A barber shop consists of a waiting room with N chairs and a barber room with one chair. If there are no customers to be served, the barber goes to sleep. If the customers enters the barber shop and all the chairs are occupied, then the customer leaves the shop. If the barber is busy but chairs are available, then the customer sits in one of the chairs. If the barber is asleep, the customer wakes up the barber. Write a program (pseudo code) to coordinate the barber and the customer.