CLOSED MODEL, the service time is Z = 10s

Visits, throughput and Demands

Let us consider an embedded system composed by a CPU, a disk and a memory bank. The disk controller can use DMA to transfer data between the memory and the disk independently from the CPU. New jobs start and finish on the CPU. The system is currently used by a fixed population of N = 10 users. It can be modelled with the following queuing network:
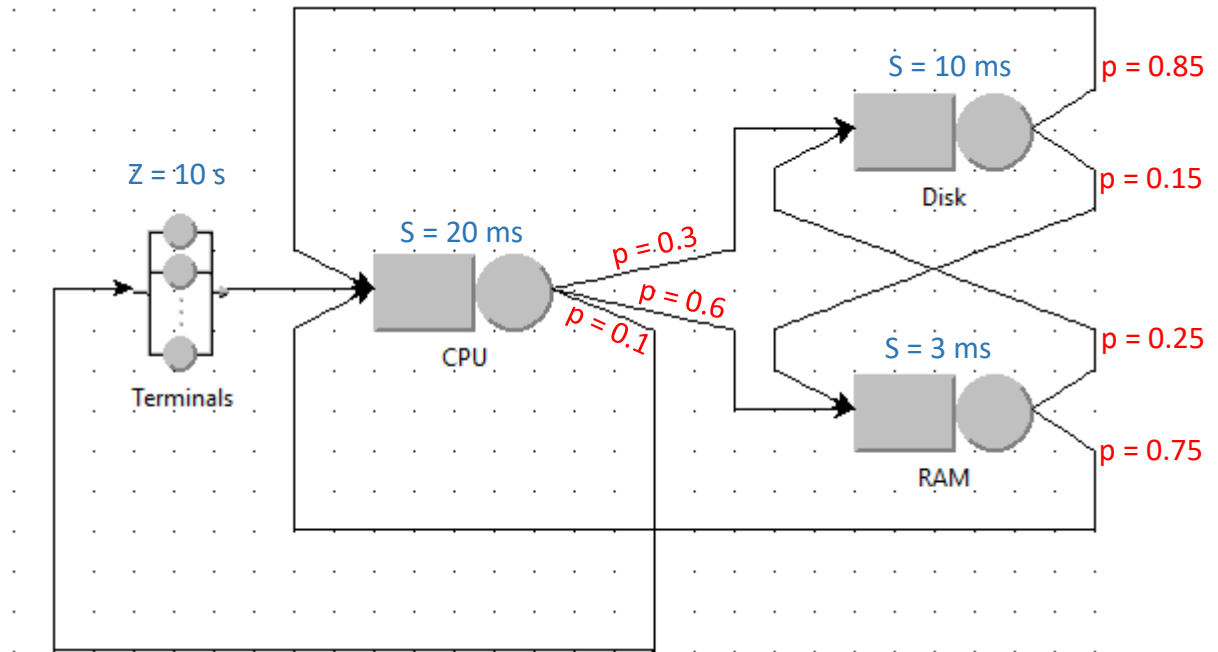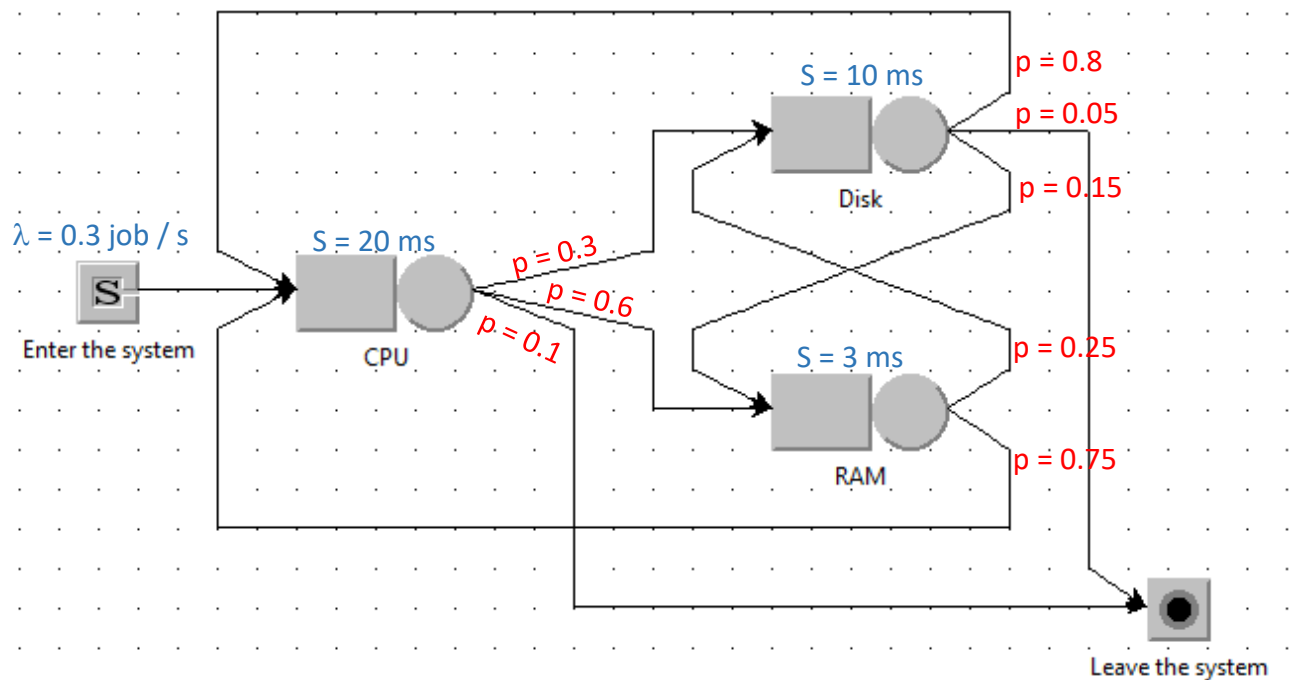

Compute:
1. The visits to the four stations
2. The demand of the four stations

OPEN MODEL

After testing has been completed, the fixed users are replaced by external arrival and departures. Moreover, it has been observed that sometimes the disk fails, making jobs leave immediately after their service. The new system can be modelled with the following queuing network:

In this new scenario, compute:
1. The visits to the three stations
2. The demand of the three stations
3. The throughput of the three stations