Assignment
Simulating queueing system by SimPy

Tran, Van Hoai (hoai@hcmut.edu.vn)
Le, Hong Trang (lhtrang@hcmut.edu.vn)

Faculty of Computer Science & Engineering
HCMC University of Technology

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Main requirements

- All data, Python code must be submitted to e-learning system.
- Deadline: to be announced on e-learning system.

Requirements on inline report

- To represent all main steps required in a performance evaluation project, especially in simulation modeling (see lecture #2).
- Expert knowledge in model validation is given bonus score.
- To apply the following techniques.
  - transient removal = initial data deletion
  - terminating simulations = independent replications (điểm +)

Requirements on python code

- Parameters of the model must be given in the beginning of notebook.
- Default values for parameters should allow the simulation run correctly.

Queueing systems in assignment

1. (2sv) Queue $M/M/1/B = n$
2. (2sv) Queue $M/M/n$
3. (2sv) Queue $M/M/1/B = \infty/K = \infty/SD = LCFS$
4. (2sv) Queue $M/M/1/B = \infty/K = \infty/SD = SJF$
5. (3sv) Queue $M/M/1/B = \infty/K = \infty/SD = RR$
6. (3sv) Queue $M/M/1/B = \infty/K = \infty/SD = SRTF$
7. (3sv) A network of 3 queues $Q_1 = M/M(\mu_1)/1$, $Q_2 = M/M(\mu_2)/1$, $Q_3 = M/M(\mu_3)/1$, in which $Q_1 \to Q_2$ with $p_{12} = 0.7$; $Q_1 \to Q_3$ with $p_{13} = 0.3$; arrival process to Q_1 with λ, jobs after going through Q_2, Q_3 will leave the network.
8. (3sv) A network of 2 queues $Q_1 = M/M(\mu_1)/1$, $Q_2 = M/M(\mu_2)/1$, in which $Q_1 \to Q_1$ with $p_{11} = 0.2$, $Q_1 \to Q_2$ with $p_{12} = 0.8$; arrival process to Q_1 with λ, jobs after going through Q_2 will leave the network.