Al-Azhar University – Gaza

Faculty of Engineering & IT Technology

Software Requirements Engineering

ITSE3304

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Used Store

Description Software Project:

A specialized web store for buying and selling used products from individuals, providing a safe and reliable environment for individuals wishing to sell or buy quality products at prices lower than the market. The store seeks to facilitate the process of displaying used products and their access to those interested in purchasing and allows communication between the seller and the buyer.

Stakeholders:

1- Sellers: Primary users who display and sell used items and provide accurate descriptions of their products.

2- Buyers: Primary users who view displayed products, communicate with sellers, and purchase products.

3- Managers: Responsible for managing and maintaining the store, monitoring transactions, managing technical support, and ensuring compliance with policies.

Functional Requirements:

1. **Sellers**
    1. FR1: The seller shall be able to create a new account using an email and password.
    2. FR2: The seller shall be able to log in and out of his account.
    3. FR3: The seller shall be able to add a new product with the following details: Product name, Product description, Product category, Product images, Product price. Product condition (new, used, in good condition, etc.).
    4. FR4: The seller shall be able to edit or delete the products he has added.
    5. FR5: The seller shall be able to interact with buyers through internal messages or secure communication channels.

6. FR6: The seller shall be able to view the list of products he has displayed and track the status of his sales.
7. FR7: The seller shall be able to receive notifications regarding buyer inquiries.

2. Buyers

8. FR8: The buyer shall be able to create a new account using an email and password.
9. FR9: Buyer shall be able to log in and out of their account.

10. FR10: Buyer shall be able to search for products using: Product Name, Category, Price Range, Product Condition.
11. FR11: Buyer shall be able to browse products based on different categories.
12. FR12: Buyer shall be able to view product details (description, images, price, condition, seller details).
13. FR13: Buyer shall be able to communicate with seller through internal messages to inquire about products.
14. FR14: Buyer shall be able to add products to favorites list.
15. FR15: Buyer shall be able to complete a purchase through secure payment options.
16. FR16: Buyer shall be able to provide reviews or ratings for sellers.

3. Managers

17. FR17: The manager shall be able to access a control panel to manage the system.
18. FR18: The manager shall be able to view the list of users (sellers and buyers) and manage their accounts (cancel, edit, suspend).

19. FR19: The manager shall be able to moderate and remove added products if they violate platform policies.
20. FR20: The manager shall be able to monitor messages and interactions between users to ensure that no violations occur.
21. FR21: The manager shall be able to add, edit or remove major product categories.
22. FR22: The manager shall be able to receive notifications about any suspicious activity or complaints made by users.
23. FR23: The manager shall be able to generate periodic performance reports, such as: number of new users, sales volume, most popular activities.

Non-Functional Requirements:

1. Performance

   The system should be able to process 1000 searches per minute without noticeable delay.
   The system should respond to any request in less than 2 seconds on average.
   The system should support uploading images up to 10MB per image without impacting performance.

2. Security

   User data (such as passwords and personal information) should be encrypted using strong encryption algorithms (such as AES-256).
   All system communications should be over HTTPS to ensure data security during transmission.
   A 2FA login system should be available to enhance account protection.
   Unusual activity (such as repeated login attempts) should be monitored and alerts sent to management and users.

3. Availability

The system should be available for operation 99.9% of the time per month (Uptime).

System maintenance should be scheduled during low usage times to minimize impact on users.

4. Usability

The interface design should be simple and easy to use for all age groups.

The system should support at least two languages (for example, Arabic and English).

The user should be able to add, modify or delete products from his account easily.

The technical support team should be trained to help users solve problems within less than 10 minutes of submitting the request.

5. Scalability

The system should support an increase in the number of registered users at a rate of 5,000 new users per month without impacting performance.

The system should be easily scalable to include new markets or additional languages.

6. Maintenance

The system should be designed in a way that enables the development team to make updates or corrections within a period not exceeding 24 hours.

All software codes and technical structure of the system should be documented to ensure ease of maintenance and future development.

Prioritise and verify the requirements:

No.	Requirements	Must Have	Should Have	Could Have	Won't Have
1	The seller shall be able to create a new account using an email and password	✓			
2	The seller shall be able to log in and out of their account	✓			
3	The seller shall be able to add a new product with details	✓			
4	The seller shall be able to edit or delete the products they have added	✓			
5	The seller shall be able to interact with buyers through secure communication	✓			
6	The buyer shall be able to create a new account using an email and password	✓			
7	The buyer shall be able to log in and out of their account	✓			
8	The buyer shall be able to search for products using filters such as name, category, and price range	✓			
9	The buyer shall be able to browse products based on different categories	✓			
10	The buyer shall be able to view product details such as description, images, price, and condition	✓			
11	The buyer shall be able to complete a purchase through secure payment options	✓			
12	The manager shall be able to access a control panel to manage the system	✓			
13	The manager shall be able to view and manage user accounts	✓			
14	The manager shall be able to moderate and remove added products if they violate platform policies	✓			
15	The manager shall be able to generate periodic performance reports	✓			
16	The buyer shall be able to add products to their favorites list		✓		
17	The buyer shall be able to provide reviews or ratings for sellers		✓		
18	The system shall support multilingual features (e.g., Arabic and English)		✓		

19	The manager shall be able to monitor messages and interactions between users		✓		
20	The seller shall be able to view the list of products they have displayed and track their sales status		✓		
21	The system shall support tracking features for purchases			✓	
22	The system shall support product comparison features			✓	
23	The system shall support AI-based product recommendations				✓
24	The system shall integrate with social media for login				✓

Priority Matrix for Verified and High-Priority Requirements:

No.	Requirements
1	The seller shall be able to create a new account using an email and password
2	The seller shall be able to log in and out of their account
3	The seller shall be able to add a new product with details
4	The seller shall be able to edit or delete the products they have added
5	The seller shall be able to interact with buyers through secure communication
6	The buyer shall be able to create a new account using an email and password
7	The buyer shall be able to log in and out of their account
8	The buyer shall be able to search for products using filters such as name, category, and price range
9	The buyer shall be able to browse products based on different categories
10	The buyer shall be able to view product details such as description, images, price, and condition
11	The buyer shall be able to complete a purchase through secure payment options
12	The manager shall be able to access a control panel to manage the system
13	The manager shall be able to view and manage user accounts
14	The manager shall be able to moderate and remove added products if they violate platform policies
15	The manager shall be able to generate periodic performance reports

Use Case Descriptions:

Add New Product:

	Description
ID	UC-S1
RQ	3
Actor	Seller
Description	The system shall allow sellers to add a new product with all necessary details.
Precondition	Seller is logged in.
Basic Flow	- Seller navigates to "Add Product" page. - Seller enters product name (text). - Seller uploads product images (image files). - Seller provides a product description (text). - Seller selects product category (dropdown). - Seller sets a price (number). - Seller selects product condition (dropdown). - Seller clicks "Submit."
Alternative Flow	- If required fields are missing, the system displays an error message.
Postcondition	The product is added and visible in the seller's product list.

Edit Product:

	Description
ID	UC-S2
RQ	4
Actor	Seller
Description	The system shall allow sellers to edit the details of their products.
Precondition	Seller is logged in and has products listed.
Basic Flow	- Seller navigates to "My Products." - Seller selects a product to edit. - Seller updates the desired fields (name, description, price, etc.). - Seller clicks "Save Changes."
Alternative Flow	- If no changes are made, the system does not update the product.
Postcondition	The product details are updated.

Delete Product:

	Description
ID	UC-S3
RQ	4
Actor	Seller
Description	The system shall allow sellers to delete a product they have listed.
Precondition	Seller is logged in and has products listed.
Basic Flow	- Seller navigates to "My Products." - Seller selects a product to delete. - Seller clicks "Delete" and confirms the action.
Alternative Flow	- If the product is in an active transaction, the system prevents deletion.
Postcondition	The product is removed from the seller's list.

View Sales Reports:

	Description
ID	UC-S4
RQ	6
Actor	Seller
Description	The system shall allow sellers to view their sales performance.
Precondition	Seller is logged in.
Basic Flow	- Seller navigates to "Sales Reports." - Seller selects a date range. - Seller views total sales, most sold products, and revenue.
Alternative Flow	- If no sales data is available, the system shows "No data found."
Postcondition	Seller sees a summary of sales data.

Respond to Buyer Messages:

	Description
ID	UC-S5
RQ	5
Actor	Seller
Description	The system shall allow sellers to respond to buyer inquiries.
Precondition	Seller is logged in and has received messages.
Basic Flow	- Seller navigates to "Messages." - Seller selects a message thread. - Seller writes a reply and clicks "Send."
Alternative Flow	- If the seller does not respond within a set time, the system sends an automatic reminder.
Postcondition	The buyer receives the seller's response.

Search for Products:

	Description
ID	UC-B1
RQ	8
Actor	Buyer
Description	The system shall allow buyers to search for products using various filters.
Precondition	Buyer is logged in.
Basic Flow	- Buyer navigates to "Search." - Buyer enters search keywords (optional). - Buyer applies filters. - Buyer clicks "Search."
Alternative Flow	- If no products match the criteria, the system shows "No results found."
Postcondition	The buyer sees a list of matching products.

View Product Details:

	Description
ID	UC-B2
RQ	10
Actor	Buyer
Description	The system shall allow buyers to view detailed information about a product.
Precondition	Buyer is logged in and has accessed a product listing.
Basic Flow	- Buyer clicks on a product from the search results. - Buyer views details such as images, description, and price.
Alternative Flow	- If the product is unavailable, the system shows "Product not available."
Postcondition	The buyer views the product details.

Add to Favorites:

	Description
ID	UC-B3
RQ	16
Actor	Buyer
Description	The system shall allow buyers to save products to their favorites list.
Precondition	Buyer is logged in.
Basic Flow	- Buyer clicks "Add to Favorites" on a product.
Alternative Flow	- If the product is already in the favorites list, the system shows "Already added."
Postcondition	The product is saved in the buyer's favorites list.

Send Inquiry to Seller:

	Description
ID	UC-B4
RQ	13
Actor	Buyer
Description	The system shall allow buyers to send questions to the seller about a product.
Precondition	Buyer is logged in and has accessed a product listing.
Basic Flow	- Buyer clicks "Contact Seller." - Buyer writes a message and clicks "Send."
Alternative Flow	- If the buyer does not write a message, the system does not allow submission.
Postcondition	The seller receives the inquiry.

Complete a Purchase:

	Description
ID	UC-B5
RQ	11
Actor	Buyer
Description	The system shall allow buyers to purchase products securely.
Precondition	Buyer is logged in and has selected a product to buy.
Basic Flow	- Buyer clicks "Buy Now." - Buyer selects a payment method. - Buyer confirms the purchase.
Alternative Flow	- If payment fails, the system shows an error message.
Postcondition	The purchase is completed, and the buyer receives confirmation.

Manage User Accounts:

	Description
ID	UC-M1
RQ	18
Actor	Manager
Description	The system shall allow managers to view and manage user accounts.
Precondition	Manager is logged in.
Basic Flow	- Manager navigates to "User Management." - Manager views the list of users. - Manager selects a user and modifies details.
Alternative Flow	- If the user cannot be modified, the system shows an error message.
Postcondition	User account is updated or deleted.

Moderate Product Listings:

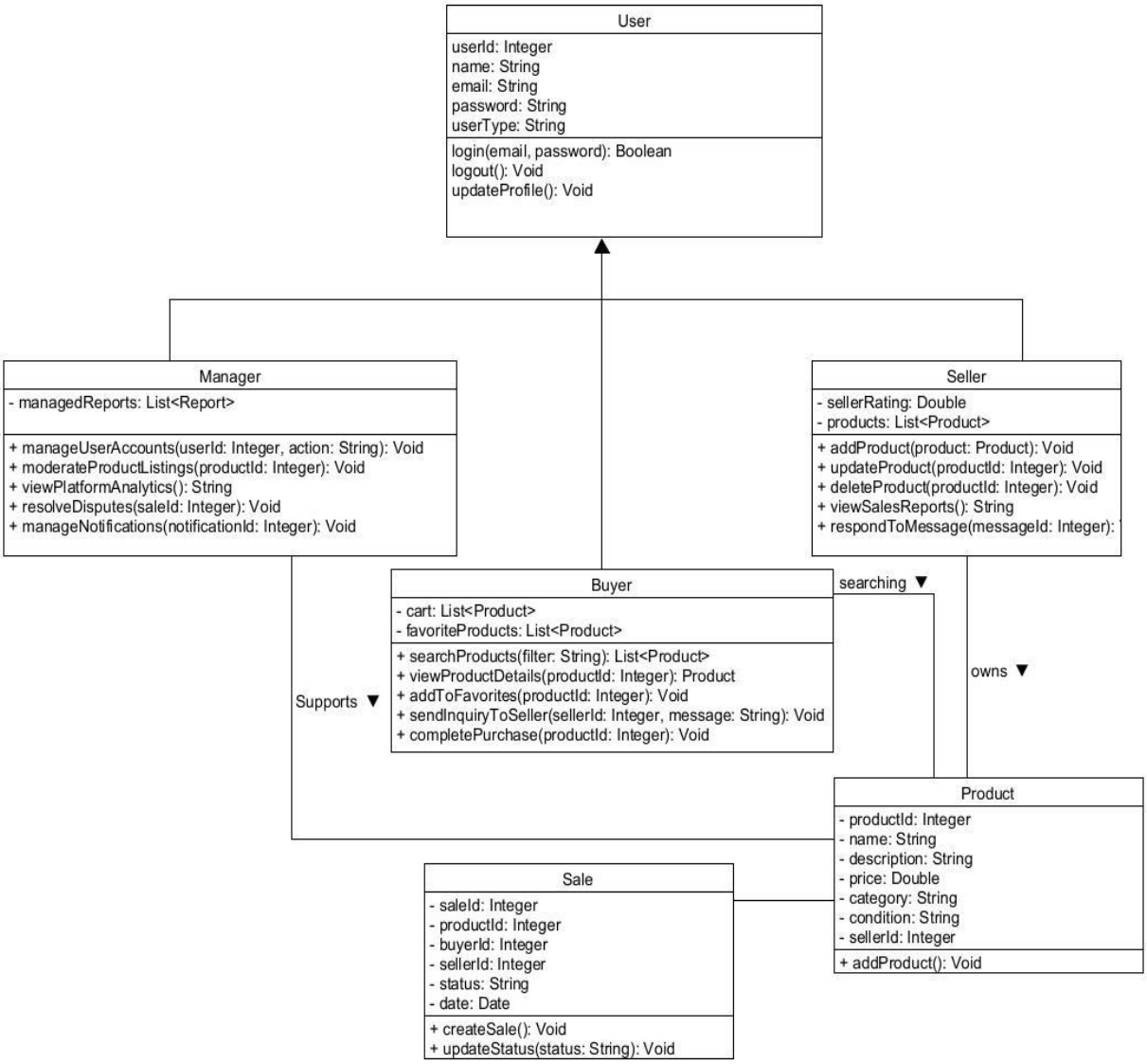
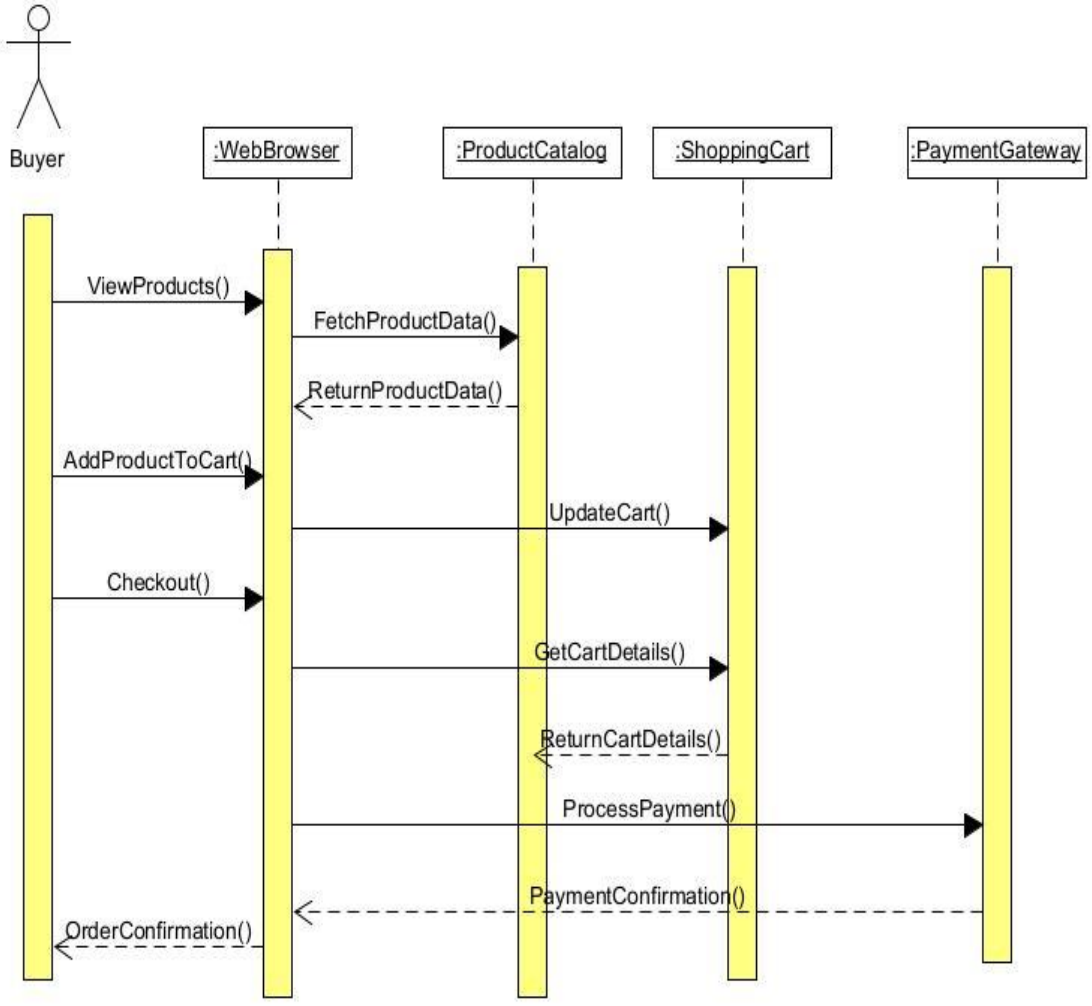
	Description
ID	UC-M2
RQ	19
Actor	Manager
Description	The system shall allow managers to review and remove product listings that violate policies.
Precondition	Manager is logged in.
Basic Flow	- Manager navigates to "Product Moderation." - Manager reviews flagged listings. - Manager takes action.
Alternative Flow	- If no flagged listings exist, the system shows "No flagged products."
Postcondition	The product listing is updated or removed.

Manage Notifications:

	Description
ID	UC-M3
RQ	22
Actor	Manager
Description	The system shall allow managers to configure and manage system notifications.
Precondition	Manager is logged in.
Basic Flow	- Manager navigates to "Notification Settings." - Manager edits notification rules or templates. - Manager saves changes.
Alternative Flow	- If invalid settings are provided, the system shows an error message.
Postcondition	Notifications are updated.

Use Case Diagram:

Class Diagram:



Sequence Diagram: