Computational Quantum Physics

Week 4

Due on Week 6

Exercise 1: **Multi-run script**

Consider the program developed in Exercise 3 of Week 1.

(a) Define the matrix dimension Nas an input value to be read from file.

(b) Write a python script that changes N between two values N_{min} and N_{max}, and launches the program. Store the results in different files depending on the multiplication method used.

(c) Plot (using gnuplot) the results for the different multiplication methods.

Exercise 2: **Automated fits**

Consider the program of the previous exercise.

(a) Fit the scaling of the time needed for different methods as a function of the input size. Consider the biggest possible difference between N_{min} and N_{max}.

(b) Save the gnuplot file you used in part (a) and exploit it to write a python script that performs automatically the previous fits.