

Study of Unreliable Finite Queue with Control Policies and Service Interruptions

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ABSTRACT

The present study deals with the finite capacity queueing model with certain control policies for smooth functioning of the system. The queueing model under consideration can accommodate a maximum of K customers. The server is unreliable and may crash while servicing but it can be repaired further servicing under certain policy parameters. The investigation also involves other control policies too that rules the arrival pattern and helps in avoiding bombardment of the customers in the queue. The time-dependent analysis of the model has been done using numerical approach based on the Runge Kutta method of fourth order. Various performance measures queueing measures and reliability measures have been obtained. The analysis has been done to explore the effect of different parameters on various performance indices.

Keywords: Unreliable server, Finite capacity, control policies

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