

**Lab Sheet- 1 (Questions on Requirement Analysis)**

**Consider the problem statement for an "Online Auction System" to be developed:**

1. New users can register to the system through an online process.
2. By registering a user agrees to abide by different pre-defined terms and conditions as specified by the system.
3. Any registered user can access the different features of the system authorized to him/her after he authenticates himself through the login screen.
4. An authenticated user can put items in the system for auction.
5. Authenticated users can place a bid for an item.
6. Once the auction is over, the item will be sold to the user placing the maximum bid.
7. Payments are to be made by third-party payment services, which, of course, are guaranteed to be secure.
8. The user selling the item will be responsible for its shipping.
9. If the seller thinks he's getting a good price, he can, however, sell the item at any point in time to the maximum bidder available.

**Identification of functional requirements**

The above problem statement gives a brief description of a detailed description of E-auction system. The requirement specification clarifies the interfaces of the system, the services, and constraints of the system, functionality of the system, and feature of the system.

Three types of users will be there in the system

1. Admin
  2. Seller
  3. Bidder
1. **New user registration:** Any interested Seller or Bidder has to register him/herself with the E-auction System. On successful registration, a user ID and password would be provided to the member. He/She has to use these credentials for any future transaction in EAS.
  2. **Search item:** Any member of EAS can avail of this facility to check whether any particular item/product is present on the platform. It could be searched by its:
    - Product's name
    - Seller's name
    - Through Product Category
  3. **User login:** A registered Seller/Bidder can log in to the system by providing his credentials as set by him/her while registering. After successful login, the "Home" page for the user is shown from where he can access the different functionalities of EAS.

For Seller – Upload product, Manage Bid, etc.

For Bidder – Search Product, View Product, Manage Bid, Payment Gateway

Any USER ID not registered with OAS cannot access the "Home" page, a login failure message would be shown to him, and the login dialog would appear again. This same thing happens when any registered user types in his password wrong. However, if an incorrect password has been provided for three-time consecutively, the security question for the user (specified while registering) with an input box to answer it is also shown. If the user can answer the security question correctly, a new password would be sent to his email address. In case the user fails to answer the security question correctly, his EAS account would be blocked. He/She needs to contact the administrator to make it

active again.

4. **Bid:** Any registered bidder can bid on an item against his/her account provided that:
  - The item is available for bidding i.e. not sold out
  - The seller has not unlisted the item
  - The current user has not used the maximum number of bids that canIf the above conditions are met, the bid gets confirmed. Once a bid has been done, the user account is updated to reflect the same.
5. **Upload Product (Seller):** Any Seller can upload the product and the product detail after logging in. After that, he can set a product initial bidding price for the bidders. After setting this the product will be available for bidders to buy through bidding.
6. **Advertise an item for an auction (seller):** Any registered member can advertise their product on-site for auction by providing a minimum bid amount for the product and the maximum duration of the auction.
7. **Manage Product (Seller):** If a seller is satisfied with the current highest bid, the seller can close the auction at that time, and the person with the highest bid at that time wins the auction. If the seller doesn't close the auction, it automatically gets closed after the expiry of the auction duration.
8. **Manage Bid:**
  - **Modify an auction bid (buyer):** Any registered member who has already placed a bid for a product can update their bid (increase the amount). The system will allow the modification if the new bid amount is more significant than the current maximum bid.
  - **Cancel an auction bid (buyer):** Any registered member who has already placed a bid for a product can cancel the bid as long as the person's bid is not the current highest bid.
9. **Shipment Tracking:** The seller has to be responsible for the delivery of the product after the bidding session got over and update the tracking link on this page. Both seller and buyer can see the real-time location of the product and estimated delivery date.
10. **Payment Gateway:** After the bidding session got over and the seller is satisfied with the final price of the product, the bidder has to make the payment through the gateway. The payment gateway will be linked with a secure third-party payment service.
11. **Purchase history:** The system will allow the user to view their purchase history.
12. For Admin there should be:
  - Admin can manage users and products.
  - Admin can send the notifications to the seller and bidder.
  - Admin can manage to bid.
  - Admin can generate the whole system work report.

Having identified the (major) functional requirements, we assign an identifier to each of them for future reference and verification. The following table shows the list:

#	Requirement	Priority
R1	New user registration	High
R2	User login	High
R3	Search Items	High
R4	Advertise an item for an auction	high
R5	End an auction	medium
R6	Place bid for an item	high

R7	Modify a bid	medium
R8	Purchase History	high
R9	Cancel a bid	low

## Identification of non-functional requirements

Having talked about functional requirements, let's try to identify a few non-functional requirements.

### 1. Performance Requirements:

- This system should remain accessible 24x7
- The system altogether at any given time should handle the maximum traffic

### 2. Security Requirements:

- This system should be accessible only by registered users
- The database should not store any password in plain text -- a hashed value has to be stored

### 3. Software Quality Attributes

- Software should not hang or freeze during the payment procedure
- Max bidding value at the current time for each product should be highlighted both for seller and bidder
- Use CDN for media files to speed up access time

### 4. Database Requirements

- Only the highest 10 bids will be stored, the rest will be deleted in real-time to increase database efficiency
- No SQL database would be used since categories of products, sellers, and buyers are wide-ranged.
- More frequently, hit pages will be cached in the server

### 5. Design Constraints:

- The software has to be developed as a web application, which should work with Firefox 5, Internet Explorer 8, Google Chrome 12, Opera 10
- The site should be responsive and lightweight
- The system should be developed using HTML