Exercise 8(a): Control Statements: Iteration [26/09/2019]

Note:

Write each program in separate python file and also prepare a MS Word document with problem, solution and output.

Save your program files in Z:\Python\Ex8a\Prg<no>.py

1. Write a program to print your name 10 times
2. Write a program to print iterate over a string
3. Write a program to print iterate over a list
4. Write a program to print 0-9 using for loop
5. Write a program to print the series 1,2,3,4, ..,10.
6. Write a program to print 1-100
7. Write a program to print the series 2, 4, 6, .. ,20.
8. Write a program to print even nos. till 100. using for loop
9. Write a program to print odd nos. till 100. using for loop
10. Write a program to print the series 10, 9, 8, 7, ..,1.
11. Write a program to print nos. divisible by 5 betwen 1-100
12. Write a program to print nos. divisible by 2 and 3 both betwen 1-100
13. Write a program to find the sum of series 1 + 2 + 3 +â€¦ + 10
14. Write a program to find the multiplication of series 1-10
15. Write a program to Find the Sum of Natural Numbers
16. Write a program to find sum of odd numbers between 1-100
17. Write a program to find sum of all odd numbers between 1 to n.
18. Write a program to find sum of even numbers between 1-100
19. Write a program to find sum of all even numbers between 1 to n.
20. Write a program to print even no between 1-100. Also find out their sum.
21. Write a program to print odd no between 1-100. Also find out their multiplication.
22. Write a program to print table of 2
23. Write a program to print table of n
24. Write a program to print a table of n till m times

25. Write a program to print average of first n natural nos.

26. Write a program to sum the series 1/2+2/3+3/4+.....+n/n+1

27. Write a program to calculate sum of squares of numbers 1-n

28. Write a program to sum the series 1/1,2^2/2+.....n^2/n

29. Write a program to print all contents of math module using loop line by line

30. Write a program to list all built-in functions of Python using loop line by line

31. Write a program to generate Characters and their corresponding ASCII values table from 0-255.

32. Write a program to print all ASCII character with their values.

33. Write a program to print Leap Year between 2 user inputted years

34. Write a program to print and count no of Leap Year between year 0001-2019.

35. Write a program to print the nos. till 100 along with their square, cude, log value, square root and cube root.

36. Write a program to print all the numbers from m-n classifying them as even or odd.

37. Write a program to print even nos and odd nos between 1-100 as per follow

```
-----------------------------------------------------
Odd No. between1-100        Even No. between1-100
-----------------------------------------------------
1
                            2
3
                            4

-----------------------------------------------------
```

38. Write a program to generate Characters and their corresponding ASCII values table from 0-255.

39. Write a program to generate Characters and their corresponding ASCII values in decimal, binay, hexa and octal table from 0-255.

40. Write a program to Find the Factorial of a Number using loop

41. Write a program to calculate factorial of a number using while loop.

42. Write a program to print average of 10 values entered by user

43. Write a program to to print average of numbers entered by user (Hint: Use indefinite loop)

44. Write a program to ask from to the user to input password. Keep on asking for the password till the user enters the correct password.(Hint: Use while loop for indefinite iteration)

45. Write a program find the reverse of a string using a loop.

46. Write a program to print Hello World infinite times

47. Write a program to print numbers from 1 to infinity

48. Write a program to check wether an alphabet is vowel or not. Loop infinitely in case of user inputs a consonant.

49. Write a program to print all natural numbers from 1 to n. - using while loop

50. Write a program to print all natural numbers in reverse (from n to 1). - using while loop

51. Write a program to print all alphabets from a to z. - using while loop

52. Write a program to print all even numbers between 1 to 100. - using while loop

53. Write a program to print 10-1 emulating do..while of C/C++

54. Write a program to count number of digits in a number.

55. Write a program to calculate sum of digits of a number.

56. Write a program to calculate product of digits of a number.

57. Write a program to enter a number and print its reverse.

58. Write a program to check whether a number is palindrome or not.

59. Write a program to find frequency of any digit in a given integer.

60. Write a program to find frequency of all digits in a given integer.

61. Write a program to find power of a number using for loop.

62. Write a program to find all factors of a number.

63. Write a program to find HCF (GCD) of two numbers.

64. Write a program to find LCM of two numbers.

65. Write a program to check whether a number is Prime number or not.

66. Write a program to find all prime factors of a number.

67. Write a program to print all Prime numbers between 1 to n.

68. Write a program to print all Prime numbers in a range

69. Write a program to check whether a number is Armstrong number or not.

    What is Armstrong number?
    An Armstrong number is a n-digit number that is equal to the sum of the nth power of its digits. For example -
    6 = 61 = 6
    371 = 33 + 73 + 13 = 371

70. Write a program to print all Armstrong numbers between 1 to n.

71. Write a program to Find Armstrong Number in an Interval

72. Write a program to check whether a number is Perfect number or not.

    What is Perfect number?

Perfect number is a positive integer which is equal to the sum of its proper positive divisors.
For example: 6 is the first perfect number
Proper divisors of 6 are 1, 2, 3
Sum of its proper divisors = 1 + 2 + 3 = 6.
Hence 6 is a perfect number.

73. Write a program to print all Perfect numbers between 1 to n.

74. Write a program to check whether a number is Strong number or not.
What is Strong number?
Strong number is a special number whose sum of factorial of digits is equal to the original number.
For example: 145 is strong number. Since, 1! + 4! + 5! = 145

75. Write a program to print all Strong numbers between 1 to n.

76. Write a program to print Fibonacci series up to n terms.
What is Fibonacci series?
Fibonacci series is a series of numbers where the current number is the sum of previous two terms. For Example: 0, 1, 1, 2, 3, 5, 8, 13, 21, ... , (n-1th + n-2th)

77. Write a program to Print the Fibonacci sequence under n.

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break, continue, pass
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78. Write a program to print 1..10 but break the loop when it reaches to 8.

79. Write a program to print 1..10 skipping the value 6.

80. Write a program to demonstrate the use of pass.

81. Write a program to retrive only +ve nos. from a list

82. Write a program to demonstrate the use of else statement along with for loop.

83. Write a program to demonstrate the use of else statement along with while loop.

84. Write a program to calculate square root of a number. Use break and continue to control the loop

85. Write a program that prints the decimal equivalent of 1/2, 1/3.....1/10

86. Write a program that prompts users to enter numbers. The process continues untill user enters -1. Finally, the program prints the count of prime and composite nos.

Infinite Series
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87. Write a program to find the sine value of given angle in degrees by evaluating the sine series.
sin(x) = x - x^3/3! + x^5/5! - x^7/7! +.....

88. Write a program to find the cosine value of given angle in degrees by evaluating the cosine series.

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cos(x) = 1 - x^2/2! + x^4/4! - x^6/6! + ...........
```

89. Write a program to find the value of exponential series:

```
e^x  = 1 + x/1! + x^2/2! + x^3/3! + ..................
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