1. Write a **C** program to check whether any year entered by the user is a leap year or not.

2. Write a **C** program to read any month number in integer and display the number of days for this month.

3. Write a **C** program that will accept two integers from the user as a base number and an exponent, and calculate the $base^{exponent}$ as result by using a **for** loop.

4. Write a **C** program to display the square of first n natural numbers and their sum.

5. Write a **C** program to print the following pattern:

    ```
    N=5     N=4    N=3   N=2
    #       #      #     #
    **      **     **    **
    ###     ###    ###
    ****    ****
    #####
    ```

    [The integer value here associated with N indicates the user input.]

6. Write a **C** program to print the following pattern like "pyramid" of digits:

    ```
        N=5         N=4        N=3    N=2
         1           1          1      1
        232         232        232    232
       34543       34543      34543
      4567654     4567654
     567898765
    ```
    [The integer value here associated with N indicates the user input.]

7. A prime number is a positive integer quantity that is evenly divisible (without a remainder) only by 1 or by itself. Write a **C** program to calculate and print the first n prime numbers.

8. Perfect number is a positive number which sum of all positive divisors excluding that number is equal to that number. For example, 6 is a perfect number since divisors of 6 are 1, 2 and 3, and sum of its divisor is 1+2+3 = 6. Write a C program to check whether any positive integer number entered by the user is perfect or not.

9. Arrays are very useful when lists of information need to be managed. Write a C program that reads the noonday temperature for each day of a month and then reports the month's average temperature, as well as its hottest and coolest days.

10. Write a C program to find the second largest element in an array.