Acme Antenna

Acme, Inc. is a holding that encompasses many companies worldwide. One of them is Acme Antenna, Inc., which provides a social network for people who need help with their antennas.

The goal of this project is to develop a web information system to help Acme Antenna, Inc. manage their business. This document provides an informal description of their requirements; ask your lecturers for clarifications and details.

C-level requirements

Information requirements

1. The system must support two kinds of actors, namely: administrators and users. It must store the following information regarding them: their names, surnames, pictures (optional), postal addresses (optional), phone numbers (optional), and email addresses.
2. Users register their antennas. For every antenna, the system must store its serial number, its model, its co-ordinates (longitude plus latitude), its azimuth (in range 0-360º), its elevation (in range 0-90º), the quality of the signal they get (in range 0..100%), and the satellite towards which it is oriented.
3. The system must store the following information about every satellite: its name, a description, and the list of platforms that it broadcasts. For every platform, a name and a description must be stored.
4. Users may subscribe to platforms. For every subscription, the system must store the start and end dates plus a valid credit card.

Functional requirements

5. An actor who is not authenticated must be able to:
    1. Register to the system as a user.
    2. Browse the list of satellites and navigate to the platforms that they broadcast.
    3. Browse the list of platforms and navigate to the satellites that broadcast them.
    4. Search for satellites and platforms using a single key word that must be contained in their names or descriptions.
6. An actor who is authenticated as a user must be able to:
    1. Do the same as an actor who is not authenticated, but register to the system.
    2. Manage his or her antennas, which includes registering them, editing them, deleting them, and listing them. The information about an antenna is private to the actor who registers it.
    3. Subscribe to a platform for a period of time by providing a valid credit card. The subscription results in a key code that must be provided by the system.
7. An actor who is authenticated as an administrator must be able to:
    1. Display a dashboard with the following information:
        - The average and the standard deviation of the number of antennas per user.
        - The average and the standard deviation of the quality of the antennas.
        - A chart with the number of antennas per model.

- The top-3 antenna models in terms of popularity.

Non-functional requirements

8. 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.)
9. The system will be run in Spain, so it must comply with the Spanish regulations except for the following ones: a) the requirement in LOPD regarding keeping files and communications secure and confidential (unless you opt to earn an A$^+$, in which case you're requested to use the HTTPS protocol where appropriate); b) the requirement in LSSI regarding informing the Chamber of Commerce about your internet domain.
10. The system must be as efficient as possible.
11. The key codes generated by the system must be secure random strings with 32 alphanumeric characters.

B-level requirements

Information requirements

12. The actors of the system may publish tutorials. For every tutorial, the system must store the moment when it was edited for the last time, a title, its text, and an optional collection of pictures.
13. Actors may comment on the tutorials. For every comment, the system must store the moment when it is written, its title, its text, and an optional collection of pictures.

Functional requirements

14. An actor who is not authenticated must be able to:
    1. List the tutorials in the system and display them, but not their comments.
15. An actor who is authenticated as a user must be able to:
    2. List the tutorials and display them, including their comments.
    3. Publish a tutorial and edit it.
    4. Post a comment to a tutorial. Confirmation must be requested before posting a comment since they cannot be modified later.
16. An actor who is authenticated as an administrator must be able to:
    1. Remove a tutorial that he or she thinks is inappropriate.
    2. Remove a comment that he or she thinks is inappropriate.
    3. Display a dashboard with the following information:
        - The average and the standard deviation of the number of tutorials per user.
        - The average and the standard deviation of the number of comments per tutorial.
        - The actors who have published a number of tutorials that is above the average plus the standard deviation.

Non-functional requirements

17. The system is not requested to store pictures, but their URLs to external systems like Flickr.com or Pinterest.com, to mention a couple of examples.

18. The terms and conditions of the system must make it clear in which circumstances a tutorial or a comment is considered inappropriate and can then be removed by an administrator.

A-level requirements

Information requirements

19. Comments can be written to reply to other comments, which helps organise them hierarchically.

Functional requirements

20. An actor who is authenticated as a user must be able to:
    1. Reply to any comment that he or she can display.
21. An actor who is authenticated as an administrator must be able to:
    1. Display a dashboard with the following information:
       - The average and the standard deviation of the number of replies per comment.
       - The average and the standard deviation of the length of the comments.
       - The average and the standard deviation of the number of pictures per tutorial.
       - The average and the standard deviation of the number of pictures per comment.

Non-functional requirements

Intentionally blank.

A+-level requirements

Information requirements

Intentionally blank.

Functional requirements

Intentionally blank.

Non-functional requirements

22. The system must use HTTPS where appropriate.
23. When an antenna is displayed, the system must provide a link to geo-locate it on a map.