

## **Bakra Management System :)**

Suppose you need to automate the documentation required for the shared Qurbani process at a Mosque/Madrassah, on the occasion of Eid-ul-Azha:

The mosque buys sacrificial animals in large quantities few weeks before the Eid. People then visit the mosque, choose animals for sacrifice, and pay the price. On the day of Eid, the mosque management slaughters the animals, and packs the meat into several bags. The clients then come to the mosque, and take their meat.

Some animals can be purchased by only a single person, such as a Bakra :) ... Others can be shared by a number of owners, cow for example. However the number of persons cannot exceed seven. On the other hand, a single person may purchase more than one shares or animals.

Each animal wears a token containing a unique number for identification. When a customer comes for the first time, he visits the animals, and then tells the token number(s) of the selected animal(s) to the mosque management.

The management keeps track of the bookings continually. As soon as all shares of an animal is booked, the management gets the animal away from the display area.

On the occasion of Eid, the sacrifices continue for three days. Some animals are scheduled first day, some at second day, and some at the third day. The customers are told the day and estimated time before finalizing the booking.

After the sacrifice, when a client comes to collect the meat, the management updates its records. If a customer does not take its share within few hours, the meat is distributed among the poor and the needy.

That is all folks :) ... Now develop the following diagrams:

1. A use case diagram for the afore-mentioned system.
2. A class diagram for the system, showing any important data members and member functions.
3. An activity diagram for the process of booking.
4. A state diagram for the objects of the Animal class.
5. A design-level sequence diagram for the booking operation.

Also give a use case description for the use case "Make a Booking". Mention any alternate scenarios or use case extensions.