. Write a Python program to reverse the order of the items in the array.
44. Write a Python program to get the length in bytes of one array item in the internal representation.
45. Write a Python program to get the current memory address and the length in elements of the buffer used to hold an array?s contents and also find the size of the memory buffer in bytes.
46. Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included).
47. Write a Python program to construct the following pattern, using a nested for loop.
    *
    * *
    * * *
    * * * *
    * * * * *
    * * * *
    * * *
    * *
    *
48. Write a Python program that accepts a word from the user and reverse it.
49. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.

Note : Use 'continue' statement.
Expected Output : 0 1 2 4 5
50. Write a Python function to find the Max of three numbers.
51. Write a Python function to sum all the numbers in a list. Go to the editor
Sample List : (8, 2, 3, 0, 7)
Expected Output : 20
52. Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.
53. Write a Python function to check whether a number is in a given range
54. Write a Python function that checks whether a passed string is palindrome or not.
55. Write a Python script to display the various Date Time formats
a) Current date and time
b) Current year
c) Month of year
d) Week number of the year
e) Weekday of the week
f) Day of year
g) Day of the month
h) Day of week
56. Write a Python program to determine whether a given year is a leap year.
57. Write a Python program to convert a string to datetime.
58. Write a Python program to print next 5 days starting from today.]
59. Write a Python program to get current time in milliseconds in Python
60. Write a Python class to convert an integer to a roman numeral
61. Write a Python class to convert a roman numeral to an integer
62. Write a Python class to get all possible unique subsets from a set of distinct integers.
63. Write a Python class to implement pow(x, n).
64. Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle.
65. Write a Python program to get the class name of an instance in Python.