Parallel Computing

2022/2023 1st semester

Exercise Sheet #4 2022-11-02

1. Modify program 2 of Exercises #1 in the following way. Simulate n events of rolling a pair of dice, counting the sum of the points of both dice. The system starts with $n = 1024 = 2^{10}$ events in p parallel processes, and then repeats the calculation doubling n, without loosing the results from the first run. Continue this process of doubling n and repeating the simulation successively, until the mean deviation σ between observed frequencies o_i and expected frequencies e_i is $\sigma < 10^{-3}$.

$$\sigma = \frac{1}{11}\sqrt{\sum_{i=2}^{12}(\frac{o_i - e_i}{e_i})^2}$$

Submit the codes of your program at `https://trixi.coimbra.lip.pt/cap`
until the beginning of the next lecture.