



Exchange4Students Milestone 3 Report

Document of Design Updates

SSW 322 Group 2

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## **Introduction**

In Milestone 3, our team transitioned from UML planning to actual implementation of key user functionalities. Compared to Milestone 2, which was focused entirely on diagramming and defining system behavior, we now implemented the following:

- Functional user registration and login, with JWT-based authentication
- Sellers can create item listings, including image uploads and item details
- Buyers can browse posted items and view detailed information

Live state updates and error validation were implemented to simulate dynamic input flows

As a result of this implementation, we have updated our activity and class diagrams to reflect the new system behaviors and real-world state transitions. Only the functions that were fully implemented in Milestone 3 are included in these updated diagrams.

## **Team Collaboration**

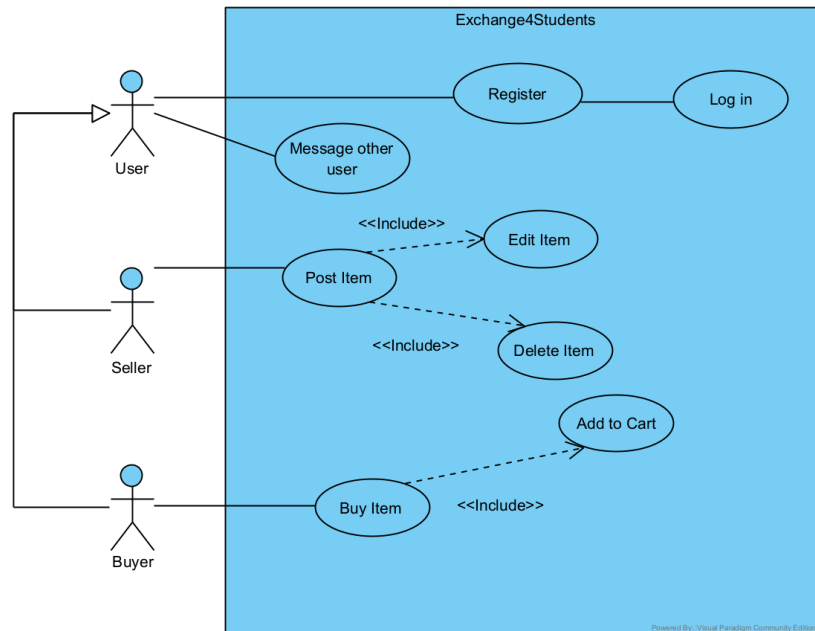
- James Grant: During this project, I contributed to:
  - Use Case Diagram update
  - Front-end refining
  - Routing user login information through different .jsx Page files
  - Buyer Page and Item Database integration
  - Programs:
    - BrowseItems.jsx, Home.jsx, LoginPage.jsx, SellerItems.jsx
- Justin Phan: During this project, I:
  - Updated the class diagram
  - Worked on implementing the feature for users to browse items

- Contributed to documentation details on GitHub repository
- Jacob Gelman-Funk:
  - Use Case Diagram Update
- Edmund Yuen: For this milestone I contributed:
  - Backend development, Activity Diagram update
  - Setup database, backend server, and initial react front-end
  - Programs:
    - server.js, auth.js, items.js, db.js, SellerItems.jsx, App.js, Login.js, Register.js, PostItem.js

### **Updated Use Case Diagram**

The Use Case Diagram for Milestone 3 has been updated to properly represent the user interactions with the system and use cases. The updated diagram displays both the seller and the buyer as generalizations of the parent user, which is associated with use cases for all users regardless of role. This diagram also presents a much less detailed representation of the Exchange4students application, limiting the amount of use cases displayed to high-level functions only.

The User will go through a registration process and then log in to their account, where they will then take the role of a buyer or seller. The Seller's main use case is to Post an item listing, which includes child behaviors editing or deleting an item after the listing has been posted. The Buyer's main use case is to buy an item listed by another user, which includes the Add to Cart functionality so the user can purchase multiple items at once. Currently, the message function is not implemented in the application, as this is planned for future milestones.



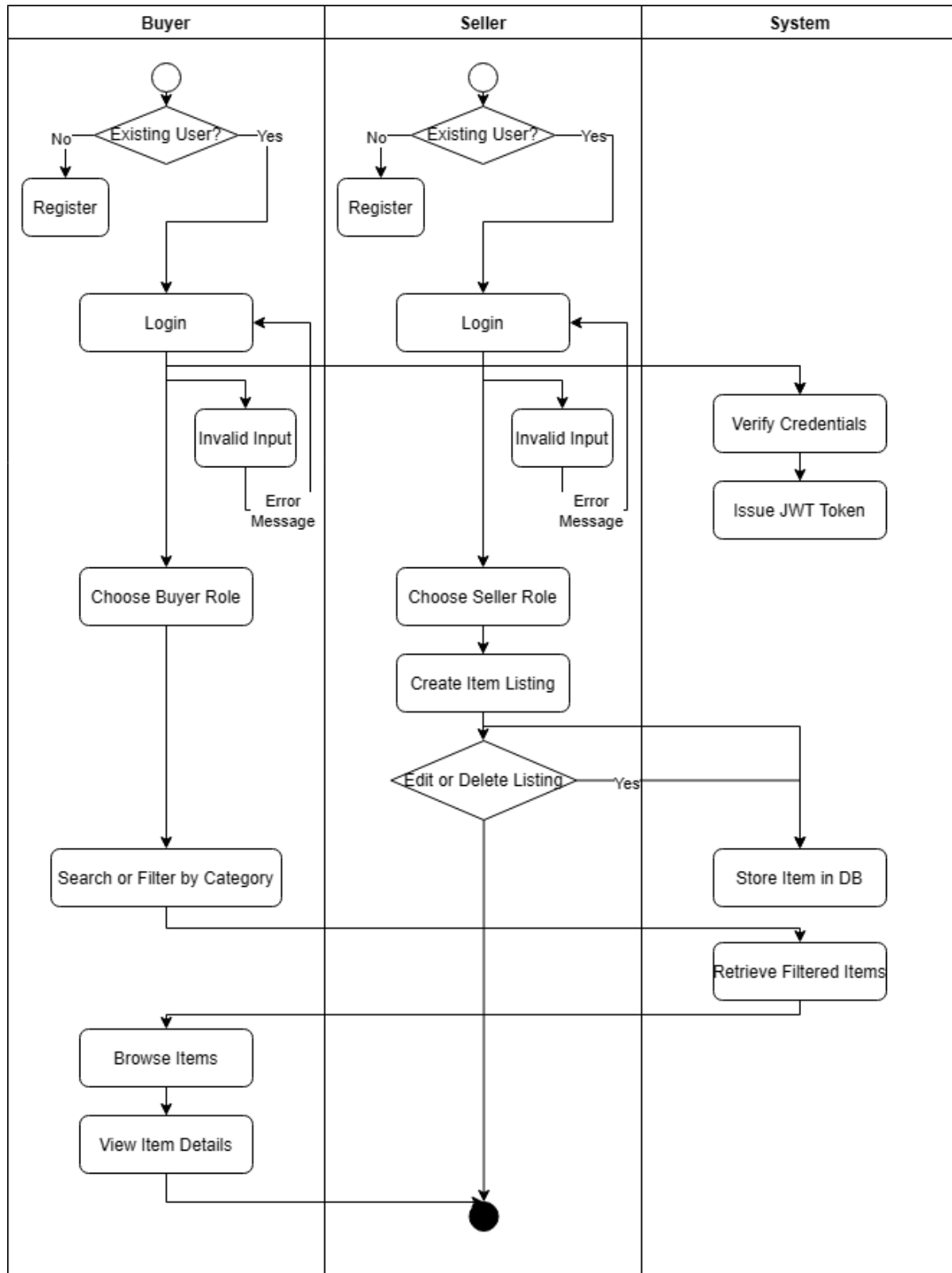
### **Updated Activity Diagram**

The activity diagram for Milestone 3 has been updated to reflect the newly implemented functionalities of the Exchange4Students application. This version of the diagram focuses on the primary user interactions that were fully developed: user registration, user login, item posting for sellers, and item browsing for buyers. Unlike the original activity diagram in Milestone 2, which outlined the entire end-to-end flow of the platform including features like checkout and messaging, this updated diagram narrows the scope to the features currently functional. The flow begins with the user either registering for a new account or logging in. If login credentials are incorrect or a required field is missing during registration, the system returns an appropriate error message, prompting the user to try again. Once authenticated, the system checks the user's role and directs them to the appropriate view—either the Seller Dashboard or the Buyer Marketplace.

For sellers, the activity diagram captures the process of creating a new item post. Sellers input the item name, description, condition, price, category, and image. The system validates all fields and only allows the item to be posted once all required information is complete and

properly formatted. If validation fails, the system notifies the seller and waits for corrections. For buyers, the activity diagram illustrates the process of browsing available items by category and selecting an item to view more details. This includes viewing item-specific information such as the name, description, price, seller, and uploaded image. Currently, the diagram does not include

checkout or messaging functions, as these are planned for future milestones.



## Updated Class Diagram

Previously, the class diagram failed to contain the Order domain entity, and did not show an association between the Seller and Item classes. Now, the Item class is reflected to be part of the Seller class and the multiplicity is that the Seller has at least one or more items as part of their profile. The Item class's attributes were also updated to properly reflect the details of items in various categories. For example, the length, width, and height attributes for furniture and isbn for textbooks. The Checkout class was also updated to contain the contact details of the checkout page when an item is purchased if the buyer chooses for it to be shipped and also the time and date of the order. Additionally, the Order class now contains attributes to reflect the photos of the items in the order. An aggregation relationship was also added to show that the Payment class is part of the Checkout class and that every checkout will have one payment.

