Assignment -1

1. Write the pseudocode & a program to input credits of a Code for Cause Campus leader and then output the badge of the lead on the basis of the following criteria:
   a. 7500 <= credits : Tera leader
   b. 6000 <= credits < 7500 : Gega leader
   c. 4500 <= credits < 6000 : Mega leader
   d. Credits < 4500 : Rising Star

2. Write the pseudocode & a program to calculate the simple interest based on the inputs(amount, rate, time) provided by the user.

3. Write the pseudocode & the program to calculate GCD of two numbers.

4. Write a program to print even numbers after odd times jump.
   E.g: 2, 6, 14, 26, …

   2 (then jump 1 even number 4) -> 6
   6 (then jump 3 even numbers 8, 10, 12) -> 14
   14 (then jump 5 even numbers 16,18,20,22,24) -> 26

5. Write a program to count the number of digits in a number.

6. Write a program to reverse a number (9735 -> 5379)

7. Write programs to print the following patterns for an input **n = 5**:

   a. *
      *   *
      *   *   *
      *   *   *   *
      *   *   *   *   *

   b. 1
      1   2
      1   2   3
      1   2   3   4
      1   2   3   4   5

c.
```
                          1
                    1     2     1
              1     2     3     2     1
        1     2     3     4     3     2     1
  1     2     3     4     5     4     3     2     1
```

d.
```
                          1
                    2     3     2
              3     4     5     4     3
        4     5     6     7     6     5     4
  5     6     7     8     9     8     7     6     5
```

e.
```
1
1     1
1     2     1
1     3     3     1
1     4     6     4     1
1     5    10    10     5     1
```

f.
```
                        *
                  *     *     *
            *     *     *     *     *
      *     *     *     *     *     *     *
*     *     *     *     *     *     *     *     *
      *     *     *     *     *     *     *
            *     *     *     *     *
                  *     *     *
                        *
```

g.
```
*                                               *
*     *                                   *     *
*     *     *                       *     *     *
*     *     *     *           *     *     *     *
*     *     *     *     *     *     *     *     *     *
*     *     *     *           *     *     *     *
*     *     *                       *     *     *
*     *                                   *     *
*                                               *
```

h.
```
*   *   *   *   *   *   *   *   *
*   *   *   *       *   *   *   *
*   *   *               *   *   *
*   *                       *   *
*                               *
*   *                       *   *
*   *   *               *   *   *
*   *   *   *       *   *   *   *
*   *   *   *   *   *   *   *   *
```

i.
```
5   5   5   5   5   5   5   5   5
5   4   4   4   4   4   4   4   5
5   4   3   3   3   3   3   4   5
5   4   3   2   2   2   3   4   5
5   4   3   2   1   2   3   4   5
5   4   3   2   2   2   3   4   5
5   4   3   3   3   3   3   4   5
5   4   4   4   4   4   4   4   5
5   5   5   5   5   5   5   5   5
```