# Lab-6

Problem:

You are to model a walk-in clinic. Arrivals are 2 patients per hour in an exponential distribution. First, a patient must register with a nurse before seeing the doctor. There is only one nurse on duty with service time being exponentially distributed at 3 minutes. Next, a patient must enter a queue to see the doctor. The doctor takes 18 minutes in an exponential distribution to see each patient. Patients arriving will balk (choose to go home / go to another clinic) if there are more than 5 patients in the entire system (i.e. waiting to register with the nurse, being registered by the nurse, waiting to see the doctor, being seen by the doctor).

The following is a flow chart of this system (before modeling balking):
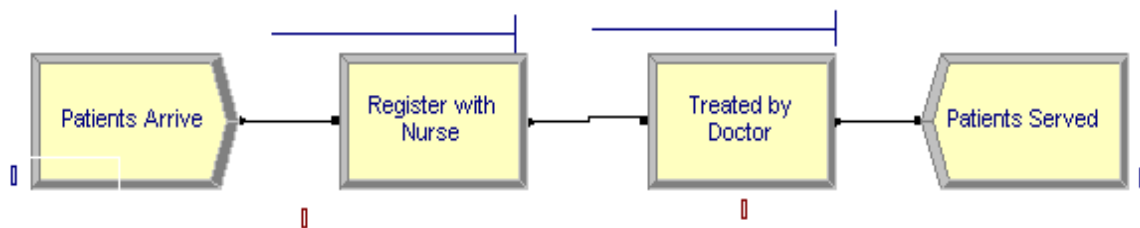

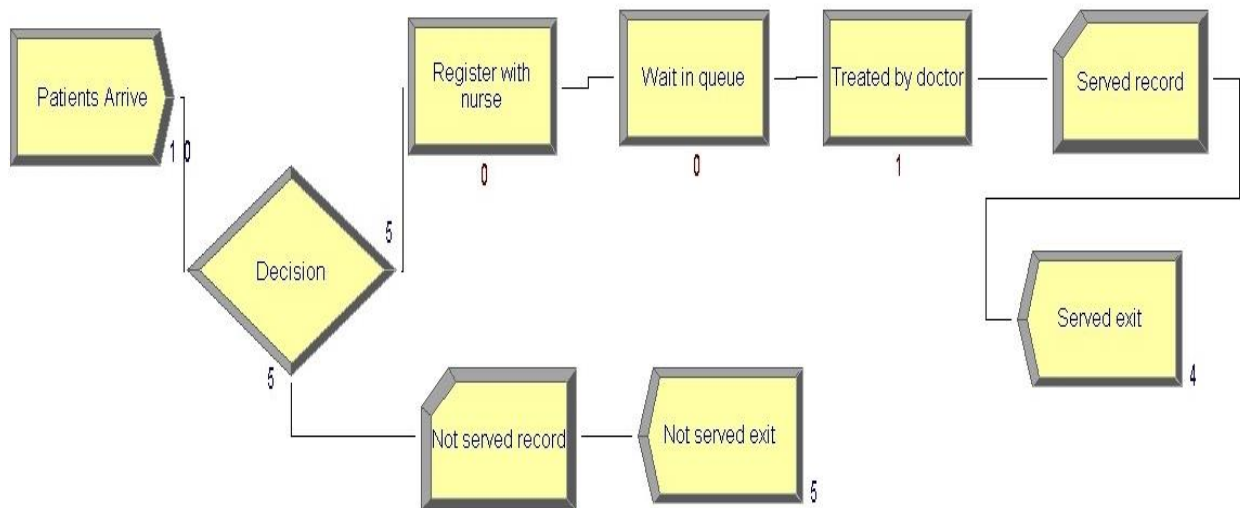
In order to simulate balking, we must do the following:

1. Create a condition called "Balk?" before any of the processes (i.e. just after the create module) that, when TRUE, will continue with the process, and when FALSE, will dispose the entity without entering any of the processes.

        a. TRUE links to the Register with Nurse Module

        b. FALSE links with the next module

2. Add a Balked Patients dispose module that links to the FALSE path of the condition

3. Add a counter (record module) to count the number of patients served (placed just before the Patients Served dispose module)

4. Add a counter (record module) to count the number of patients that balked (placed just before the Balked Patients dispose module)

Diagram
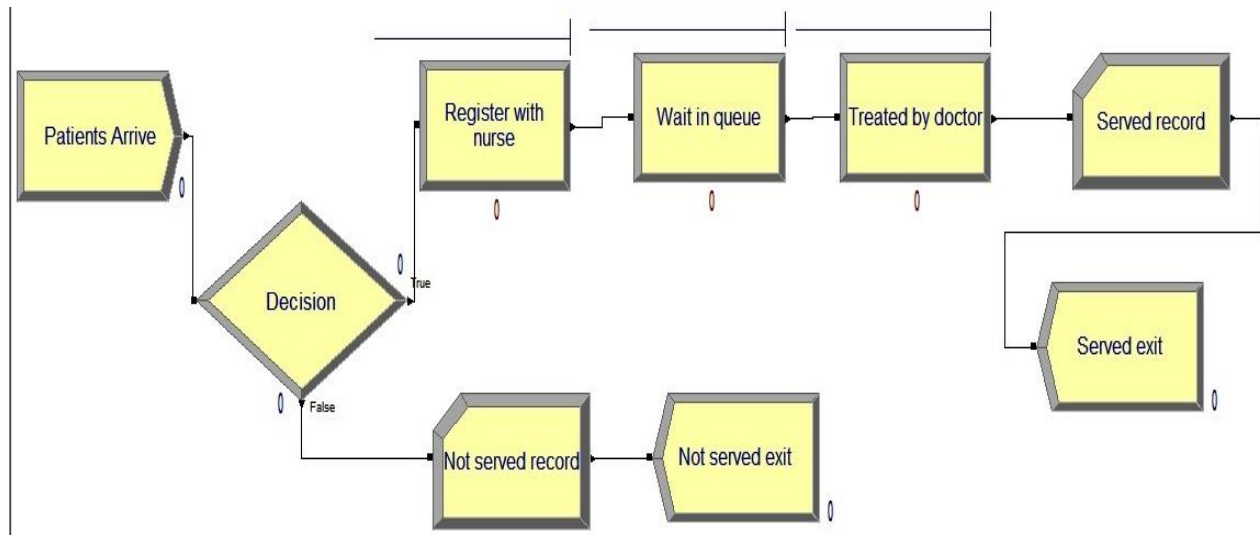
Before simulation

After simulation