

# NUM I 23-24: Assignment 2

Write a Fortran program that:

- 1) Contains a recursive integer function to compute the factorial of an integer input number
- 2) Uses the above function to add terms to the formula to compute an approximate value of the Euler number constant:

$$e \approx \sum_{n=0}^m \frac{1}{n!}$$

- 3) Stops the summation when the error between the Fortran intrinsic `exp(1.0)` and the computed value is less than one part per million.
- 4) Prints the final value of `m` and the resulting error.

**HINT:** Remember to build the program task by task! Test each part!

**BONUS:** What needs to be changed if requested error is one part per billion?

Send the source code to <[ggiulian@ictp.it](mailto:ggiulian@ictp.it)> by September 22<sup>nd</sup>

Only the file that contains the source code is required possibly named as: `Ass02.YourLastName.f90`