

Software Engineering Group 2 (2009-2010)
Software Requirements Specification

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Abstract

This document describes the Software Requirements Specifications for the software behind an online auction website. This project is part of the course on software engineering at the Vrije Universiteit Brussel.

Revision	Date	Comment
0.1	09/11/2009	First draft
0.2	13/11/2009	Updated after quality assurance
0.2.1	06/12/2009	Numerous changes and additions
0.2.2	14/12/2009	Expanded some of the use cases
0.3	14/12/2009	Updated after quality assurance

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Chapter 1

Introduction

1.1 Purpose

The purpose of this document is to present an overall description and listing of the functionality of the system behind an online auction website. This document is intended for users of the system including designers, testers, implementation unit and the employer.

1.2 Scope

Salesmen is the system behind an online auction website. An auction site is a web application where users can buy and sell objects. Users can place auctions or bid on auctions of other users.

There are also some social features such as sending messages to users, favourite sellers and a rating system for users.

1.3 Definition And Abbreviation

- *SRS*: Software Requirements Specification
- *UML*: Unified Modelling Language
- *XHTML*: Extensible HyperText Markup Language
- *HTML*: HyperText Markup Language
- *CSS*: Cascading Style Sheets
- *HTTPS*: Hypertext Transfer Protocol Secure
- *CAPTCHA*: Completely Automated Public Turing test to tell Computers and Humans Apart

1.4 Overview

Section 2 describes the general factors that affect the product and its requirements. This section does not state specific requirements. Instead, it provides a background for those requirements, which are defined in detail in Section 3 of the SRS, and makes them easier to understand.

Section 3 contains all of the software requirements, to a level of detail sufficient to enable designers to design the system to satisfy these requirements, and testers to test that the system satisfies these requirements.

Chapter 2

Overall Description

2.1 Product Perspective

The project will make use of a database and a web server that can be accessed with any web browser. There are six types of users on the system: guests, unconfirmed users, users, moderators, administrators and banned users. Before a user can make use of the full functionality of the site, the user has to register. The user will have to enter some personal information in a form in order to do this. A confirmation mail will then be sent to the unconfirmed user. This mail contains a link that the user has to follow in order to become a confirmed user.

Both guests and users can browse the different auctions, but only registered users can bid on auctions or place their own auctions. Browsing through auctions can be done by categories, tags or searching a specific auction.

Different auctions can be created such as English auctions[2] or silent auctions[3]. When a user places an auction, he or she also has to specify payment methods, transport methods, a minimum price, a duration for the auction and other general information about the auction. Some other extra's such as a picture can be added to the auction for a small fee.

A user can follow an auction. The followed auctions list is a list of auctions that interest the user but on which he or she may not have bid yet. Then when the user wants, he or she can bid on the auction by going to the page of the auction. A user can view all the auctions he or she has bid on in the active auctions list.

When a user has won an auction, he or she can pay for the item. This will be done through a transaction. The buyer can pay for the item by choosing one of the payment options the seller has specified. One of the supported methods is through salespal. This is a personal "bank account" on the site that each user has. Buyers can pay for items with the money on this account and sellers can receive money on their salespal account. Users can top up their salespal account, i.e. they transfer money to the account. When the transaction is done, buyers and sellers can rate the transaction. Each user will have a rating then which is based

on the ratings of their transactions.

Users can also contact other users through personal messages. Other sellers can also be added to a favourite sellers list, so that a user can easily check if a seller they like has new auctions. Auctions can also be recommended to users on the page of an auction or on the home page. Users also have a buyer's assistant. A user can set this up so that he or she can quickly see auctions that he or she is interested in.

Auctions also have a popularity meter that depends on the amount of users that view the auction page. A list of the ten most popular auctions is also displayed on the home page of the site: the hot deals.

Salesman pro is another functionality for which users can pay an extra monthly fee. This will give them reductions on the placing fees of auctions, remove advertising on the web site, ... Their auctions will also be higher in search results and will go faster on the hot deals list.

Moderators are responsible for managing the users and the auctions. Some functionalities they have are: banning a user, retracting a bid of a user, removing an auction, ...

Administrators are the users that manage the site.

2.2 User Characteristics

The users of the system will be users with different levels of technical expertise. Any user with a basic understanding of the internet and auctions should be able to make use of all the available functionality of the system.

There are six different types of users:

- **Guests:** These are visitors of the site which don't have an account yet or aren't logged in.
- **Unconfirmed users:** These are users that haven't confirmed their account by clicking the link in the confirmation mail they have received.
- **Users:** These are users of the site who have confirmed their account and are logged in.
- **Moderators:** These are users that manage the users and the auctions.
- **Administrators:** These are special users of the site who manage the site.
- **Banned users:** These are users that were removed by an administrator.

2.3 Interfaces

- The auction site is accessible from any operating system using a web browser and a connection to the web server running the Salesmen software

- No special hardware is required by the end-user
- The client browser must be W3C XHTML compatible
- Communication between the users and the auction site will be through HTTP communication using TCP/IP port 80
- If an error occurs during a request, the user should receive a clear error message. These errors should also be logged

2.3.1 User interfaces through forms

Account information

- Username (mandatory)
- Password (mandatory)
- Password verification (mandatory)
- E-mail (mandatory)
- E-mail verification (mandatory)
- Default Language (default English)
- CAPTCHA (mandatory)

Personal information

- First Name (mandatory)
- Last Name (mandatory)
- Address (optional)
- Phone number (optional)
- Date of birth (optional)

Registration form

- Account information (mandatory)
- Personal information (mandatory)

Login form

- Username (mandatory)
- Password (mandatory)

Basic search form

- Web search query (optional)

Advanced search form

- Include keyword (optional)
- Exclude keyword (optional)
- Search title (check, optional)
- Search description (check, optional)
- Category (list, optional)
- Tags (optional)
- Price range (optional)
- Duration range (optional)
- Auction type (check, optional)
- Payment method (check, optional)
- Transport cost range (optional)
- Seller name (optional)

Auctions with tag

- Tag name (optional)

Search user

- User search query (optional)

Place auction form

- Auction name (mandatory)
- Transport options (mandatory)
- Minimum price (mandatory)
- Duration (mandatory)
- Auction type (mandatory)
- Category (mandatory)
- Tags (optional)
- Picture (optional)
- Other information (optional)

Bidding form

- Maximum bid (mandatory)

Personal message form

- To (mandatory)
- Subject (optional)
- Message (mandatory)

Rate transaction form

- Rate description accuracy (list, mandatory)
- Rate shipping (list, mandatory)
- Rate contact with seller (list, mandatory)
- Message (optional)

Buyer's assistant entry form

- Advanced search form (mandatory)

Auction comment form

- Comment message (mandatory)

2.4 Product Functions

2.4.1 Guest

Guests can

- Browse through auctions by category
- Browse through auctions by tags
- Browse through auctions by search query
- Request an account
- Log in

2.4.2 Unconfirmed user

Unconfirmed users can

- Confirm account
- Request a new confirmation mail

2.4.3 User

Users can

- Browse through auctions by category
- Browse through auctions by tags
- Browse through auctions by search query
- Place auctions
- Bid on auctions
- Follow an auction
- View a transaction
- Pay for a transaction
- Rate a transaction
- View their placed, active, won and followed auctions
- Access and modify their account information
- Send a personal message to another user
- View and manage their personal messages
- Add a seller to their favourite sellers
- View and top up their salespal account
- Comment on an auction
- Log out

2.4.4 Administrator

Administrators can

- Manage the members
- Manage the auctions
- Retract bids from users

2.5 Constraints

- The system must work on Linux, and more specifically on Wilma
- The design should be modular, so extensions and replacements of modules will be simplified
- The web interface should be simple, attractive and standard (CSS, XHTML)
- The basic programming language must be Java
- Only open source software and libraries may be used

2.6 Apportioning of Requirements

In order to have a working prototype available at the end of the first iteration, some functionalities have different priorities.

- **Must have:** These functionalities should definitely be in the system, preferably after the first iteration.
- **Want to have:** These functionalities should be in the system, but could be dropped when there isn't enough time.
- **Nice to have:** These functionalities should only be implemented if all the 'must have' and 'want to have' requirements are implemented and there is still some time left.

Chapter 3

Specific Requirements

3.1 Requirements Control Plan

This section describes how the different requirements will be defined and how modifications to these requirements will be handled.

Each requirement will have a unique identifier which will be used for referencing in the source code, the design, ... Some requirements will only be described by a short description, while others will be described by a use case.

Whenever a requirement changes, the change will be noted at the description of the requirement. If a requirement is retired, this will also be noted at the requirement description, together with a reason why the requirement was retired.

3.2 Functional Requirements

3.2.1 Guest

3.2.1.1 Create a new account

Requirement ID 1

Priority Must have

Actor Guest

Preconditions User is not logged in

Description

A guest can create a new account so that he or she can use the full functionality of the site

Main path

1. Guest selects *register*
2. Guest fills in *registration form*
3. Guest submits form
4. System checks form and if valid saves it
5. System sends a confirmation mail

Exceptional paths

- 4a Username is already in use
 - 4a1 System informs the user that the username is already taken
 - 4a2 User returns to step 2, with the correct information still entered in the form field
- 4b E-mail address is already in use
 - 4b1 System informs the user that the e-mail address is already in use and asks if the user is sure he or she wants to use this e-mail address
 - 4b2 The account is created or the user returns to step 2, with the correct information still entered in the form field
- 4c Incorrect information in the registration form
 - 4c1 System informs the user that there is some incorrect information in the form
 - 4c2 User returns to step 2, with the correct information still entered in the form field
- 4d Incomplete form
 - 4d1 System informs the user that there are some fields in the form that are not filled in
 - 4d2 User returns to step 2, with the correct information still entered in the form field

Result An account is created for the user

3.2.1.2 Log in

Requirement ID 2

Priority Must have

Actor Guest

Preconditions The user is registered on the site, user is not logged in

Description

If a user is registered but not logged in, he or she can log in to use the full functionality of the site.

Main path

1. Guest fills in login form
2. Guest submits form
3. System checks if the form is valid and if so logs the user in
4. System redirect the user to the page he or she was on before the log in

Exceptional paths

3a Incorrect username and/or password

4a1 System informs the user that the he or she has entered an incorrect information

4a2 User returns to step 1

3b Incomplete login form

4a1 System informs the user that some information is missing

4a2 User returns to step 1

Result The user is logged in

3.2.2 Unconfirmed user

3.2.2.1 Confirm account

Requirement ID 3

Priority Want to have

Actor Unconfirmed user

Preconditions User is at confirmation page

Description

Unconfirmed users can confirm their account so they become regular users

Main path

1. Users follows link in the confirmation mail he or she has received
2. User selects confirm account on the confirmation page
- 3.

Exceptions None

Result The user becomes a regular user and can make use of all the functionality of the site

3.2.2.2 Request new confirmation mail

Requirement ID 4

Priority Want to have

Actor Unconfirmed user

Preconditions User is at control panel

Description Unconfirmed users can request a new confirmation mail

Main path

1. Users selects "send new confirmation mail"
2. System send a new confirmation mail to the user's e-mail address
- 3.

Exceptions None

Result The user receives a new confirmation mail

3.2.3 Guest and User**3.2.3.1 Search for an auction (basic)**

Requirement ID 5

Priority Must have

Actor User or Guest

Preconditions User is at the home page

Description Guests and members can search for auctions

Main path

1. Users enters a search term in the basic search field form
2. User submits the search form
3. System redirects the user to a page with all found auctions that match this search query

Exceptional paths

2a Incomplete search form

2a1 System informs the user that the search form is incomplete

2a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

3a No auctions found

3a1 System informs the user that no auctions were found for the search query

Result A page with the found auctions for the search term

3.2.3.2 Search for an auction (advanced)

Requirement ID 6

Priority Want to have

Actor User or Guest

Preconditions User is at the home page

Description Guests and members can do a more advanced search for an auction

Main path

1. Users selects *advanced search*
2. Users fills in the advanced search form
3. User submits the search form
4. System redirects the user to a page with all found auctions that match this search query

Exceptional paths

2a Incomplete search form

- 2a1 System informs the user that the search form is incomplete
- 2a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

3a No auctions found

- 3a1 System informs the user that no auctions were found for the search query

Result A page with the found auctions for the search query

3.2.3.3 View auctions of a certain category**Requirement ID 7**

Priority Must have

Actor User or Guest

Preconditions User is at the home page

Description Guests and users can view all the auctions of a certain category

Main path

1. Users select a category from the category list
2. System redirects the user to a page with all the auctions of the selected category

Exceptions None

Result A page displaying all the auctions of a certain category

3.2.3.4 View auctions with a certain tag

Requirement ID 8

Priority Want to have

Actor User or Guest

Preconditions User is at the home page

Description Guests and users can view all the auctions with a certain tag

Main path

1. Users fills in *view auctions with tag*
2. System redirects the user to a page with all the auctions with that tag

Exceptional paths

3a No auctions found

3a1 System informs the user that no auctions were found with that tag

Result A page displaying all the auctions with a certain tag

3.2.3.5 Change language

Requirement ID 9

Priority Must have

Actor User or Guest

Preconditions User is at any page of the site

Description Guests and users can change the language of the website to one of the available languages

Main path

1. Users opens *change language*
2. Users selects one of the available languages
3. System changes the language of the site to the chosen language

Exceptional paths

3a User selects the same language

3a1 System does nothing

Result The language of the site is changed

3.2.3.6 Change currency

Requirement ID 10

Priority Nice to have

Actor User or Guest

Preconditions User on an auction page

Description Guests and users can change the currency in which auctions are displayed

Main path

1. Users opens *change currency*
2. Users selects one of the available currencies
3. System changes the currency of the auction to the chosen currency

Exceptional paths

3a User selects the same currency

3a1 System does nothing

Result The currency for the auction is changed

3.2.4 User**3.2.4.1 Log out**

Requirement ID 11

Priority Must have

Actor User

Preconditions User is logged in

Description Members who are logged in can log out

Main path

1. User selects *log out*
2. System logs the user out
3. System redirects the user to the site's homepage

Exceptions None

Result The user is logged out

3.2.4.2 Search a user

Requirement ID 12

Priority Want to have

Actor User

Preconditions User is at advanced search page

Description Users can search for other users

Main path

1. User enters search term in search user field
2. User submits search
3. System redirects the user to page containing all users corresponding to that search query

Exceptional paths

2a Incomplete search form

2a1 System informs the user that the search form is incomplete

2a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

3a No users found

3a1 System informs the user that no users were found for the search query

Result A page displaying the found members for the search term

3.2.4.3 Place an auction

Requirement ID 13

Priority Must have

Actor User

Preconditions User is logged in. User is at home page or user home

Description Members of the site can create a new auction on which other members can bid

Main path

1. User selects *place auction*
2. User fills in *new auction form*
3. User submits the form
4. System checks the form and if valid creates the auction

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

Result Auction is placed

3.2.4.4 Place an English auction

Requirement ID 14

Priority Must have

Description

When a user places a new auction, he or she has the option to create an English auction

3.2.4.5 Place a silent auction

Requirement ID 15

Priority Want to have

Description

When a user places a new auction, he or she has the option to create an English auction

3.2.4.6 View placed auctions

Requirement ID 16

Priority Want to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view the auctions they have placed

Main path

1. User selects *placed auctions*
2. System redirects user to user's placed auctions page

Exceptional paths

2a User has no placed auctions

- 2a1 System displays a page to the user that says that the user has not placed any auctions

Result The user views the auctions he or she has placed

3.2.4.7 Bid on an auction

Requirement ID 17

Priority Must have

Actor User

Preconditions

1. User is logged in
2. User is on an auction page
3. Auction is not of the user

Description Members can bid on auctions of other members

Main path

1. User select *bid*
2. User fills in bidding form
3. User submits form
4. System checks form and if valid places the bid

Exceptions Wrong bid value in the form, incomplete form

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

4b1 System informs the user that the form is incorrect

4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

Result The bid is placed on the auction

3.2.4.8 View active auctions

Requirement ID 18

Priority Want to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view the auctions they have bid on

Main path

1. User selects *active auctions*
2. System redirects user to user's active auctions page

Exceptional paths

- 2a User has no active auctions
 - 2a1 System displays a page to the user that says that the user has no active auctions

Result The user can view the auctions he or she had bid on

3.2.4.9 View won auctions

Requirement ID 19

Priority Want to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view the auctions they have won

Main path

1. User selects *won auctions*
2. System redirects user to user's won auctions page

Exceptional paths

- 2a User has no won auctions
 - 2a1 System displays a page to the user that says that the user has no auctions that he or she has won

Result The user can view the auctions he or she has won

3.2.4.10 Modify account information

Requirement ID 20

Priority Must have

Actor User

Preconditions User is logged in. User is at control panel

Description Members can modify their account information

Main path

1. User selects *modify account*
2. User changes account information form
3. User submits the form
4. System checks the form and if valid, makes the changes

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

4b1 System informs the user that the form is incorrect

4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

Result The account information of the user is changed

3.2.4.11 Send a personal message

Requirement ID 21

Priority Nice to have

Actor User

Preconditions User is logged in. User is at user page

Description Users can send messages to other users

Main path

1. User selects *send message*
2. User fills in personal message form
3. User submits the form
4. System checks the form and if valid, sends the message

Exceptions Incorrect information, incomplete form, users send message to him or herself

Exceptional paths

4a Incomplete form

- 4a1 System informs the user that the form is incomplete
- 4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

- 4b1 System informs the user that the form is incorrect
- 4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

4c User send a message to him or herself

- 4c1 System informs the user that receiver is the same as the sender
- 4c2 System asks the user if he or she wants to send this message

Result A message is sent to another user

3.2.4.12 View personal messages

Requirement ID 22

Priority Nice to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view the personal messages

Main path

1. User selects *personal messages*
2. System redirects the user the user's personal messages page

Exceptions None

Result The user will view a page with his or her personal messages

3.2.4.13 Delete a personal message

Requirement ID 23

Priority Nice to have

Actor User

Preconditions User is logged in. User is at personal messages page

Description Users can delete personal messages they have received

Main path

1. User selects a message
2. User selects *delete message*
3. System deletes the message

Exceptions None

Result A message is deleted from the user's inbox

3.2.4.14 Follow an auction

Requirement ID 24

Priority Want to have

Actor User

Preconditions User is logged in. User is at auction page

Description Users can follow an auction, i.e. they put it in their following list

Main path

1. User selects *follow auction*
2. System adds auction to the users followed auctions list

Exceptions None

Result An auction is added to the user's follow auctions list

3.2.4.15 View followed auctions

Requirement ID 25

Priority Want to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view the auctions they are following

Main path

1. User selects *followed auctions*
2. System redirects user to user's followed auctions page

Exceptional paths

2a User has no followed auctions

- 2a1 System displays a page to the user that says that the user is not following any auctions at the moment

Result The user can view the auctions he or she is following

3.2.4.16 View Transaction

Requirement ID 26

Priority Want to have

Actor User

Preconditions User is logged in. User is at auction page. User bought the item.

Description Users can view the transaction of an item they bought

Main path

1. User selects *view transaction*
2. System forwards user to transaction page of auction

Exceptions None

Result The user views the transaction of the auction

3.2.4.17 Pay transaction

Requirement ID 27

Priority Want to have

Actor User

Preconditions User is logged in. User is at transaction page

Description Users can pay auctions on the transaction page of an auction

Main path

1. User selects *pay item*
2. User selects a payment method
3. User performs the payment
4. System notifies the seller that the auction is paid for

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

4b1 System informs the user that the form is incorrect

4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

Result The transaction is paid for

3.2.4.18 Mark as sent

Requirement ID 28

Priority Want to have

Actor User

Preconditions User is logged in. User is at transaction page

Description A seller can mark an item as sent. This is done on the transaction page of the auction.

Main path

1. User selects *mark as sent*
2. System saves the information and notifies the buyer

Exceptions None

Result The item of the transaction is marked as sent

3.2.4.19 Mark as received

Requirement ID 29

Priority Want to have

Actor User

Preconditions User is logged in. User is at transaction page

Description A buyer can mark an item as received. This is done on the transaction page of the auction.

Main path

1. User selects *mark as receives*
2. System saves the information and notifies the seller

Exceptions None

Result The item of the transaction is marked as received

3.2.4.20 Rate transaction

Requirement ID 30

Priority Want to have

Actor User

Preconditions User is logged in. User is at transaction page, user paid transaction

Description Users can send rate a transaction after it is paid

Main path

1. User selects *rate transaction*
2. User fills in rate transaction form
3. User submits the form
4. System checks the form and if valid, rates the transaction
5. System updates the ratings of the user

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

4b1 System informs the user that the form is incorrect

4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

Result The transaction is rated

3.2.4.21 Add seller to favourites

Requirement ID 31

Priority Nice to have

Actor User

Preconditions User is logged in. User is at user page

Description

Users can add a seller to their favourites so they can their auctions easily

Main path

1. User selects *add seller to favourites*
2. System adds the seller to the favourite seller list of the user

Exceptional paths

- 2a Seller is already in the user's favourite sellers list
 - 2a1 System does nothing

Result The seller is added to the favourite seller list of the user

3.2.4.22 View favourite sellers

Requirement ID 32

Priority Nice to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view his or her favourite sellers

Main path

1. User selects *favourite sellers*
2. System redirects user to user's favourite sellers page

Exceptional paths

- 2a User has no favourite sellers
 - 2a1 System displays a page to the user that says that the user has no favourite sellers

Result The user will view a page with his or her favourite sellers

3.2.4.23 Delete a favourite seller

Requirement ID 33

Priority Nice to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can remove a seller from his or her favourite sellers list

Main path

1. User selects a seller from the list
2. User selects *delete seller*
3. System removes the selected user from the list

Exceptions None

Result A seller is removed from user's favourite sellers list

3.2.4.24 View salespal

Requirement ID 34

Priority Want to have

Actor User

Preconditions User is logged in. User is at control panel

Description Users can view their own personal "bank account" on the site

Main path

1. User selects *view salespal*
2. System redirects the user to the user's salespal page

Exceptions None

Result The user is on his or her salespal page

3.2.4.25 Top up salespal

Requirement ID 35

Priority Want to have

Actor User

Preconditions User is logged in. User is at salespal page

Description Users can add more money on their salespal account

Main path

1. User selects *top up salespal*
2. Users fills in top up salespal form
3. System checks the form and if valid tops up the account

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

4b Incorrect form

4b1 System informs the user that the form is incorrect

4b1 System returns the user to the form with the previously filled in fields still in place and a notification next to the incorrect fields

Result The user tops up his or her salespal account

3.2.4.26 View recommended auctions

Requirement ID 36

Priority Nice to have

Actor User

Preconditions User is logged in. User is at control panel

Description

Users can view recommended auctions for him or her. This list is generated through tags and categories the user frequently uses

Main path

1. User selects *view recommendations*
2. System redirects user to user's recommended auctions page

Exceptions None

Result The user views a page with recommended auctions for the user

3.2.4.27 View buyer's assistant

Requirement ID 37

Priority Want to have

Actor User

Preconditions User is logged in. User is buyer's assistant home

Description A user can check the auctions the buyer's assistant has found for his or her preferences

3.2.4.28 Add buyer's assistant entry

Requirement ID 38

Priority Want to have

Actor User

Preconditions User is logged in. User is buyer's assistant home

Description Add a new entry to the buyer's assistant so that the assistant can suggest auctions for the user corresponding to this entry.

Main path

1. User selects *add entry*
2. User fills in *buyer's assistant entry* form
3. User submits the form
4. System checks the form and if valid adds a new entry to the buyer's assistant

Exceptional paths

4a Incomplete form

- 4a1 System informs the user that the form is incomplete
- 4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

Result An entry is added to the buyer's assistant

3.2.4.29 Comment on an auction

Requirement ID 39

Priority Want to have

Actor User

Preconditions User is logged in. User is at auction page

Description A user can comment on an auction. This comment can be viewed by anyone viewing the auction page

Main path

1. User selects *comment*
2. User fills in *auction comment* form
3. User submits the form
4. System checks the form and if valid adds a comment to the auction

Exceptional paths

4a Incomplete form

4a1 System informs the user that the form is incomplete

4a1 System returns the user to the form with the previously filled in fields still in place and a notification next to the field that needs to be filled in

Result A comment is added to the auction comments

3.2.4.30 View hot deals

Requirement ID 40

Priority Want to have

Description Users can view a list of the top ten most popular auctions

3.2.4.31 Sign up for salesmen pro

Requirement ID 41

Priority Want to have

Description Users can become a premium member of the site. They will get some extra's on the site. A monthly fee is required for this.

3.2.5 Moderators

3.2.5.1 Remove a user

Requirement ID 42

Priority Must have

Actor Moderator

Preconditions User is at control panel

Description

User selects *manage users* and selects a user from the users list. After the user is selected, *remove user* is selected.

Exceptions None

Result A user is removed from the system

3.2.5.2 Remove an auction

Requirement ID 43

Priority Must have

Actor Moderator

Preconditions User is at control panel

Description

User selects *manage auctions* and selects an auction from the auctions list. After the auction is selected, *manage auction* is selected.

Exceptions None

Result Auction is removed

3.2.5.3 Retract bid

Requirement ID 44

Priority Want to have

Description

An administrator can retract a bid from a user when that user has e.g. made a high bid because of a typo

3.2.6 Administrators

3.2.6.1 Modify default fees

Requirement ID 45

Priority Must have

Description

Administrators can modify the default values of fees

3.2.6.2 Modify default fees through graphical interface

Requirement ID 46

Priority Nice to have

Description

Administrators can modify the default values of fees through a graphical user interface

3.2.7 Security

3.2.7.1 Encrypted password

Requirement ID 47

Priority Must have

Description Password must be stored encrypted

3.2.7.2 CAPTCHA

Requirement ID 48

Priority Must have

Description When a user registers, he or she has to fill in a CAPTCHA

3.2.7.3 Limited login attempts

Requirement ID 49

Priority Must have

Description A guest may only try to log in with a wrong password a fixed number of times

3.2.7.4 Extra site for banned users

Requirement ID 50

Priority Nice to have

Description When a banned user visits the site, he or she will view a special site for banned users

3.2.7.5 Cookies

Requirement ID 51

Priority Want to have

Description Cookies can be created for the user to let the user log in automatically

3.2.8 Other

3.2.8.1 Basic e-mail notification

Requirement ID 52

Priority Want to have

Description User can receive an e-mail when he or she has won an auction, when the item is shipped, when an auction is paid for

3.2.8.2 Advanced e-mail notification

Requirement ID 53

Priority Nice to have

Description User can receive an e-mail when he or she is overbid, when an auction is almost done, with recommended auctions for the user [5].

3.3 Non-functional Requirements

3.3.1 Browser compatibility

Requirement ID 54

Priority Must have

Description The site should be fully compatible with the three most popular browsers. At the time of writing these are: Internet Explorer (version 7 or higher), Firefox (version 3 or higher) and Safari (version 4 or higher)[4].

3.3.2 Secure connection

Requirement ID 55

Priority Must have

Description Whenever sensitive transactions are made, the HTTPS protocol should be used.

3.3.3 Advertisements through Google AdWords

Requirement ID 56

Priority Must have

Description There should be space for advertisements from Google AdWord

3.3.4 Clean URLs

Requirement ID 57

Priority Want to have

Description URLs of auctions should be clean, i.e. they should be clearly readable

3.3.5 Search engine optimization

Requirement ID 58

Priority Want to have

Description The site should be optimized for search engines in order to get more and better traffic to the site.

3.4 Database Requirements

All data will be saved in the database. The database must always remain consistent. There will be many concurrent request for the database. A good database structure will be needed.

3.5 Design Constraints

1. The design must be object-oriented
2. Design diagrams must be made using UML

3.6 Software system attributes

3.6.1 Reliability

Errors in the code will be divided into 2 groups: *small errors* and *fundamental errors*.

Fundamental errors will be corrected within 48 hours after the detection of this error. Small errors (details) will be corrected within a week after the detection of these errors.

3.6.2 Security

- When a user want to recover his or her password, the site will generate a new password and send it to the user's e-mail.
- Communication of sensitive data should be encrypted (e.g. using https)
- Users should only be allowed to try to log in a limited number of times
- When a guests registers for an account, he or she has to fill in a CAPTCHA

3.7 Summary

3.7.1 Functional requirements

3.7.1.1 Must have

Name	ID	Category
Create a new account	1	Guest
Log in	2	Guest
Search for an auction (basic)	5	Guest, user
View auctions of a certain category	7	Guest, user
Change language	9	Guest, user
Log out	11	User
Place an auction	13	User
Place an English auction	14	User
Bid on an auction	17	User
Modify account information	20	User
Remove a user	42	Moderator
Remove an auction	43	Moderator
Modify default fees	45	Administrator
Encrypted password	47	Security
CAPTCHA	48	Security
Limited login attempts	49	Security

3.7.1.2 Want to have

Name	ID	Category
Confirm account	3	Unconfirmed user
Request new confirmation mail	4	Unconfirmed user
Search for an auction (advanced)	6	Guest, user
View auctions with a certain tag	8	Guest, user
Search a user	12	User
Place a silent auction	15	User
View placed auctions	16	User
View active auctions	18	User
View won auctions	19	User
Follow an auction	24	User
View followed auctions	25	User
View transaction	26	User
Pay transaction	27	User
Mark as sent	28	User
Mark as received	29	User
Rate transaction	30	User
View salespal	34	User
Top up salespal	35	User
View buyer's assistant	37	User
Add buyer's assistant entry	38	User
Comment on an auction	39	User
View hot deals	40	User
Sign up for salesmen pro	41	User
Retract bid	44	Moderator
Cookies	51	Security
Basic e-mail notification	52	Other

3.7.1.3 Nice to have

Name	ID	Category
Change currency	10	User, guest
Send a personal message	21	User
View personal messages	22	User
Delete a personal message	23	User
Add seller to favourites	31	User
View favourite sellers	32	User
Delete a favourite seller	33	User
View recommended auctions	36	User
Modify default fees through GUI	46	Administrator
Extra site for banned users	50	Security
Advanced e-mail notification	53	Other

3.7.2 Non-functional requirements

Priority	Name	ID
Must have	Browser Compatibility	54
	Secure connection	55
	Advertisements through Google AdWords	56
Want to have	Clean URLs	57
	Search engine optimization	58

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