

# Acme Six-Pack 2.0

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Acme Six-Pack, Inc. is requesting maintenance regarding the previous version of their project. This document provides an informal description of their new requirements; ask your lecturers for clarifications and details.

## C-level requirements

### Information requirements

1. Gyms are composed of rooms. For every room, the system must store its name, a description, its number of seats, and some optional pictures.
2. Every gym has a bulletin board. For every bulletin, the system must store the moment when it is published, a title, and a description.
3. Customers may request invoices for their payments. The system must store the following information for every invoice: the invoicee's name, his or her VAT number, the moment when the invoice is created, the list of fee payments involved, the total cost, and a description. By default, the invoicee's name is the name of the customer who requests the invoice and the description is a piece of text that provides information about the payments involved in the invoice. A payment cannot be involved in more than one invoice. Once an invoice is issued, it cannot be modified or deleted.

### Functional requirements

4. A user who is not authenticated must be able to:
  1. Navigate through the gyms, their rooms, and their bulletin boards.
  2. Search for the bulletins that contain a given key word in their titles or descriptions.
5. A user who is authenticated as a customer must be able to:
  1. Request an invoice to the system. The system must display a draft and ask for confirmation before it is issued.
  2. List his or her invoices.
  3. Print his or her invoices to a system's printer. The invoice must be formatted properly.
6. A user who is authenticated as an administrator must be able to:
  1. Manage the rooms of a gym, which includes listing, creating, modifying, and deleting them.
  2. Manage the bulletins of a gym, which includes listing and creating them. Bulletins cannot be modified or deleted. Before publishing a bulletin, the system must ask for confirmation.
  3. Display a dashboard with the following information:
    - The average number of rooms per gym and its standard deviation.
    - The gym/s that has/have more rooms than the average.
    - The gym/s that has/have less rooms than the average.
    - The customer/s to whom more invoices have been issued.
    - The customer/s who has/have not requested any invoices.

## B-level requirements

### Information requirements

1. There is a new kind of actor in the system: trainers.
2. The actors of the system can comment on trainers using the same subsystem that they use to comment on gyms or activities.
3. Every trainer is a specialist in a number of services, and the system must keep record of their specialties.
4. The booking subsystem that was devised in the previous version of the project has proven not to be enough to manage Acme Six-Pack's gyms. Therefore, it must be removed completely from the new version of the project.
5. The new version of the project must support activity plans, which are composed of activities, each of which is characterised by a service, a room, a trainer, a title, a number of seats available, a date, a starting time, a duration, a description, and some optional pictures. Obviously, the trainer that is involved in an activity must be a specialist in the corresponding service and he or she cannot be involved in overlapping activities. Furthermore, the number of seats available cannot exceed the number of seats in the corresponding room. By default, the title and the pictures of an activity are copied from the corresponding service, if any. The duration is measured in hours and half-hours, that is, 1.0 or 2.5 are valid durations, but 1.3 or 2.45 are not.
6. Customers who have an active payment may book any of the activities in the activity plan of the corresponding gym as long as there are enough seats available. The system must prevent a customer from booking overlapping activities.

### Functional requirements

7. A user who is not authenticated must be able to:
  1. Navigate through the gyms and their activity plans.
  2. Navigate through the trainers.
8. A user who is authenticated as a customer must be able to:
  1. Book an activity in a gym as long as he or she has paid the corresponding fee, there is at least one seat available, and he or she has not booked any overlapping activities.
  2. List the activities that he or she has booked.
  3. Cancel a booking of his or her.
9. A user who is authenticated as a trainer must be able to:
  1. Manage the list of services in which he or she specialises.
10. A user who is authenticated as an administrator must be able to:
  1. Register a new trainer to the system.
  2. Manage activity plans, which includes listing activities, creating them, modifying them, and deleting them.
  3. Display a dashboard with the following information:
    - The list of activities, in decreasing order of popularity.
    - The average number of activities per gym, grouped by service.
    - The average number of services in which trainers specialise.
    - The most popular services regarding the number of trainers that are specialists in them.

### Non-functional requirements

1. The system must provide an easy-to-use user interface to create and browse activity plans.

## A-level requirements

### Information requirements

1. Every trainer must eventually register a curriculum, for which the system must store the following information: the moment when it was updated for the last time, an optional picture, a statement, a list of skills, a list of likes, and a list of dislikes. If no picture is entered, then the picture in the trainer's profile is used, if any.

### Functional requirements

2. A user who is not authenticated must be able to:
  1. Search for a trainer using a single keyword that must appear in his or name, surname, or curriculum.
3. A user who is authenticated as a trainer must be able to:
  1. Manage his curriculum, which includes creating it, displaying it, modifying it, or deleting it.
4. A user who is authenticated as an administrator must be able to:
  1. Display a dashboard with the following information:
    - The list of services, which must include indications regarding the total number of trainers that specialise in each of them.
    - The ratio of trainers whose curriculum is up-to-date. A curriculum is considered outdated when a trainer does not update it for more than one year.

### Non-functional requirements

5. The system must store an exchange rate table in which the exchange rate of several currencies is stored. All rates must be stored regarding Euros, which is the currency that is used internally to store prices. Wherever a price is displayed, the user must be able to select the currency in which he or she wishes it to be displayed. By default, the system must store an exchange table that includes at least Spanish Pesetas (ESP), French Francs (FRF), Italian Liras (ITL), German Marks (DEM), and Portuguese Escudos (PTE).