**TP02**

**Goal:** To familiarize yourself with the creation of sub-programs in Matlab.
**Note**: Each function must be put separately in different file. Define the following function:

1. ***isPair:*** which tests if a number is even or not.

2. ***fac:*** which returns the factorial of an integer number as a parameter.

3. ***star:*** which displays an isocele triangle of stars whose height is equal to the inputted value.

4. ***isPrime:*** which tests whether an integer number is the prime number or not.

5. ***IsParfait:*** which tests if an integer number is the perfect number or not.

6. ***isPalindrome:*** which tests whether a string is palindrome or not.

7. ***summation:*** which calculates the sum of the inputted values. The number of inputted values may vary (ex. summation(2,3) → result=5; summation(3,7,4) → result=14).

8. ***avg:*** which calculates the average of the inputted values. The number of inputted values may vary (ex. avg(2,3) → result=2.5; avg(3,7,5) → result=5).

9. ***power:*** which calculates the square power of an entered argument if there is an argument; the argument1 power *argument2* ($arg1^{arg2}$) if there are two argumentss; and which displays the message "too many arguments" if there are more than two arguments.

10. Operations on matrix (without using the built-in functions in Matlab):
    a. **maxMin**: which returns the maximum and minimum value of a matrix.
    b. ***MatrixCarre:*** which allows you to calculate the square matrix of a matrix.
    c. ***Transpose***: which finds the matrix transposed from a matrix.