Acme RentCar

Acme, Inc. is a holding that encompasses many companies worldwide, including Acme RentCar, Inc. His business consists of helping companies and owners to make use of cars for all kinds of needs that they can buy or rent.
The goal of this project is to develop a web information system that Acme RentCar, Inc. can use to run their business. This document provides an informal requirement specification.

Information requirements

1. The actors of the system are administrators, owners, users, and operators. For every actor, the system must store a name, a surname, an email, an optional phone number, and an optional address.
2. Users can rent cars. For each rental, the system must store a ticker that identifies it uniquely, the user's data, the car they want to rent, a credit card previously created to make payments, the date on which the car is rented, the date on which the rental ends, and the total price. Also, users must accept a contract.
3. For cars, the system must store the owner's information,the firm, the model of the car, the number of doors, the type of fuel, the number of seats, kind of car (if this is to rent or to sale), price (if the car is to rent the rental price per day else the sale price), number of kilometers, the availability, an optional car photo, and a list of users who have already rented that car.
4. Users can write comments on the cars once they have finished their rental agreement. For comments, the system must store the date when he or she writes it, a comment and the user who created the comment.
5. Phone numbers should adhere to either patterns "+CC (AC) PN" or "+CC PN", where "+CC" denotes a country code in range "+1" up to "+999", "(AC)" denotes an area code in range "(1)" up to "(999)", and "PN" denotes a number that must have at least four digits. Note that phone numbers should adhere to the previous patterns, but they are not required to. Whenever a phone number that does not match this pattern is entered, the system must ask for confirmation; if the user confirms the number, it then must be stored.
6. Tickers are generated automatically, must be unique, and cannot be modified by any actors. They must adhere to pattern "XXXX99 -YYMMDD", where "YYMMDD" refers to the current year, month, and day, "XXXX" refers to four uppercase random letters, and "99" refers to two random digits.
7. The system must store the following information about credit cards: a holder name, a brand name (which must be either VISA, MASTERCARD, DINNERS, or AMEX), a number, an expiration month, an expiration year, and a CVV code, which is an integer from 100 to 999.
8. Actors can exchange messages. For every message, the system must keep track of the sender, the recipient, the moment when it was sent, the subject, the body, and its priority. Priorities are HIGH, NEUTRAL, or LOW; no other values are expected. Actors can create custom folders, which may be arbitrarily nested, and use them to

organise their messages. Furthermore, every actor has the following system folders: "in box", "out box", "notification box", "trash box", and "spam box". When an actor receives a message, it gets to the "in box" unless the system flags it as spam, in which case it gets to the "spam box". When he or she sends a message to another user, a copy is saved to the "out box". When an actor removes a message from a folder other than "trash box", it is moved to folder "trash box"; when he or she removes it from folder "trash box", then it is actually removed from the system. System folders are predefined and the actors must not be allowed to delete them, to change their names, or to move them.

9. The availability of a car will depend if it is in repair or not. Once the car has been purchased both for sale and for rent, the user may have a repair system. To make the repair, the user must fill out a form. The system must store the date when he or she writes it, the car to be repaired, the type of damage, the level of urgency which can be HIGH, NEUTRAL, or LOW; no other values are expected, and the status which can be "Unnasigned", "In process" or "Finished".

10. Operators can assign themselves a repair only if they have finished all of them before. It means that an operator only can work in one repair at the same time.

11. Operators can register their curricula. Every curriculum has a ticker, some personal records, some education records and some professional records.

12. A personal record consists of the full name of a candidate, a photo of him or her, his or her email, his or her phone number, and a URL to his or her LinkedIn profile.

13. An education record consists of the title of a diploma, the period during which the ranger was studying, the institution that awarded the diploma, an optional link to an attachment, and some optional comments.

14. A professional record consists of the name of the company for which a operator was working, the corresponding period of time, the role played, an optional link to an attachment, and some optional comments.

15. Users have a finder to search cars in which they can specify some search criteria, namely: a single keyword and/or a price range to search for cars. The key word must be contained in the firm, or the model of the car returned, which must not exceed the price range. Initially, every search criteria must be null, which means that every car must be returned.

16. An user may follow other users. The most popular user will be the user who has the maximum number of followers.

17. An user may like or dislike some cars, and the system must store track of their likes.

18. An user can buy a car. For each sell, a commercial invoice is generated, so, the system must stores owner, user, car, total price, and the date of the payment.

19. For each sell, the system must stores owner, user, car, total price, and the date of the payment.

20. Cars can be identified with a category. The system must has a category tree which each category has a category father, daughter categories and a title.

21. There's a new entity called event. For each event, the system must stores a title, a description, an optional picture and the location and moment where and when the event takes its places. In events, owners show their cars to other people. An event can be commented.

Functional requirements

22. An actor who is not authenticated must be able to:
    a. Register as a user or owner or operator.
    b. Browse for availables cars in the system and display them.
    c. Search cars using a single keyword that must be contained either in their model of the car or type of fuel.
    d. Search also car with range of price.
    e. List all the cars in the system and navigate to the users who already rented the car.
    f. List all the events in the system.
    g. List all the owners that will participate on an given event and browse all the cars that they've involved on it.
    h. List all the comments of an event.
    i. Browse the list of cars by navigating the tree of categories.

23. An actor who is authenticated must be able to:
    a. Do the same as an actor who is not authenticated, but register to the system.
    b. Edit his or her personal data.
    c. Exchange messages with other actors and manage them, which includes deleting and moving them from one folder to another.
    d. Create new folders, rename them and choose their parent folder from the list of available folders.
    e. Manage his or her message folders, except for the system folders.

24. An actor who is authenticated as user must be able to:
    a. List all the cars that he or she has purchased.
    b. List all the cars that he or she has rented.
    c. Manage an arbitrary number of car he or she likes, which includes listing them, and modifying or deleting.
    d. Follow or unfollow another user.
    e. Manage his or her finder, which includes modifying it and consulting its results, that is, the cars that meet the search criteria.
    f. Write comments in cars that he or she has rented or bought.
    g. List of comments created by all users in cars.
    h. Rent a car.
    i. Purchase a car.

25. An actor who is authenticated as owner must be able to:
    a. Manage an arbitrary number of cars, which includes creating and listing them, and modifying or deleting them as long as they have not been published.
    b. Put a car for rent indicating its availability.
    c. Can display commercial invoices of them deals.
    d. Join to participate on a future event or cancel it. When joined, he can select only one car to shows on it.
    e. Comment on those events which he/she will participate.

26. An actor who is authenticated as operator must be able to:
    a. Assign a repair or reject it once is assigned.
    b. Manage a curriculum, which includes creating, listing, modifying or deleting it.
    c. Manage a personal record, which includes creating, listing, modifying or deleting it.
    d. Manage a professional record, which includes creating, listing, modifying or deleting it.
    e. Manage a education record, which includes creating, listing, modifying or deleting it.
27. An actor who is authenticated as administrator must be able to:
    a. Create new accounts for owners and operators.
    b. List suspicious users. An actor is considered suspicious if he or she publishes some data that includes a spam word.
    c. Ban another user who he or she considered suspicious, which means that his or her user account is deactivated.
    d. Unban another actor, which means that his or her user account is reactivated
    e. Manage an arbitrary number of categories, which includes creating and listing them, and modifying or deleting.
    f. Delete a comment that he or she thinks is inappropriate
    g. Delete a rental that he or she thinks is inappropriate.
    h. Manage the taxonomies of categories.
    i. Broadcast a notification to all of the actors of the system. The notification must be stored at the "notification box" folder.
    j. Create new events on the system.
    k. Can change initial configuration of the system as welcome message, banner and spam words.
    l. Display a dashboard with the following information:
        ■ The average, the minimum, the maximum, and the standard deviation of the number of users who rented per cars.
        ■ The average, the minimum, the maximum, and the standard deviation of the number comments per cars.
        ■ The average, the minimum, the maximum, and the standard deviation of the price of the cars.
        ■ The average, the minimum, the maximum, and the standard deviation of the number of kilometers of the cars.
        ■ The top-10 most rented cars.
        ■ The average, the minimum, the maximum, and the standard deviation of the assistants to events.
        ■ The event with more assistants
        ■ The event with less assistants
        ■ The ratio of cars availability in the system.
        ■ The ratio of car repairs with the urgency "LOW".
        ■ The ratio of car repairs with the urgency "NEUTRAL".
        ■ The ratio of car repairs with the urgency "HIGH".
        ■ The ratio of the operators that are currently repairing a car.

- The ratio of operators who have registered their curricula.
- The ratio of operators whose curriculum's been endorsed.
- List of suspicious users.
- List of suspicious operators.
- The average, the minimum, the maximum, and the standard deviation of the follows of the user.

Non-functional requirements

28. 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.
29. Photos are not required to be stored in the database, but links to external systems like Flickr.com, Tumblr.com, or Pinterest.com.
30. The "Terms and Conditions" document must make it explicit the reasons why an party or a comment may be considered inappropriate and thus can be removed from the system by an administrator.
31. When a moment is displayed it must be internationalised as follows: "dd-mm-yy hh:mm" in Spanish and "yy/mm/dd hh:mm" in English.
32. The system must be as efficient as possible.
33. The system must be configured with the following taboo words by default: "sex", "sexo","viagra", and "cialis".
34. Whenever a repair is shown, it must be rendered differently depending on its level of urgency, namely: low repair must be shown on a green background, medium repair must be shown on a yellow background and high repair must be shown on a grey background.
35. Acme RentCar, Inc. is franchising their business. They require the following data to customise their system for particular franchisees: the name of the business, a banner, and a welcome message (which must be available in the languages in which the system's available). This information must be displayed appropriately in the header of the pages and the welcome page. Administrators must be allowed to change the previous data at runtime.
36. The system must be ready to be deployed to a pilot franchisee with the following data:
Name of business = "Cars for all",
Banner =
"https://www.3ds.com/uploads/tx_templavoila/cnbc-future-connected-cars-third-bann er-1920x524_05.jpg",
English welcome message = "Your place to buy or rent your best cars!"
Spanish welcome message = "Tu sitio para comprar y alquilar tus mejores coches".