1. Write a python code of a program that reads the values for the three sides x, y, and z of a triangle, and then calculates its area. The area is calculated as follows:

   $$\textbf{Area} = s\sqrt{(s-x)(s-y)(s-z)} \qquad \textbf{where } s = \frac{x+y+z}{2}$$

   ==========
   Sample Input1:
   7, 10, 5
   Sample Output1:
   53.88877434122991
   ==========
   Sample Input2:
   7, 9, 12
   Sample Output2:
   117.13240371477058
   ==========

2. Write Python code of a program that reads three sides of a triangle and check whether the triangle is valid or not.
   ==========
   Sample Input1:
   7, 10, 5
   Sample Output1:
   Valid triangle
   ==========
   Sample Input2:
   2, 2, 4
   Sample Output2:
   Not a valid triangle
   ==========
   Sample Input3:
   7, 9, 12
   Sample Output3:
   Valid triangle

3. Write Python code of a program that reads a number as a year and determines whether it is a leap year or not.
   Three conditions are used to identify leap years:
   - The year can be evenly divided by 4, is a leap year, unless
   - The year can be evenly divided by 100, it is NOT a leap year, unless:
   - The year is also evenly divisible by 400. Then it is a leap year.
     [which implies -
     if the year can be divided by 4 and NOT divided by 100, then it's a leap year.
     If the year can be divided by 4, divided by 100, and divided by 400, then it's a leap year.]

   For example, the years 2000, 2024, 2028, and 2400 are leap years, while 1800, 1900, 2100, 2200, 2300, and 2500 are NOT leap years.

Here, 2000, 2400 are divided by 4, 100, and 400. Thus leap year.
Here, 2024, 2028 are divided by 4 but not divided by 100. Thus leap year.

4. Write a Python program that reads a number and finds the sum of the series of 1 +11 + 111 + 1111 + ….+N terms.
   ==========
   Sample Input1:
   5
   Sample Output1:
   1 + 11 + 111 + 1111 + 11111
   The Sum is: 1234
   ==========
   Sample Input2:
   8
   Sample Output2:
   1 + 11 + 111 + 1111 + 11111 + 111111 + 1111111 + 11111111
   The Sum is: 12345678
   ==========

5. Write a Python program that reads a number and displays the multiplication table of the given integer.

   Sample Input: 15
   Sample Output :
   15X1=15
   15X2=30
   ...
   ...
   15X10=150

6. Write a python program that takes integer inputs from the user until the user gives "Stop".
   Print average and product of all numbers.

7. Write a Python program to count the total number of alphabets, digits, and special characters in a string. Here, space is considered as a special character.
   ==========
   Sample Input:
   Welcome to geeksforgeeks.com
   Sample Output:
   The number of Alphabets in the string is: 25
   The number of Digits in the string is : 0
   The number of Special characters in the string is : 3

8. Write a Python program to find the largest and smallest word in a string.
   Sample Input :
   It is a string with the smallest and largest word.
   Sample Output :

The largest word is “smallest” and the smallest word is 'a'.

9. Write a python program that prints alphabet pattern 'Z' of size N using * where N will be given as input.
   Sample Input1: 5
   Sample Output1:

	C1	C2	C3	C4	C5
L1	*	*	*	*	*
L2				*	
L3			*		
L4		*			
L5	*	*	*	*	*

   Sample Input2: 4
   Sample Output2:

	C1	C2	C3	C4
L1	*	*	*	*
L2			*	
L3		*		
L4	*	*	*	*

10. Write a Python program that takes two strings from the user. Then remove characters from the first string which are present in the second string. **[Avoid built-in function]**
    ==========
    Sample Input1:
    India is great
    is
    Sample Output1:
    nda great
    ==========
    Sample Input2:
    this is cSe110 course and we love it
    Sample Output2:
    ths s cse0 curse nd we e t

11. Write a Python program to Capitalize the first character of each word in a String **[You cannot use the built-in upper() function]**

    Sample Input:
    I love python programming
    Sample Output:
    I Love Python Programming
12. Write a Python program that takes a list of numbers separated by comma(“,”) as input of a List A(Without using a loop). Multiply the numbers and print the product. **[Hint: You can use split()]**
    ==========
    Sample Input1:
    1,2,3,4,5
    Sample output1:
    Product:120
    ==========
    Sample Input2:
    10,0,20,3,1
    Sample Output2:
    Product:0

13. Write a Python program that takes two lists from the user. Print both lists simultaneously such that list1 should display items in original order and list2 in reverse order.
    Sample Input:
    List1 = [10,20,30,40]
    List2 = [100,200,300,400]
    Sample Output:
    10 400
    20 30
    30 200
    40 100

14. Write a Python program to reverse strings in a given list of string values without using reverse() or reversed().
    Sample Input: ['Red','Green','Blue','White','Black']
    Sample Output: ['deR', 'neerG', 'eulB', 'etihW', 'kcalB']

15. Write a Python program that takes a list from the user. Then find **the first even** and **first odd** number in the list.
    ==========
    Sample Input1:
    [1, 3, 5, 7, 4, 1, 6, 8]
    Sample Output1:
    First even:4 and First odd:1
    ==========
    Sample Input2:

[55, 5, 7, 9, 11]

Sample Output2:

First even: not found and First odd: 55

==========

Sample Input3:

[50, 52, 6, 2, 10]

Sample Output3:

First even: 50 and First odd: not found

16. Write a Python program that takes a list A and a number as input from the user. Create a list by concatenating the input list which range goes from 1 to n.

==========

Sample input1:

A = ['p', 'q']

N = 5

Sample Output1:

['p1', 'q1', 'p2', 'q2', 'p3', 'q3', 'p4', 'q4', 'p5', 'q5']

==========

Sample input2:

A = ['p', 'q', 'r']

N = 3

Sample Output2:

['p1', 'q1', 'r1', 'p2', 'q2', 'r2', 'p3', 'q3', 'r3']

==========

Sample input3:

A = ['p', 'q', 'r','s']

N = 2

Sample Output3:

['p1', 'q1', 'r1', 's1', 'p2', 'q2', 'r2', 's2']