DISI – University of Trento

Master in Computer Science AA 2017/2018

Simulation and Performance Evaluation

Assignment 3

Devising a Model

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The goal is simple: Devise and solve a Markovian or Queueing model for one of the protocols you have simulated in Assignment 2. It does not need be the model for the most complex protocol you have implemented. And it does not need to be the "best" model for that protocol, or to reproduce the simulation results within 1% accuracy. What you should do is to describe why and how you "invented" that specific model, and why it is representative of the system that you simulated, and then comment the results you obtain.

The results of the model should be compared with those of the simulations and the differences explained, so if you do the two assignments together, you can also write a single report, but this is your personal choice. The solution of the model can also be a numeric one, e.g., to find the steady state probabilities of a Markov chain solving the linear system with Matlab or R, but it cannot be a Monte-Carlo integration ... that is another simulation. Iterative modeling is welcome, i.e., you first propose a very, very simple model, compare the results and then improve you model in some way.

To write your report use the LaTeX template we give you and do not write more than 4 pages. Deliver the PDF file of the report and all the code and scripts you used as a single .zip or .tar file through Classroom. DO NOT use absolute folders like

```
ds <- read.csv('/home/john.doe/Documents/spe/doe.csv')
```

but rather

```
ds <- read.csv('./doe.csv')
```

The deadline to have a correct-and-redo chance for this assignment is August 30, 2018. If you deliver the assignment within this date, we will correct it and give you the chance to refine it before the oral discussion, otherwise we will consider the work "as is" before the oral discussion is agreed upon. However, if the quality of the delivery is unacceptable (e.g., no methodology is described, plots are meaningless and not explained, etc.) we will not correct it, but simply reject it, so you lose the privilege of a pre-correction.

If you have some doubts, just write us an email or ask in class.

Have Fun!