A linear algebraic approach in analyzing the M/GE/1 and GE/M/1 queuing systems at equilibrium

ABSTRACT

Uses the algebraic approach in the queuing theory to derive the M/G/1 equilibrium solution for the number of jobs in the system when the probability distribution function representing the general distribution is the generalized exponential (GE-type). Similarly the GE/M/1 system is solved. Furthermore, it has been shown that as expected the solutions are equivalent to the maximum entropy solutions of the M/G/1 and G/M/1 systems respectively at equilibrium.