1. **Sale Items:**

- Functionality:

- Items can be sold via listed price or auction.

- Unique identifiers assigned to each item.

- Sellers provide short descriptions and set reserve prices for auctioned items.

- Location specified for each item.

- Clarifications:

- Ensure clarity on the process of listing items for sale, including the auction mechanism and reserve price functionality.

- Extensions:

- Integration of image uploads for item listings to enhance user experience.

2. **Categories:**

- Functionality:

- Items categorized using a hierarchical tree structure.

- Descriptive names for each category node.

- Clarifications:

- Define the process for creating and managing categories, including how items are assigned to categories.

- Extensions:

- Implementation of a dynamic category system allowing for easy addition and modification of categories.

3. **Suppliers:**

- Functionality:

- Database maintains information about all suppliers.

- Information includes company details, contact information, and other relevant data.

- Clarifications:

- Specify the process for adding and updating supplier information.

- Extensions:

- Integration of supplier rating system based on the quality of products and services.

4. **Registered Users:**

- Functionality:

- Users register to sell or bid.

- Detailed user information collected including contact details and payment information.

- Clarifications:

- Define the registration process, including account verification and security measures.

- Extensions:

- Implementation of user authentication methods such as two-factor authentication for enhanced security.

5. **Rating:**

- Functionality:

- Users can rate and comment on other users' behavior to mitigate fraud.

- Clarifications:

- Specify how ratings influence user interactions and decisions within the platform.

- Extensions:

- Development of algorithms to detect and address fraudulent activities based on user ratings.

6. **Browsing and Searching:**

- Functionality:

- Users can browse items by navigating the category tree and search for items using keywords.

- Clarifications:

- Describe the browsing and searching interfaces and their integration with the category system.

- Extensions:

- Implementation of advanced search filters to refine search results based on user preferences.

7. **Sale and Bidding:**

- Functionality:

- Users can purchase items at listed prices or place bids on auctioned items.

- Clarifications:

- Outline the sales and bidding processes, including payment handling and transaction management.

- Extensions:

- Integration of real-time bidding system with bid notifications for users.

8. **Order and Sale Reports:**

- Functionality:

- Periodic reports generated summarizing ordering and sales information based on item categories.

- Clarifications:

- Define the frequency and format of generated reports and their accessibility to users.

- Extensions:

- Customization options for users to generate personalized reports based on specific criteria.

9. **Delivery:**

- Functionality:

- Mechanism ensuring successful payments for sellers and product receipt for buyers.

- Clarifications:

- Specify the logistics and tracking system for item delivery and receipt confirmation.

- Extensions:

- Integration of third-party shipping services for streamlined delivery management.

10. **Extensions:**

- Development of additional features beyond the basic requirements to enhance user experience and platform functionality.

- Examples include:

- Social media integration for user engagement.

- Customer support chatbot for instant assistance.

- Loyalty program for incentivizing user activity.

Example Product: Smartwatch

Attributes:

Product ID

Product Name

Description

Price

Supplier ID (Foreign Key)

Category ID (Foreign Key)

Image URL

* **Product Entity:**
  + Represents individual products available for sale.
  + Attributes include ProductID, Name, Description, Price, ImageURL, and Category and Supplier IDs, Rating, WishList.
* **Category Entity:**
  + Represents product categories.
  + Attributes include CategoryID and Name, All Projects.
* **Supplier Entity:**
  + Represents suppliers providing products.
  + Attributes include SupplierID, Name, Address, License&Recommendation, Phone Number, Email, and Rating.
* **Relationships:**
  + Each Product belongs to one Category and one Supplier, so the one-to-many relationships.
  + Each Category can have multiple Products.
  + Each Supplier can supply multiple Products.

**Example Instance:**

Let's say we have a Smartwatch product:

* **ProductID:** 001
* **Name:** Apple Watch 7
* **Description:** Advanced smartwatch with health monitoring features.
* **Price:** $199.99
* **ImageURL:** example.com/images/smartwatch.jpg
* **SupplierID:** 001 (Supplier ABC)
* **CategoryID:** 001 (Wearable Technologies)
* **Rating:** 4.5/5
* **WishList**
* **Characteristics**