PW 02 : The Loops

Exercise 1:

Write a Fortran program which allows you to enter integer number **N** and :

- displays the first 10 integers from 1 to 10 and inversed (from 10 to 1) .
- displays the first 10 **odd** integers from 1 to 10 .
- calculate and display the sum of **N** integers numbers
- calculate and display the sum of **even** numbers inferior to **N** .
- calculate and display the sum of **Divided** numbers of **N** .

Exercise 2:

Write a Fortran program that allows you to enter a positive number **N** and calculate The factorial f. (**f=1*2*3*…*N**) ?

Exercise 3:

Write a Fortran program enter two numbers **x and y** and calculate the power **p**

p= x^y . witch **x** is a **real** and **y** is a positive **integer** number entered.

Example: 7^5**=7x7x7x7x7=16807.**

Exercise 4:

Write a Fortran program **PGCD** witch return the PGCD of two numbers a and b.

Example: a=24 b=36 the PGCD ??

Loop : a <b (24 < 36) →b =36-24=12 → b<a (12 < 24) →

a=24-12=12 → a=b=12 **stop** →the **PGCD = 12 .**

Exercise 5:

Write a Fortran program that calculates the solutions of an equation f,

$$f= 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots \frac{x^n}{n!}$$

which **x** is a real and **n** is an integer number.