



On-line auction case study

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Outline

- **Requirements**
- User Stories
- Acceptance Tests
- CRC cards
- Use Cases
- Class Diagram



Requirements

- Sothsties' Auction House wants a Web-based auction system for selling fine art items on the Internet.
- The application provides a server side access to catalogue and record the items on auction.
- The client can locally subscribe and participate to the auction from the web using a web browser.



Requirements (cont.)

The main system features are:

- Items on auction are characterized by a code, an image, a description, and a category (i.e. painting, print, silverware, etc.).
- Each item has an auction starting date and time, and an end date and time (auction interval).
- Items on auction are characterized by a status which specifies the starting price, the current price, the minimum bid increment, the time remaining before the end of the auction.
- The item features and its status are displayed in a specific item web page.
- Items on auction can be added, deleted and modified using an application local to the server.



Requirements (cont.)

- A Web site allows users to look at items on auction, navigating among them by through using various searching/sorting capabilities, for example, by category, ies, and through other kinds of search (keyword, cost, auction end date, etc).
- The Web site allows users to ask for and receive a user ID and password after subscribing for the auction by providing personal data.
- Bids can be placed only during the auction interval by registered users, and can only be one or more bid increment higher than the current bid.
- After the client has subscribed for the auction he/she can access to a personal page which takes track of all the items he/she is concurring to buy.
- After the auction end time, no more bids can be accepted, and the item is assigned to the user with highest bid.



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- *Requirements*
- **User Stories**
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User Story: Home Page

- **Title:** Home Page
- **Priority:** Must
- **Story Points:** 2
- **Risk Level:** Low
- **Description:**
 - The home page is the entry point to access the main services:
 - Register
 - My personal page
 - Browse
 - Help
 - The home page also shows a list of categories to simplify items searching.
 - The Home Page is referred by the main internet address of the auction site:
www.*****
- **Related Stories:**
- **Acceptance Tests:** [Home Page](#)



User Story: Registration

- **Title:** Registration
- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - The registration page allows user to provide his/her personal data and receive a user ID and a password.
 - The user ID and the password allow the user to access to his/her *personal page* and to take part to the auction.
- **Related Stories:** Registration Form, Personal Page

- **Acceptance Test:** [Software Engineering Registration and Registration form](#)



User Story: Registration Form

- **Title:** Registration Form
- **Priority:** Must
- **Story Points:** 1
- **Risk Level:** Low
- **Description:**
 - The registration page shows an empty form to fill by the user. The main voices of the form are:
 - First Name, Second Name, Birth Date, Address, SSN, Credit Card, Phone/Fax, Email, ID, Password, Confirm Password. It performs basic checks on entered data and provides user registration or an error message if the User ID and/or User SSN are already present in the system.
- **Related Stories:** Registration
- **Acceptance Tests:** Registration and Registration Form



User Story: Login

- **Title:** Login
- **Priority:** High
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - Every time the user tries to access to non-public areas (i.e. personal page, buying items, etc.) he/she is asked to provide
 - his/her personal ID and password. These are entered through a form. If user Id and password are correct, the user is logged in and is no more asked to login throughout the session. If not an error message is raised.
- **Related Stories:** Personal Page, Bid
- **Acceptance Tests:** Login I, Login II



User Story: Personal Page

- **Title:** Personal Page
- **Priority:** Must
- **Story Points:** 5
- **Risk Level:** High
- **Description:**
 - To access the personal page the user is asked to login providing his/her ID and password.
 - If the user is unregistered he/she is asked to register.
 - The personal page takes track of all the items (which item and its status) the user bought in the recent past and is presently trying to buy.
- **Related Stories:** Login
- **Acceptance Tests:** Personal Page, Login I



User Story: Browse

- **Title:** Browse
- **Priority:** Must
- **Story Points:** 7
- **Risk Level:** Mid
- **Description:**
 - The user can look at items on auction navigating among them according to different ordering criterions, i.e. by category, by price, by end date, by keywords or directly by code.
 - Browsing capabilities are accessible to registered and to unregistered users.
 - A list of categories as a shortcut to item browsing is also provided in the home page.
- **Related Stories:** Items
- **Acceptance Tests:** Browse



User Story: Item

- **Title:** Item
- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - Items on auction are characterized by certain features and by a status.
 - Main features are a code, an image, a description and a category (i.e. painting, print, silverware, etc.).
 - Item status specifies the starting price, the current price, the minimum bid increment and the auction interval. Items features and status are accessible through browsing capabilities.
- **Related Stories:** Browse, Item Page
- **Acceptance Tests:** Items



User Story: Auction Interval

- **Title:** Auction Interval
- **Priority:** Must
- **Story Points:** 2
- **Risk Level:** Mid
- **Description:**
 - Items are characterized by an auction interval made of a starting and an end date and time. User can concur to buy the item only during the auction interval. Once the auction interval has expired the item is assigned to the user who placed the highest bid.
- **Related Stories:**
- **Acceptance Tests:** [Auction Interval](#)



User Story: Item Page

- **Title:** Item Page
- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - Item features and status are shown in the item page.
 - Starting from item page the user can place a bid by pushing the PLACE YOUR BID button.
 - Only if the item is on auction the item page shows the PLACE YOUR BID button.
- **Related Stories:**

- **Acceptance Tests:** Software Engineering



User Story: Bid

- **Title:** Bid
- **Priority:** Must
- **Story Points:** 5
- **Risk Level:** High
- **Description:**
 - The user who makes a bid is asked to login if not already logged in. Once the user bid for a specific item is accepted by the system, the item is listed in the user personal page and the item status is updated. Bid can only be placed during the auction interval and it must be at least one minimum increment bid above the current price.
- **Related Stories:** Login, Personal Page, Auction Interval
- **Acceptance Tests:** Login II, Bid



User Story: Help

- **Title:** Help
- **Priority:** Should
- **Story Points:** 7
- **Risk Level:** Low
- **Description:**
 - The system must provide help tips to explain how to perform all possible actions, such as registering, searching items, making a bid, etc.
- **Related Stories:**
- **Acceptance Tests:** Help



User Story: Administrator

- **Title:** Administrator
- **Priority:** Must
- **Story Points:** 1
- **Risk Level:** Low
- **Description:**
 - The system administrator is the person who can access the full system functionality. The administrator is recognised by the system through a specific Administrator ID and Password.
- **Related Stories:** Administration Page, Administration Activities
- **Acceptance Tests:** Administrator and Administration Page



User Story: Administration Activities

- **Title:** Administration Activities

- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Low

- **Description:**
- The administrator is allowed to access items and user management functionalities. Items management functionalities are:
 - Adding new items
- Modifying items features and status
- Deleting items
- The administrator must be able to access users data according to different searching criterion (i.e. by name, by user ID, by address, etc).

- **Related Stories:** Administration Page

- **Acceptance Tests:** Administration Activities



User Story: Administration Page

- **Title:** Administration Page
- **Priority:** Must
- **Story Points:** 2
- **Risk Level:** Low
- **Description:**
 - The administrator owns his User ID and Password.
 - From the login page he/she can access the Administration page.
 - The administration page shows the administration menu to access all the administration activities.
- **Related Stories:** Administrator, Administration Activities
- **Acceptance Tests:** Administrator and Administration Page



User Story: Adding Items

- **Title:** Adding Items
- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - The Adding Items page provides a form to specify all the features of a new item.
- **Related Stories:**
- **Acceptance Tests:** Adding Items
Software Engineering



User Story: Editing Items

- **Title:** Editing Items
- **Priority:** Must
- **Story Points:** 3
- **Risk Level:** Mid
- **Description:**
 - The administrator can access and modify all items stored in the items database.
 - The administrator is allowed to change item features and status and to delete items.
- **Related Stories:**
- **Acceptance Tests:** Editing Items



User Story: Adding/Deleting Categories

- **Title:** Adding - Deleting Categories
- **Priority:** Must
- **Story Points:** 2
- **Risk Level:** Low
- **Description:**
 - The administrator is allowed to introduce and delete item categories.
- **Related Stories:**
- **Acceptance Tests:**



User Story: Checking Users

- **Title:** Checking Users
- **Priority:** Must
- **Story Points:** 2
- **Risk Level:** Low
- **Description:**
 - The administrator is allowed to access users database to check users personal data and status.
- **Related Stories:**
- **Acceptance Tests:** Checking Users



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- *Requirements*
- *User Stories*
- **Acceptance Tests**
- CRC cards
- Use Cases
- Class Diagram



Acceptance test: Home Page

Title: Home Page

Description:

Clicking on the main menu voices the user gets the access to the specific main services.

The selection of a category provide the list of all items under that category.

Related Stories: [Home Page](#)



Acceptance test: Registration and Registration Form

- **Title:** Registration and Registration Form
- **Description:**
- A new user properly fills the registration form and get his/her personal User ID and Password.
- Choosing an existing User ID and/or User SSN raises up an error message.

- **Related Stories:** [Software Engineering Registration Form](#)



Acceptance test: Login 1

- **Title:** Login 1
- **Description:**
 - The user tries to get his personal page and he/she is asked to provide his/her User ID and Password if not already logged.
 - Providing the right User ID and Password gives the access to the personal page.
 - Providing a wrong User ID or Password rises an error message.
- **Related Stories:** [Login](#), [Personal Page](#)



Acceptance test: Login 2

- **Title:** Login 2
- **Description:**
 - The user tries to place a bid for a specific item on auction and he/she is asked to provide his/her User ID and Password.
 - Providing the right User ID and Password allows the user to make his/her bid.
 - Providing a wrong User ID or Password raises an error message.
- **Related Stories:** [Login](#), [Bid](#)



Acceptance test: Personal Page

- **Title:** Personal Page
- **Description:**
- Providing his/her User ID and Password the user may access his/her personal page.
- The personal page shows the list of all the items the user bought in the recent past and is presently trying to buy.



Acceptance test: Browse

- **Title:** Browse

- **Description:**
- By selecting a specific ordering/selecting criterion the user is shown the list of desired items ordered according to that criterion.
- For instance:
 - the user selects Browse By Category and gets the list of all categories. Selecting a category he/she gets the list of all items of that category.
- - the user selects Browse Items on Auction and get the list of items on auction

- **Related Stories:** [Browse](#)



Acceptance test: Item

➤ **Title:** Item

➤ **Description:**

- User accesses an item by the browse capabilities.
- The selected item is characterized by its features (code, image, description, category) and by its status (starting price, current price, minimum bid increment, auction interval)

➤ **Related Stories:** [Items](#), [Item Page](#)



Acceptance test: Auction Interval

- **Title:** Auction Interval
- **Description:**
- A registered user can place a bid only during the auction interval.
- **Related Stories:** [Auction Interval](#)



Acceptance test: Bid

- **Title:** Bid
- **Description:**
 - Pushing the PLACE YOUR BID button the user is asked to login, if not already logged.
 - After successful login, the user is allowed to place his/her bid.
 - After placing the bid the item is listed in the user personal page.
- **Related Stories:** [Bid](#)



Acceptance test: Administrator and Administration Page

➤ **Title:** Administrator and Administration Page

➤ **Description:**

➤ Providing Administrator User ID and Password the system allows access to the administration page.

➤ **Related Stories:** [Administrator](#), [Administration Page](#)



Acceptance test: Adding Items

- **Title:** Adding Items
- **Description:**
- The administrator fills the Add Item Form and pushes the ADD button. The new item is introduced in the item database and becomes accessible by browsing capabilities.

- **Related Stories:** [Adding Items](#)



Acceptance test: Editing Items

➤ **Title:** Editing Items

➤ **Description:**

The administrator accesses an item stored in the items database and change some of its features and its status.

➤ **Related Stories:** [Editing Items](#)



Acceptance test: Checking Users

➤ **Title:** Checking Users

➤ **Description:**

The administrator accesses the user database and checks the status of some users.

➤ **Related Stories:** [Checking Users](#)



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- *Requirements*
- *User Stories*
- *Acceptance Tests*
- **CRC cards**
- **Class Diagram**

CRC cards: Auction & Item

<u>Class Name:</u> Auction	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows its administrator	Administrator
Knows its starting date and its ending date	
Knows its own items	Item

<u>Class Name:</u> Item	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows its features: Code Image Description Category	
Knows its status: Starting price Current price	Category
Know the last bid	
Knows its Bid increment Knows the auction which belongs to.	Bid

CRC cards: Category & Bid

<u>Class Name:</u> Category	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows its name	
Collects similar items	Item

<u>Class Name:</u> Bid	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows the referring item	Item
Has minimum increment	
Knows the last offering user	User
Knows the last offered price	
Has date and time	

CRC cards: Person & User

<u>Class Name:</u> Person	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows his/her: Name Address Credit Card ID Phone-Fax Email	

<u>Class Name:</u> Registered Person (User)	
subclass of Person	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows his/her: Name Address Credit Card ID SSN Phone-Fax Email Owns a User ID and a Password Can place bid	Bid

CRC cards: Administrator & CPP

<u>Class Name:</u> Administrator subclass of Person	
<u>Responsibilities</u>	<u>Collaborations</u>
Owns his personal User Id and Password	
Can add, modify and delete Items on auction	Item
Can access users (Registered People) data	Registered Person (User)

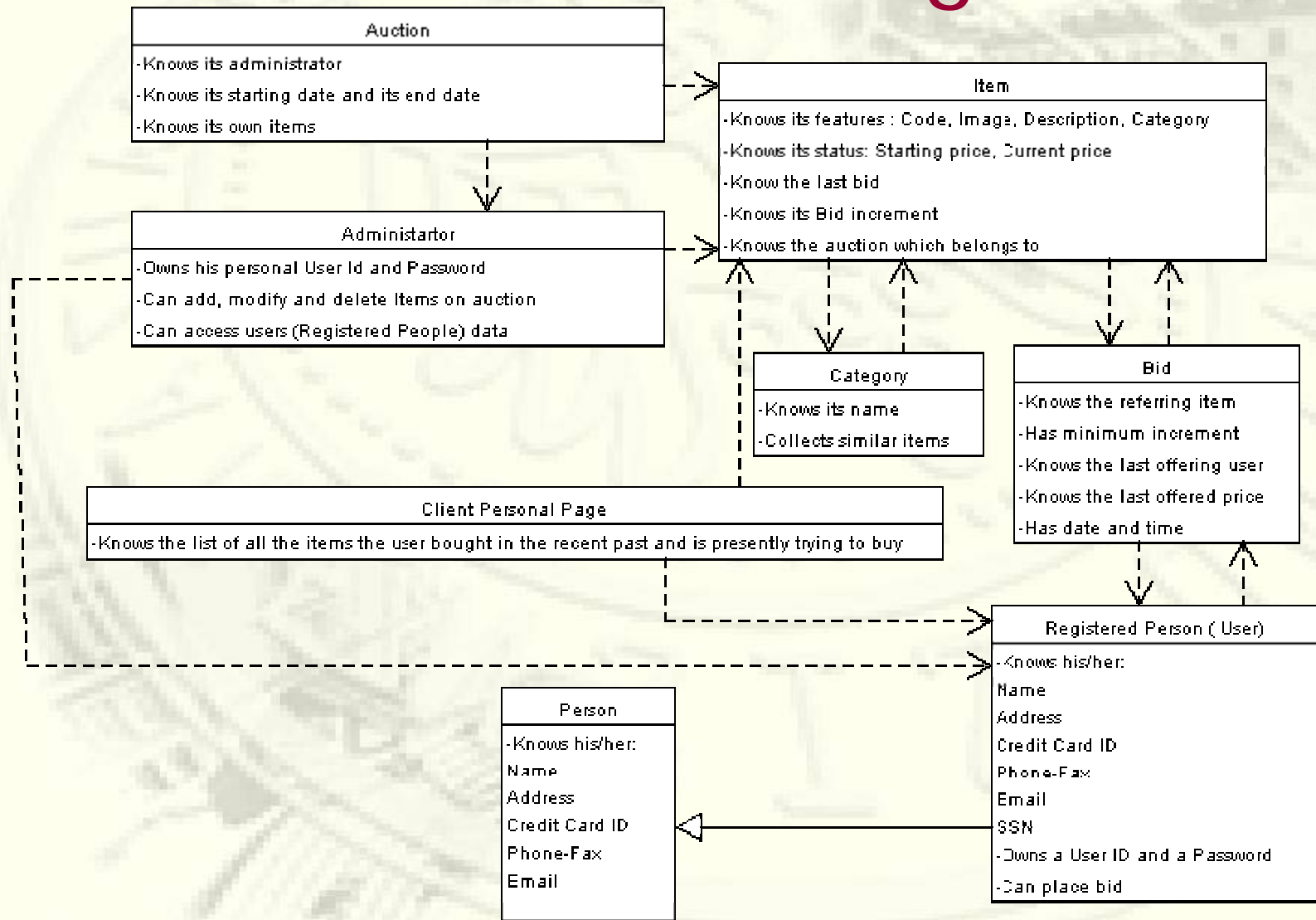
<u>Class Name:</u> Client Personal Page	
<u>Responsibilities</u>	<u>Collaborations</u>
Knows the list of all the items the user bought in the recent past and is presently trying to buy	Item Registered Person

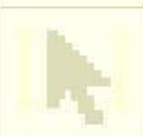


Outline

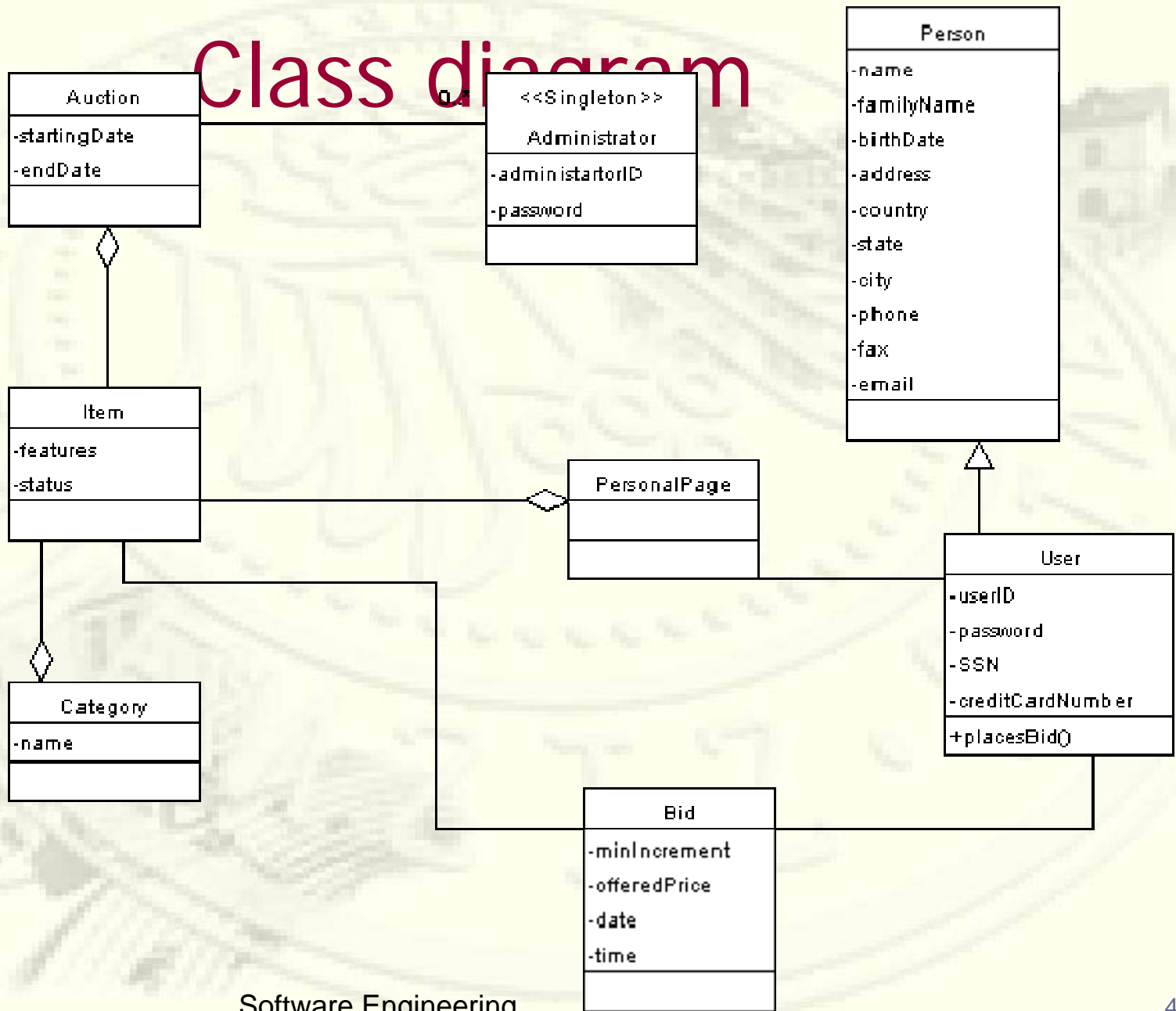
- *Requirements*
- *User Stories*
- *Acceptance Tests*
- *CRC cards*
- **UML Diagrams**

Collaboration diagram





Class diagram





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- *Requirements*
- *User Stories*
- *Acceptance Tests*
- *CRC cards*
- *UML Diagrams*
- **Release Planning**

1 Story Point = 1 ideal working day = 8 ideal working hours

Iteration	Stories	SP
1 st Iteration	Home Page Registration Login Items Items Page Personal Page Bid Auction Interval	2 4 3 5 3 5 5 2
	Total SP	29
2 nd Iteration	Browse Administrator Administration Activities Checking Users Adding Items Editing Items Adding-Deleting Categories Help	7 3 3 2 3 3 2 7
	Total SP	30
3 rd Iteration	
4 th Iteration	
5 th Iteration	