Series 3

Introduction to Computational Finance

return no later than March 17th, 2020

Intraday seasonality

Using data on the EUR/USD exchange rate (for the period of January 1st to Match 1st 2012) that you find on Moodle, and considering 15-minute wide bins, plot a histogram of the daily distribution of ticks.

Data structure:

```
timestamp bid ask
```

where `timestamp` denotes the time (in seconds) measured starting from `01 Jan 1970 00:00:00`. Comment on the obtained histogram.

You can also have a look at the weekly distribution of ticks.

Random walks

Generate a random walk and an AR(1) process seen during the course. Explain how the random walk, $x(t+1) = x(t) + \epsilon(t)$ is a particular instance of AR1 walk.

Play with the AR(1) process parameters so as to produce mean-reverting and trendy processes.

Report

Each student is expected to give back a personal work consisting of a report in PDF format presenting his/her results and answering the questions of the exercise, as well as the script used to generate the presented results. Both report and script have to be uploaded on Moodle (IFC/Serie3).