Note : Practice all Programs below mentioned and follow the naming convention as given example

ProblemNum_ProgramName

Example:

1. Write a program to enter two numbers and find their sum.
   Name of the File should be : **1_Sum.py**

BASIC PROBLEMS:

2. Write a program to enter two numbers and find their sum.
3. Write a program to enter two numbers and perform all arithmetic operations.
4. Write a program to enter length and breadth of a rectangle and find its perimeter.
5. Write a program to enter length and breadth of a rectangle and find its area.
6. Write a program to enter radius of a circle and find its diameter, circumference and area.
7. Write a program to enter length in centimeter and convert it into meter and kilometer.
8. Write a program to enter temperature in °Celsius and convert it into °Fahrenheit.
9. Write a program to enter temperature in Fahrenheit(°F) and convert it into Celsius(°C)
10. Write a program to convert days into years, weeks and days.
11. Write a program to find power of any number xy (x^y).
12. Write a program to enter any number and calculate its square root.
13. Write a program to enter two angles of a triangle and find the third angle.
14. Write a program to enter base and height of a triangle and find its area.
15. Write a program to calculate area of an equilateral triangle.
16. Write a program to enter marks of five subjects and calculate total, average and percentage.

IF-ELSE:

17. Write a program to input two numbers and find maximum between two.
18. Write a program to input three numbers and find maximum between three.
19. Write a program to input any number and check whether it is even or odd.
20. Write a program to input any year and check whether it is leap year or not.
21. Write a program to input any number and check whether it is negative, positive or zero.

22. Write a program to input any number and check whether it is divisible by 5 and 11 or not.
23. Write a program to count total number of notes in given amount.
24. Write a program to input any character and check whether it is alphabet or not.
25. Write a program to input any alphabet and check whether it is vowel or consonant.
26. Write a program to input any character and check whether it is alphabet, digit or special character.
27. Write a program to check whether a character is Uppercase or Lowercase alphabet.
28. Write a program to input week number and print week day name.
29. Write a program to input month number and print number of days in that month.
30. Write a program to input angles of a triangle and check whether triangle is valid or not.
31. Write a program to input all sides of a triangle and check whether triangle is valid or not.
32. Write a program to input all sides of a triangle and check whether triangle is Equilateral, Isosceles or Scalene triangle.
33. Write a program to input cost price and selling price of a product and calculate profit or loss.
34. An electric power distribution company charges its domestic customers as follows:

Consumption Units	**Rate of Charges(Rs)**
0-50	1.35 per unit
51-100	2.60 per unit
101-200	2.85 per unit
201-300	4.50 per unit
301-400	5.00 per unit
Above 400	5.75 per unit

All customers are charged a minimum of Rs.20.00

Write a program to accepts customer number and number of units consumed and prints the amount to be paid by the customer

Additional Problems:

35. Write a Python program that requests an integer value from the user. If the value is between 1 and 100 inclusive, print "OK;" otherwise, do not print anything.

36. Write a Python program that requests an integer value from the user. If the value is between 1 and 100 inclusive, print ”OK;” otherwise, print ”Out of range.”
37. Write a Python program to pay computation to give the employee 1.5 times the hourly rate for hours worked above 40 hours.

```
Enter Hours: 45
Enter Rate: 10
Pay: 475.0
```

38. Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print an error message. If the score is between 0.0 and 1.0, print a grade using the following table: Score Grade

```
>= 0.9 A
>= 0.8 B
>= 0.7 C
>= 0.6 D
< 0.6 F
Enter score: 0.95
A
Enter score: perfect
Bad score
Enter score: 10.0
Bad score
Enter score: 0.75
C
Enter score: 0.5
F
```

Run the program repeatedly as shown above to test the various different values for input.

39. Write a function greatest which takes the three numbers as its argument and find the greatest of three numbers
40. Write a python program that accepts an integer between 1 and 12 to represent the month number and displays the corresponding month of the year (For Example if month = 1, then display JANUARY)
41. Write the above program using dictionaries

42. Write a program that prompts users to enter a character (O,A,B,C,F). Then using if-elif-else construct display Outstanding, Very Good, Good, Average and Fail respectively
43. Write a program that determine entered character is alphabet or not
44. Write a function check_even_odd which takes the number as its argument and find given number is even or not
45. Write a function is_leap_year which takes the year as its argument and checks whether the year is a leap year or not and then displays an appropriate message on the screen
46. Write a function check_number which takes the number as its argument and find number to check for positive number, negative number or zero:
47. Write a menu driven program to add, subtract, multiply, and divide two inters using functions.
48. Function to test whether a number is a perfect square. An appropriate message is printed that depends on whether or not the number is a perfect square
49. Write a python program to find the smallest of three numbers
50. Write above same program in user defined function
51. Write a program to check entered number is completely divisible by 4 and 9
52. Write a program to input month number and print number of days in that month.
53. Write function to input month number and print number of days in that month.
54. Write a program to count total number of notes in given amount as per the Indian currency notes
55. Write a program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:
    Percentage >= 90% : Grade A
    Percentage >= 80% : Grade B
    Percentage >= 70% : Grade C
    Percentage >= 60% : Grade D
    Percentage >= 40% : Grade E
    Percentage < 40% : Grade F
56. Write a program to input basic salary of an employee and calculate its Gross salary according to following:
    Basic Salary <= 10000 : HRA = 20%, DA = 80%
    Basic Salary <= 20000 : HRA = 25%, DA = 90%
    Basic Salary > 20000 : HRA = 30%, DA = 95%
57. Write a program to input electricity unit charges and calculate total electricity bill according to the given condition:

For first 50 units Rs. 0.50/unit
For next 100 units Rs. 0.75/unit
For next 100 units Rs. 1.20/unit
For unit above 250 Rs. 1.50/unit
An additional surcharge of 20% is added to the bill

LOOPS:

Write using while and for

58. Write a program to print all natural numbers from 1 to n.
59. Write a program to print all natural numbers in reverse (from n to 1).
60. Write a program to print all alphabets from a to z.
61. Write a program to print all even numbers between 1 to 100. - using while loop
62. Write a program to print all odd number between 1 to 100.
63. Write a program to print sum of all even numbers between 1 to n.
64. Write a program to print sum of all odd numbers between 1 to n.
65. Write a program to print table of any number.
66. Write a program to enter any number and calculate sum of its digits.
67. Write a program to enter any number and calculate product of its digits.
68. Write a program to enter any number and calculate sum of all natural numbers between 1 to n.
69. Write a program to enter any number and find its first and last digit.
70. Write a program to enter any number and print its reverse.
71. Write a program to enter any number and check whether the number is palindrome or not.
72. Write a program to enter any number and print it in words.
73. Write a program to print all ASCII character with their values.
74. Write a program to find power of any number using for loop.
75. Write a program to enter any number and find the sum of first and last digit of the number.
76. Write a program to enter any number and print all factors of the number.
77. Write a program to enter any number and calculate its factorial.
78. Write a program to enter any number and check whether it is Prime number or not.
79. Write a program to enter any number and check whether it is Armstrong number or not.
80. Write a program to enter any number and check whether it is Perfect number or not.

81. Write a program to enter any number and check whether it is Strong number or not.
82. Write a program to print all Prime numbers between 1 to n.
83. Write a program to print all Armstrong numbers between 1 to n.
84. Write a program to print all Perfect numbers between 1 to n.
85. Write a program to print all Strong numbers between 1 to n.
86. Write a program to enter any number and print its prime factors.
87. Write a program to find sum of all prime numbers between 1 to n.
88. Write a program to print Fibonacci series up to n terms.
89. Star pattern programs - Write a program to print the given star patterns.
90. Write a python program to compute sum of the factorials of each digit of a given integer. Write a separate function for calculating the factorial of a number.
91. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6
92. Write a Python program that accepts a string and calculate the number of digits and letters.
93. Write a Python program to construct the following pattern, using a nested loop number

    Expected Output:

    ```
    1
    22
    333
    4444
    55555
    666666
    7777777
    88888888
    999999999
    ```

94. Write a Python program to create the multiplication table (from 1 to 10) of a number

    ```
    Input a number: 6
    6 x 1 = 6
    6 x 2 = 12
    6 x 3 = 18
    6 x 4 = 24
    6 x 5 = 30
    6 x 6 = 36
    6 x 7 = 42
    6 x 8 = 48
    6 x 9 = 54
    6 x 10 = 60
    ```