Acme Six-Pack

Acme, Inc. is a holding that encompasses many companies worldwide. One of them is Acme Six-Pack, Inc., which specialises in managing gyms.

The goal of this project is to develop a web information system that Acme Six-Pack, Inc. can use to manage their gyms. This document provides an informal description of their requirements; ask your lecturers for clarifications and details.

C-level requirements

Information requirements

1. The actors of the system are administrators and customers. The system must store their names, surnames, and contact phones. Optionally, customers can store their social identities. Such an identity consist of nick in a social network, the name of a social network, a home page in that social network, and a picture of him or her.
2. Customers may register an optional credit card that they can use to pay fees. Note that it is not mandatory to provide a credit card when a user registers to the system as a customer, but when he or she pays a fee.
3. The system must store the following information about every gym: a name, a description, a postal address, a phone number, a list of services, a fee, and an optional picture.
4. Every gym offers a catalogue of services, e.g., fitness, spinning, karate, or swimming. The only service that is offered by every gym is fitness. For every service, the system must store a name, a description, and some optional pictures.
5. Customers may pay a fee that allows them to use the services that are offered by a given gym. For every fee payment, the system must store the moment when the payment was made, the credit card used to pay the fee (which must not be expired), and the day when the fee becomes active (which must not be more than six months after the payment is made), and the day when the fee becomes inactive; by default, fees become inactive 30 days after they become active.
6. Customers who have an active payment may book any of the services offered by the corresponding gym. The system stores the moment when the booking is created, the moment when the corresponding service is requested, the duration of the service, and whether it has been approved or not by an administrator. It is necessary that the system keeps track of the administrator who has approved or denied a booking. The duration of a booking must be expressed in hours or half-hours; for instance, 1.5 or 2.0 are valid durations, but 3.25 or 4.45 are invalid. Services cannot be booked for more than four hours.
7. The system must store the following information about credit cards: a holder name, a brand name, a valid number, an expiration month, an expiration year, and a CVV code, which is an integer between 100 and 999. No expired credit cards may be registered or used to pay services.

Functional requirements

8. A user who is not authenticated must be able to:
    1. Register to the system as a customer.

2. List the catalogue of gyms and navigate to the services that they offer. The listings of gyms must include hints on the total number of customers who have booked any of their services.
3. List the catalogue of services and navigate to the gyms that offer them. The listings of services must include a hint on the total number of customers who have booked them.
4. Search for a gym that offers a service that includes a given key word in its name or its description.

9. A user who is authenticated must be able to:
   1. Do the same as a user who is not authenticated, except for registering to the system.
   2. Change his or her profile data.

10. A user who is authenticated as a customer must be able to:
   1. Pay a gym fee.
   2. List the gyms in which he or she has an active fee payment and navigate to the details of the corresponding fee payments.
   3. Book a service as long as he or she has paid the corresponding fee.
   4. Cancel a booking as long as no administrator has approved or denied it.
   5. List his or her service bookings. The listing must include indications on whether the corresponding bookings have been approved, denied, or are still pending and indications on whether they are expired or not.

11. A user who is authenticated as an administrator must be able to:
   1. Manage the gyms, which includes listing, creating, modifying, or deleting them.
   2. Approve or deny a service booking.
   3. Change the moment when a fee payment becomes inactive, as long as the new inactivation moment if after the current inactivation moment.
   4. Display a dashboard with the following information:
      - The most popular gym/s.
      - The least popular gyms/s.
      - The most popular service/s.
      - The least popular service/s.
      - The customer/s who has/have paid more fees.
      - The customer/s who has/have paid less fees.

Non-functional requirements

12. The system must be available in English and Spanish. (The data themselves are not required to be available in several languages, only the messages that the system displays.)
13. Pictures must be stored elsewhere, e.g., in Flickr.com or Tumblr.com. The system is only required to store their URLs, where necessary.
14. Wherever the information about a gym is displayed, the system must show a link to display its location using a free mapping service, e.g., Google Maps or Microsoft's Maps.

B-level requirements

Information requirements

15. The system must allow its actors to exchange messages. Every actor must have the following system folders, namely: "in box", which stores the messages that he or she receives, "out box", which stores the messages that he or she sends, "trash box", which stores the messag-

es that he or she deletes, and "spam box", which stores the messages that the system thinks might be spam messages.

16. Every message has a sender and a recipient (who must be actors of the system), a subject, a body, and the moment when it was sent. By default, messages are classified as spam when they contain some key words that are configured by an administrator.

Functional requirements

17. Every user who is authenticated must be able to:
    1. Exchange messages with other users
    2. Manage his or her messages and message boxes. When a message is deleted from a folder other than "trash box", it is moved to "trash box"; when it is deleted from "trash box", it is actually removed from the system. Actors can create additional folders, rename, or delete them.
18. A user who is authenticated as an administrator must be able to:
    1. Change the list of terms that the system uses to flag a message as spam. By default, that list includes the following terms: "viagra", "cialis", "sex", "scort", "money transfer", "lottery", "green card", "email quota", "click here", and "spam".
    2. Display a dashboard with the following information:
       - The actor/s who sends/send more spam messages.
       - The average number of messages in an actor's message boxes.

Non-functional requirements

19. When a customer logs in to the system, it must show a random service that that customer has not booked yet and offer him or her to book it. Obviously, the system must not offer a service that that customer cannot book.

A-level requirements

Information requirements

20. The actors of the system may comment on the gyms and the services that they offer.   The system must store the following information regarding the comments: the actor who wrote it, the moment then it was written, a piece of text, and a star rating (which must be zero, one, two, or three stars).

Functional requirements

21. Every user, including users who are not authenticated, must be able to:
    1. List the comments that are associated with the gyms and the services.
22. Every authenticated user must be able to:
    1. Write a comment and associate it with a gym or a service
23. A user who is authenticated as an administrator must be able to:
    1. Delete a comment that he or she considers is inappropriate.
    2. Display a dashboard with the following information:
       - The gyms/s that has/have more comments.
       - The service/s that has/have more comments.
       - The average number of comments written by the actors, including the standard deviation.
       - The average number of comments per gym.
       - The average number of comments per service.

- ▪ The customer/s who has/have been removed more comments.

Non-functional requirements

24. The implementation of the subsystem that handles comments must be as generic as possible. It should be very easy to extend the system so that actors can comment on new entities that might be added in forthcoming versions of the system.