ABSTRACT

Queuing theory is a strong foundation on modeling and analyzing complex system performance.The queue happened because the need of service exceeding its capacity.

This research is focusing on M/M/N queue that simulated with C language programming. In this queueing simulation, there are three experiment scenarios to look for the algorithm performance based on arrival pattern, average waiting time, utilization, and average number of packet in the queue parameter.The first scenario explains the arrival pattern, the second scenario explains the effect of increasing the number of servers and the third scenario explains the effect of increasing packet sizes.

This research is using randomize packet arrival pattern and exponential distribution. Based on the simulation, on the second scenario can be concluded that the increasing number of servers makes the average waiting time and average number of packet in the queue decreasing, but the utilization increasing concomitant the increasing number of servers. From the third scenario can be concluded that by increasing packet size makes the value of average wating time and utilization increasing, but the average number of packet in the queue is decreasing.

Keywords : Queueing model M/M/N, *average waiting time, utilization, average number of packet in the queue,* C.