**Software Security**

**Activity # 2**

“Top Services Hotel” is doing well but its front-desk activities are not automated. The manager asks you to replace the existing paper-based system by an automated one since she (the manager) is convinced that the new system will save money and help the users to serve guests better. The system will be used to enter reservations as well as to check people in and out of the hotel.

 The hotel consists of ten floors with thirty rooms each in which guests can stay. Some hotel rooms adjoin others; i.e., there are internal doors between them, so a guest can stay in either an individual room or a suite. Each hotel room is assigned a quality level. For example, a larger room or a room with a view would be better than a smaller room without view. Each room also has a certain number and type of beds, a room number, and a smoking/non-smoking status. Each quality level has a maximum daily rate, although the rate that a guest pays may be less. “Top Services Hotel” gives discounts to its customers. A customer, who has visited the hotel in the last two years, gets 10% of discounts if he/she spends more than 7 nights in the hotel, and 5% otherwise. A customer who visits the hotel for the first time gets 8% of discounts if he/she spends more than 7 nights in the hotel.

 When a hotel guest wishes to make a reservation, the hotel clerk asks him or her what nights he or she wants to stay and the type of rooms he or she wants. The system must verify if rooms are available on those nights before allowing a reservation to be made. A customer can make reservation by telephone, by fax, by email, or online on the Internet. The customer should give a deposit of 5% of the total amount when he or she makes his or her reservation.

 The hotel needs to record basic information about each guest, such as his or her name, address, telephone number, nationality, credit card, etc. A reservation can be cancelled at any time but the reimbursement is not guaranteed. A reservation’s deposit is fully reimbursed if the reservation is cancelled at least three weeks before the check in date. However, a reservation’s deposit is 50% reimbursed if the reservation is cancelled at least one week before the check in date.

 When a guest checks in, a room is allocated to him or her until he or she checks out. The system must keep track of the guest’s account, and print his or her bill. The bill should contain the room’s rate and all other charges (beverages, foods, telephone, etc.). The bill can be paid either by cash, by bankcard, or by credit card. “Top Services Hotel” employs full time and half time individuals and the manager is responsible for defining the room’s rate as well as the prices of consumptions

1. Generate use cases diagram for the whole system
2. Generate class diagram for the whole system
3. Generate Activity diagram for the whole system
4. Identify the security goals/security objectives
5. Identify existing threats and vulnerabilities (up to 10) ahmad