- PROJECT -
Auctions

We want to develop a web application for auction management. The application must allow customers to sell items and to bid for buying them.

1.User registration

In order to propose an item for sale or to participate to an auction, a user must log into the application (with a login and a password). Users who do not have accounts can register by filling out multiple successive forms in order to provide login information (login, password), personal information (name, ...) and finally (for buyers) the delivery and billing information (address, bank account number, ...).

2. Sell articles

The users may submit items for sale. For each item, the seller must specify the name, the description, the starting price and one or more categories (used for search purposes). It also specifies the duration of the auction for the corresponding item and implicitly the end date for the auction (when no more bids are not possible on the article).
  The seller may withdraw from sale any submitted item but cannot change it before the auction deadline. Sellers may see all the information related to the items they sell.

3. Bidding on items

Users can search for items by name or by browsing categories and sub-categories. For each item one can see the related information (name, description, starting price, auction end date) and the value of the highest bid. Only auctions whose end date has not passed are visible.
  If the user is interested in an item, it can participate in the auction (it should be connected previously). If at the end (date) of the auction, its proposal is the highest, then the buyer has won the auction and can order the item.
  A buyer may withdraw its bids before or after the deadline but in the latter case its cancelled auctions counter is incremented (customers who reach a certain threshold cannot bid for a given period).
  The buyer can see at any time, all information related to its current and won auctions (ended or not, current value, ...) and to the items concerned (ordered, being delivered, ...).

4.Big savings

Every day, the application proposes some promotions (for example, free delivery or vouchers) for a certain number of items. Connected users may view all these promotions. Items concerned by the promotions change every day at midnight.

Orders and delivery

We must now develop the services that allow auction winners to order the articles. We should also develop the applications for handling shipping and billing requests.

5. Order items

A buyer can order items it won: the buyer should first specify the items to put in the shoppingcart, provide the information necessary for delivery and billing (the default addresses may be proposed by the application if the user had provided them at registration). When all the information is provided, the customer can confirm the order (and thus the billing and delivery requests).

6. Delivery and billing

Deliveries require certain treatments (check weight constraints, dimensions, etc.) before being taken into account and they are processed by another application. To avoid waiting too long at the time of the order, the auction application must use an asynchronous mechanism to send delivery requests.

Delivery requests can be seen in the delivery application and are validated regularly - the auction application is notified as soon as one of its requests has been taken into account (and updates consequently the state of the corresponding orders).

Billing works the same way. The customer confirms the payment, which is processed asynchronously (by the billing application), and waits for the payment confirmation. Update and logging operations can be possibly performed prior to receiving the final confirmation.