WARNING: this assignment contains 2 exercises

Performance indices of an M/G/1 queue

A server receives jobs according to a Poisson process of rate $\lambda = 3\ j/s$. The duration of each job is distributed according to an Hyper-Exponential, of rate $\mu_1 = 1\ j/s$ (prob. 0.2) and $\mu_2 = 10\ j/s$ (prob. 0.8).

Compute:

1. The utilization of the system
2. The average number of jobs in the system
3. The average response time

Approximate Performance indices of a G/G/2 queue

A dual core server receives jobs with inter-arrival time distributed according to a uniform distribution between 0.1 and 0.2. The duration of each job is distributed according to an Hyper-Exponential, of rate $\mu_1 = 1\ j/s$ (prob. 0.2) and $\mu_2 = 10\ j/s$ (prob. 0.8).
Compute:

1. The utilization of the system
2. The approximate average response time
3. The approximate average number of jobs in the system