

# Abstract

Acme, Inc. is a holding that encompasses many companies worldwide. One of them is Acme Comics, Inc., which provides a social network for people who want to share their preferences about comics.

The goal of this project is to develop a web information system for Acme Comics, Inc. to help their users catalogue their comics and share their comic preferences with each other.

## Information requirements

1. The actors of the system are administrators and users. For both, the system must store a username and a password for logging in, a nickname, and the date of registration.
2. For users, the system must store, an optional description (for the user's public profile), the user's level (described below), the last time this level was updated, whether the user allows the general public to send him direct messages or only friends (and administrators), whether the user is trusted or not (described below), and whether the user is blocked from accessing the system, and if he is, an optional reason for the block.
  - a. The user's level is a small scoring system over the activity an user accumulates in the site. A new user starts at "C" and as they use the site, mark more comics as read, etc, the level increases to "B", "A" and finally "S".
3. The site displays information about comic series, which users read and rate. For each comic book, the system must store its name, and optionally, a description, an image, and a list of tags that users can use to classify and search for them. Tags do not have a strict taxonomy: any possible tag can be used at any time.
4. For each pair of a comic, and a user that has interacted with it, the system must store: whether the user has starred it (indicated he likes it by clicking a star shaped button), if the user has chosen to rate the comic, the score he gave it, and the user's status with the comic, which must be one of: NONE (default), PLANNING\_TO\_READ, READING, COMPLETED and DROPPED (which means the user doesn't like the comic and likely won't read it again).
5. Each comic has a publisher, which is the company that currently hold rights to its intellectual property and publishes the volumes. For each publisher, the system will store: its name, and optionally, the foundation date of the company, a description, and an image.
6. Comics have volumes, which are groups of chapters that are typically either released together, or sold later as a group if the series releases chapter by chapter. For each volume, the system will store the name, the release date, and optionally a chapter count, a description and an image.
7. Comics and volumes have at least one author, possibly more, which are the people that have participated in writing them. For each author, the system will store a name, and optionally, a birth date, a birth place, an image, and a description.
8. Comics have characters, which are the fictional people that appear in it. A character

- may appear in more than one comic, and may have a different role (protagonist, antagonist, guest character...) in each one. For each character, the system will store a name, and optionally an alias (the main one), a city, a small string describing its first appearance, other aliases the character may have, an image, and a description.
9. Users can comment on Authors, Characters, Comics, Volumes or Publishers. For each comment, the system will store the comment text and the moment it is made.
  10. Actors can message other actors, for each message the system will store a subject, the body, whether it is an administrator's notice or not, and when it is related to a sale, which sale is it related to.
  11. Messages are stored in folders. Each actor from the start has 3 built-in system folders made for them which they cannot rename or delete: the inbox, the sent messages folder, and the trash. Additionally they may create their own folders which they can name as they like.
  12. Users can sell merchandise related to a comic to another users. The system will store, for each sale: which comic is it related to, a name, a description, a suggested price, a list of images, a list of interested users, the status of the sale (one of SELLING, COMPLETE, CANCELLED), the time it was created, and if the sale is complete, which user was the merchandise sold to.

## Functional requirements

1. An actor who is not authenticated must be able to:
  - a. Register to the system as an user.
  - b. List the catalogue of comic series, volumes (through their associated comics), publishers, authors and characters.
  - c. Display every comic series, which includes its name, description, image, tags, authors involved, publishers involved, characters and their roles, and volumes. If the actor is logged in as an user, additionally show his rating, if he has rated it, and the user's status with the comic.
  - d. Display every volume, which includes its name, description, release date, image, chapter count, publisher, author and comments.
  - e. Display every publisher, which includes its name, the foundation date of the company, description, image and its characters, comics and comments.
  - f. Display every author, which includes his or her name, description, birth date, birth place, image, his or her comics, volumes and comments.
  - g. Display every character, which includes its name, description, main alias, other aliases, its city, its first appearance, an image, the comics he appears in and comments.
  - h. Search for comic series, using full text search over tags, description, name, author name, publisher name and characters' main alias.
  - i. Search for users and administrators registered in the system.
  - j. Display an user's profile, which includes their profile information (name, description, level) as well as the comics they marked as read, the ratings they gave them, "planning to read" lists, starred comics, etc.
2. An actor who is authenticated must be able to:
  - a. Do the same as an actor who is not authenticated, except creating an account.

- b. Change his own account and profile information.
  - c. Send messages to other actors.
  - d. List, display and delete (move to trash, no actual deletion is involved) his own messages.
  - e. Move messages between folders.
  - f. Create message folders.
  - g. Rename or delete message folders, except system folders.
3. An actor who is authenticated as an user must be able to:
- a. Display his own profile.
  - b. Change his user settings.
  - c. Rate a comic series or remove a previous rating, star or unstar it, and change his status with it.
  - d. Mark a comic volume as read or unread.
  - e. Add comments in Comics, Volumes, Publishers, Actors, Characters and Sales. Comments may not be edited or deleted after they are added.
  - f. Mark or unmark other users as friends. Friends are always allowed to send messages to the user.
  - g. Put merchandise for sale.
  - h. Mark or unmark himself as interested in a sale.
  - i. Talk with the seller about the sale.
  - j. Mark a sale as complete when an user has been sold the merchandise.
  - k. Mark a sale as cancelled if the sale is not going to be completed.
  - l. List and display sales in progress, as well as completed or cancelled sales that concern the user.
4. An actor who is authenticated as a trusted user or as an administrator must be able to:
- a. Create, edit and delete a comic series.
  - b. Create, edit and delete a publisher.
  - c. Create, edit and delete a comic volume.
  - d. Create, edit and delete an author.
  - e. Create, edit and delete a character.
5. An actor who is authenticated as an administrator must be able to:
- a. Set or unset an user's trusted status.
  - b. Block an user, optionally specifying a reason.
  - c. Delete any comments.
  - d. Force an user's level update immediately.
  - e. Send messages to any user, even if the user rejects messages from everyone but their friends.
  - f. Massively send a message to all users, all trusted users, all trusted users and administrators, or all administrators.
  - g. When sending or massively sending a message, mark it as an Administration Notice, which is visually emphasized in the message list.

## Non-functional requirements

1. The system must be available in English and Spanish.
2. The system must be as efficient as possible.
3. For simplicity, all images are stored as an URL to an external service like imgur.

Directly uploading an image to the application server is not allowed.

4. Upon logging in, an user's level must be immediately recalculated and updated, but to keep the system performant, this shall only be done once per day.
5. Blocked users must be logged out immediately after logging in or performing any action in the system, and a message must be displayed, including the block reason if one was provided, or displaying a generic message otherwise.
6. If a new volume is added to a comic, all users with that have the comic's status set to COMPLETED must have it automatically changed to PLANNING\_TO\_READ.
7. If a volume is marked by an user as NOT READ and the user has the comic's status set to COMPLETED, he must have it automatically changed to PLANNING\_TO\_READ.
8. An user may not set a comic's status to COMPLETED until he has marked all volumes as read.