ECS 455: Quiz 2

Instructions

1. Separate into groups of no more than three persons.
2. Only one submission is needed for each group. Late submission will not be accepted.
3. ***Write down all the steps*** that you have done to obtain your answers. You may not get full credit even when your answer is correct without showing how you get your answer.
4. **Do not panic.**

Name	ID

Consider a system which has 2 channels. We would like to find the blocking probability via the Markov chain method. For each of the following models, **draw the Markov chain** via discrete time approximation. Don't forget to indicate the transition probabilities on the arrows. Assume that the duration of each time slot is 1 millisecond. Then, find (1) the **steady-state probabilities** and (2) the long-term **call blocking probability**.

1. ***Erlang B*** model: Assume that the *total* call request rate is 10 calls per hour and the average call duration is 12 mins.

2. ***Engset*** model: Assume that there are 5 users. The call request rate for *each* user is 2 calls per hour and the average call duration is 12 mins.