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 that requests five integer values from the user. It then prints the maximum and minimum values entered. If the user enters the values 3, 2, 5, 0, and 1, the program would indicate that 5 is the maximum and 0 is the minimum. Your program should handle ties properly; for example, if the user enters 2, 4 2, 3 and 3, the program should report 2 as the minimum and 4 as maximum.
38. Write a Python program that requests five integer values from the user. It then prints one of two things: if any of the values entered are duplicates, it prints "DUPLICATES"; otherwise, it prints "ALL UNIQUE".
39. 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
```

40. 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.

41. Write a python program to find the greatest of three numbers
42. Write a python program to find the greatest of three numbers using user defined function
43. 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)
44. Write the above program using dictionaries
45. Write a program to input two numbers and check whether they are equal or not
46. 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
47. Write a program that determine entered character is alphabet or not
48. Write a program to find a digit, uppercase, or a lowercase character was entered.
49. Write a program to check even or not
50. Python program ask from user to enter year to check whether it is a leap year or not
51. 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
52. Python program ask from user to enter any number to check for positive number, negative number or zero:
53. Python program ask from user to enter two numbers to find and print the largest one:
54. Write a menu driven program to add, subtract, multiply, and divide two inters using functions.
55. Write a program to calculate the area of a triangle using functions
56. Write a program to input angles of a triangle and check whether triangle is valid or not.
57. Write a program to input all sides of a triangle and check whether triangle is valid or not.
58. 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
59. Write a program that reads from input the lengths of the three sides of a triangle and determines the type of the triangle
60. Write a python program to find the smallest of three numbers
61. Write above same program in user defined function
62. Write a program to check entered number is completely divisible by 4 and 9
63. Write a program to input month number and print number of days in that month.

64. Write function to input month number and print number of days in that month.
65. Write a program to count total number of notes in given amount as per the Indian currency notes
66. 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
67. 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%
68. 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

69. Write a program to print all natural numbers from 1 to n.
70. Write a program to print all natural numbers in reverse (from n to 1).
71. Write a program to print all alphabets from a to z.
72. Write a program to print all even numbers between 1 to 100. - using while loop
73. Write a program to print all odd number between 1 to 100.
74. Write a program to print sum of all even numbers between 1 to n.
75. Write a program to print sum of all odd numbers between 1 to n.
76. Write a program to print table of any number.
77. Write a program to enter any number and calculate sum of its digits.
78. Write a program to enter any number and calculate product of its digits.
79. Write a program to enter any number and calculate sum of all natural numbers between 1 to n.
80. Write a program to enter any number and find its first and last digit.

81. Write a program to enter any number and print its reverse.
82. Write a program to enter any number and check whether the number is palindrome or not.
83. Write a program to enter any number and print it in words.
84. Write a program to print all ASCII character with their values.
85. Write a program to find power of any number using for loop.
86. Write a program to enter any number and find the sum of first and last digit of the number.
87. Write a program to enter any number and print all factors of the number.
88. Write a program to enter any number and calculate its factorial.
89. Write a program to enter any number and check whether it is Prime number or not.
90. Write a program to enter any number and check whether it is Armstrong number or not.
91. Write a program to enter any number and check whether it is Perfect number or not.
92. Write a program to enter any number and check whether it is Strong number or not.
93. Write a program to print all Prime numbers between 1 to n.
94. Write a program to print all Armstrong numbers between 1 to n.
95. Write a program to print all Perfect numbers between 1 to n.
96. Write a program to print all Strong numbers between 1 to n.
97. Write a program to enter any number and print its prime factors.
98. Write a program to find sum of all prime numbers between 1 to n.
99. Write a program to print Fibonacci series up to n terms.
100. Star pattern programs - Write a program to print the given star patterns.
101. 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.