# Project 2: LD Classics

Group 3: Edward Dao

Background: Ld Classics

Ld Classics is a small reselling business that my brother does. What he sells is trading cards, collectible items (funko pops!), and apparel. I am creating a prototype of a website for him when it ever get bigger and well known. He typically does it on social media like Instagram and Facebook. He get his merchandise by buying it from other sellers and ships the acquire items to his customer by printing shipping labels and sending them to ups or us postal service.

Use Case Diagram
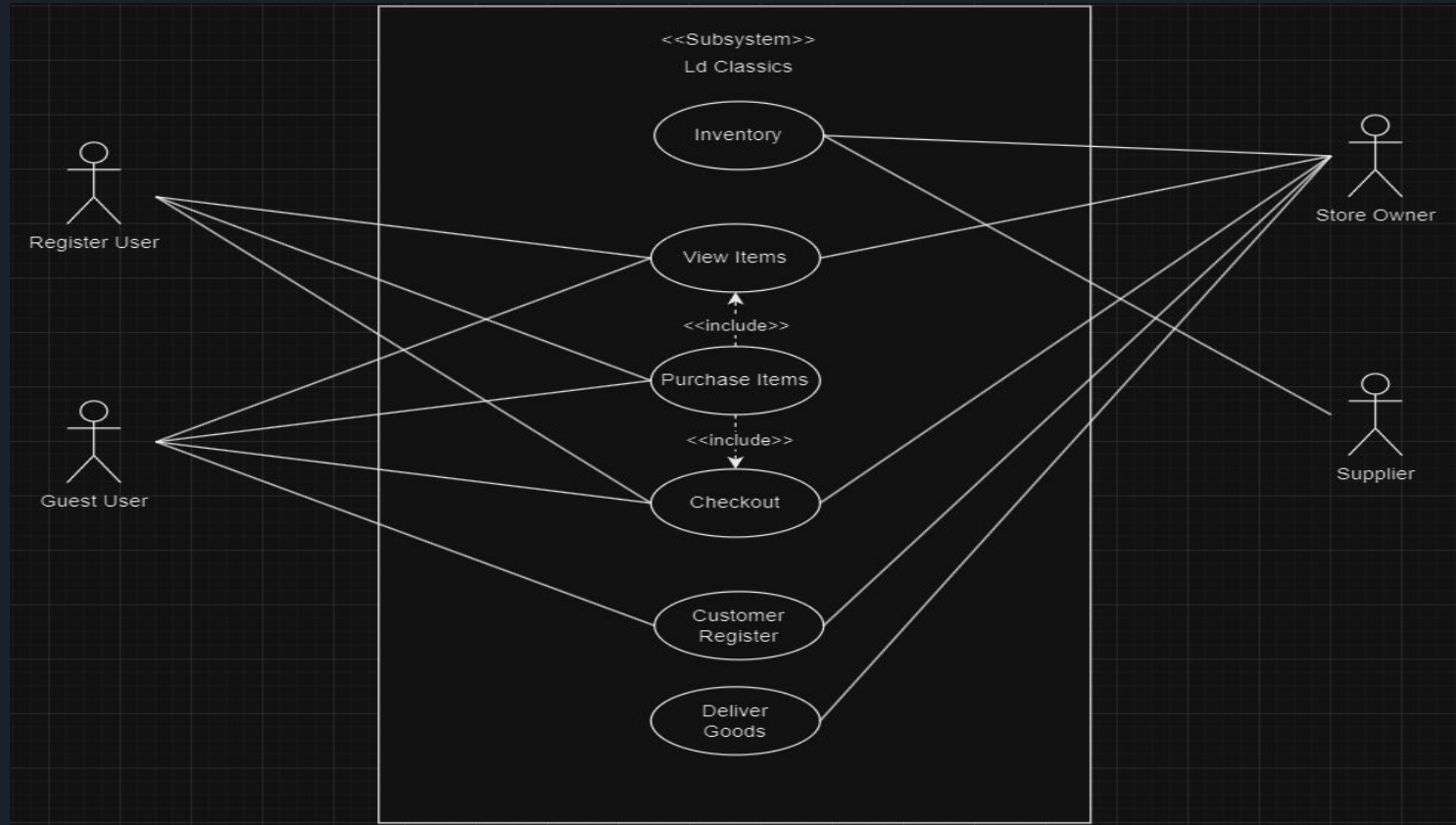
Personas

Persona 1: The Avid Collector

Name: Alex

Age: 27

Occupation: Software Developer

Interests: Collecting rare trading cards, attending gaming conventions, and participating in online forums.

Goals: To complete their collection of vintage Pokémon cards and acquire limited edition items.

Behaviors: Regularly checks online listings for rare finds, willing to pay premium prices for high-quality items, and very knowledgeable about the value and rarity of collectibles.

Challenges: Finding reliable sources to purchase rare items and ensuring authenticity.

Persona 2: The Casual Gamer

Name: Samantha

Age: 20

Occupation: University Student

Interests: Playing trading card games casually with friends, wearing game-themed apparel, and attending local gaming events.

Goals: To find affordable trading cards and accessories to enjoy the gaming experience without breaking the bank.

Behaviors: Purchases products based on aesthetic appeal and popularity, tends to make impulse buys when items are on sale or trending.

Challenges: Balancing budget with the desire to engage in the latest gaming trends.

Persona 3: The Gift Buyer

Name: Mark Johnson

Age: 45

Occupation: Accountant

Interests: Looking for gifts for family members who are fans of trading card games.

Goals: To purchase popular and appreciated trading card game-related items for children and relatives.

Behaviors: Seeks advice from store owners or community members to make informed purchases, looks for gift sets and items that are likely to have broad appeal.

Challenges: Lacks detailed knowledge of the trading card game culture, making it difficult to choose the right item.

Main and Alternative Scenarios

Main Scenario:

Store Owner -

Buy supplies from another seller to set up inventory for the store. Once an item is purchased on the website the owner can see the details of the customer purchase to make a shipping label for the item and go out and ship the item to the user address.

Supplier -

Sell items to the store owner for the them to set it up on their website.

Register/Guest User -

Browse the merchandise throughout the website for the store. Add items to cart and make a purchase. Register user will have the luxury of having their address and payment set up or edit anything to complete the purchase.

Alternative Scenarios:

Register/Guest User -

Can browse the deal section of the website and filter items to a specific trading card game or merchandise.

Another Scenarios:

Guest User -

Once a guest user complete a purchase they will be notify to sign up an account to save their information for future uses and get notification via email for deals and news of new merchandise.

User Story

The Avid Collector

Name: Alex

As an avid collector, I want a personalized dashboard where I can set up alerts based on my preferences (such as specific card sets, rarity levels, or conditions) so that I can be immediately notified via email or SMS when an item matching my criteria is listed. This will ensure that I have the opportunity to assess and purchase rare items as soon as they become available.

Acceptance Criteria:

The dashboard allows for detailed preference settings including card set, rarity, condition, and price range.

The system sends real-time notifications when a new listing matches my saved preferences.

I can view and manage my alerts and preferences at any time from my account dashboard.
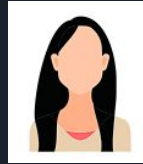
The Casual Gamer

Name: Samantha

As a casual gamer, I want the ability to access a simplified product descriptions and sections for casual players. This would help me make informed purchases without having to research extensively on external sites. Also trendy merchandise related to the trading card games they play.

Acceptance Criteria:

The section includes a variety of products, including new releases and popular staples, with an emphasis on starter packs and items suited for casual play.

Each listed product includes a simplified description, with an option to access more in-depth resources like how-to guides, videos, or blog posts.

The section is updated regularly to reflect the latest trends and customer interests.

The Store Owner

Name: Luke

A focus on inventory management, order processing, customer service, and analytics.

Acceptance Criteria:

As the store owner, I want to easily update inventory levels and product details from the admin dashboard, so that the website always reflects the current stock and product information accurately.

Initial Design

Unfinished Work:

The concept is the user can see a homepage with tabs leading to the desire items they want; Trading Card Games, Collectables, and Apparel. Then view items and add them to cart. The user can also see items on sale at the bottom underneath deals. To view more items on deals they can click on deals to check out the rest of items on deals.
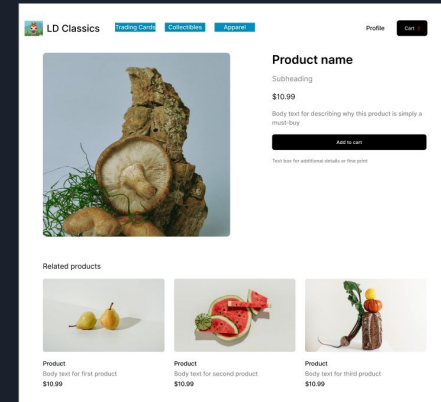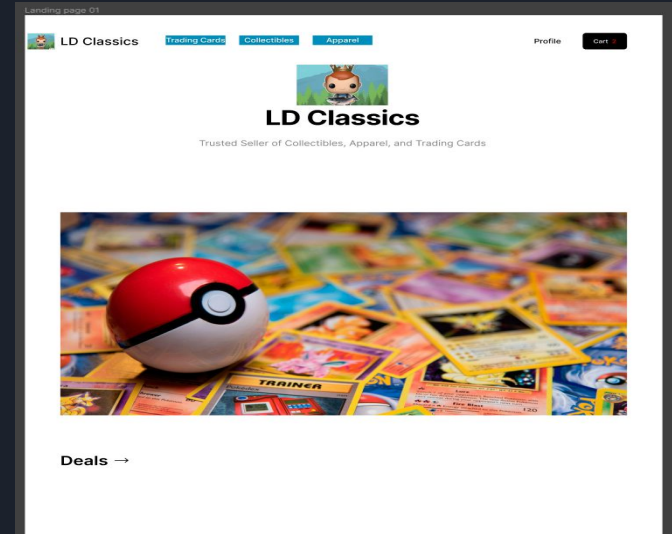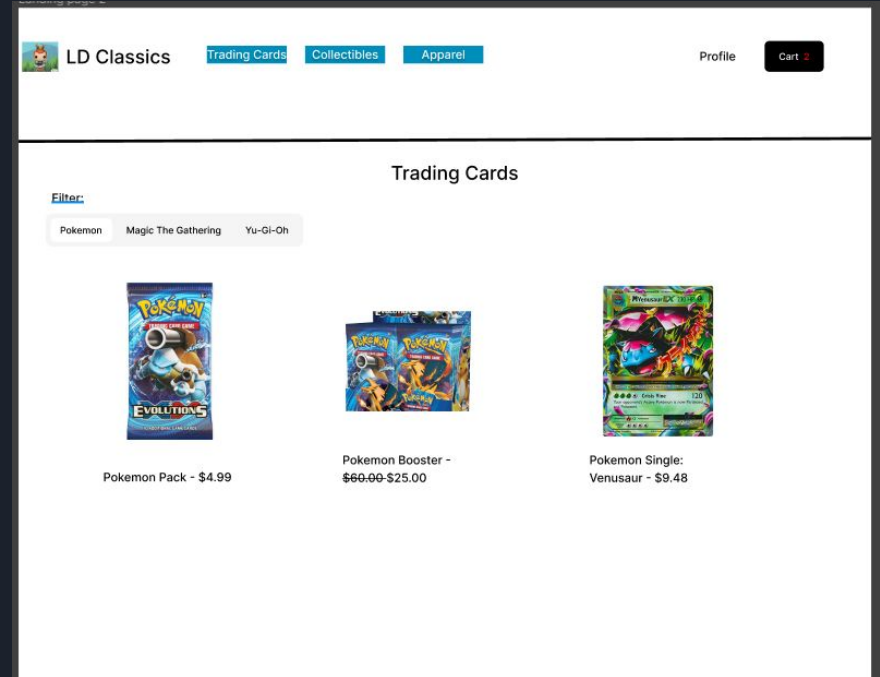
Scenario

Customer can come to the website and is greeted to the home page having tabs up at the top of certain kind of products and a deals at the bottom showcasing items on sale.
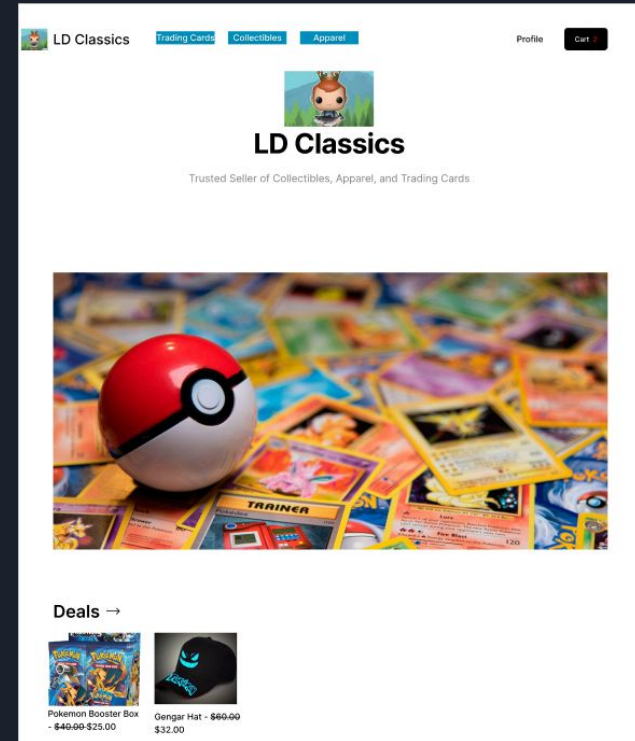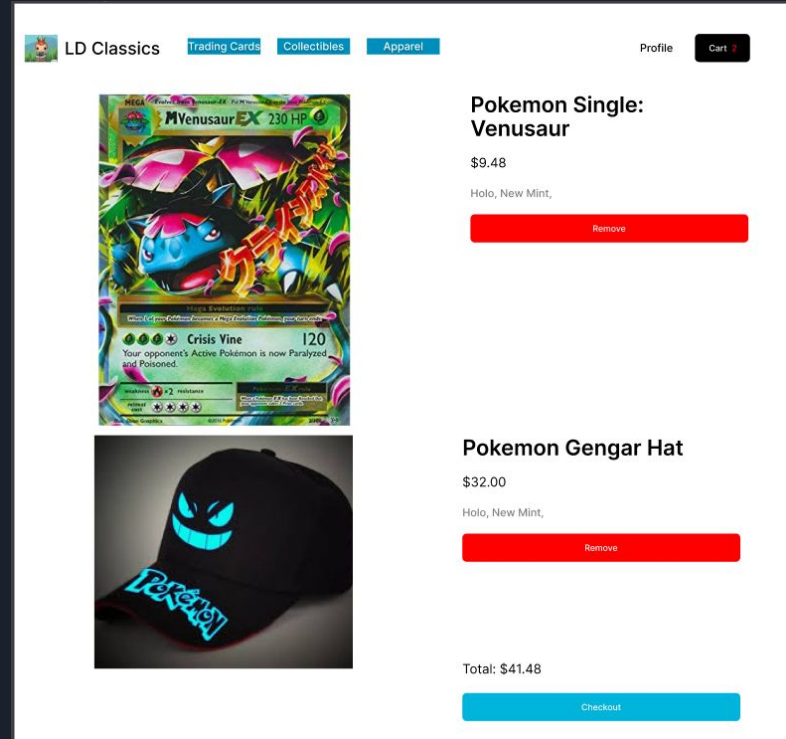
Scenario (Cont.)

When the customer goes to the trading card tab, which would be similar to the other tabs as well. They guy view all the product under that tab and have filters to separate the items into the corresponding theme or type of trading card.
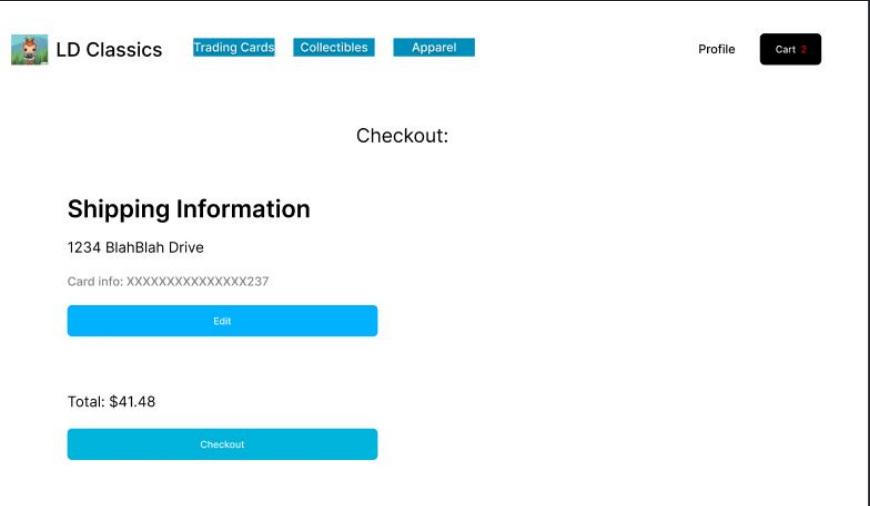
Scenario (Cont.)

The user can review their cart to see if they wish to remove an item. Also showing the total at the bottom.

Scenario (Cont.)

Register User will have the luxury to have their shipping information info automatically set up or edit it if necessary. Then confirm the purchase. If the user was a guest they would have to manually input their address and card info. The store owner can use their info to complete the purchase and used the customer shipping information to shipped the product to the customer.
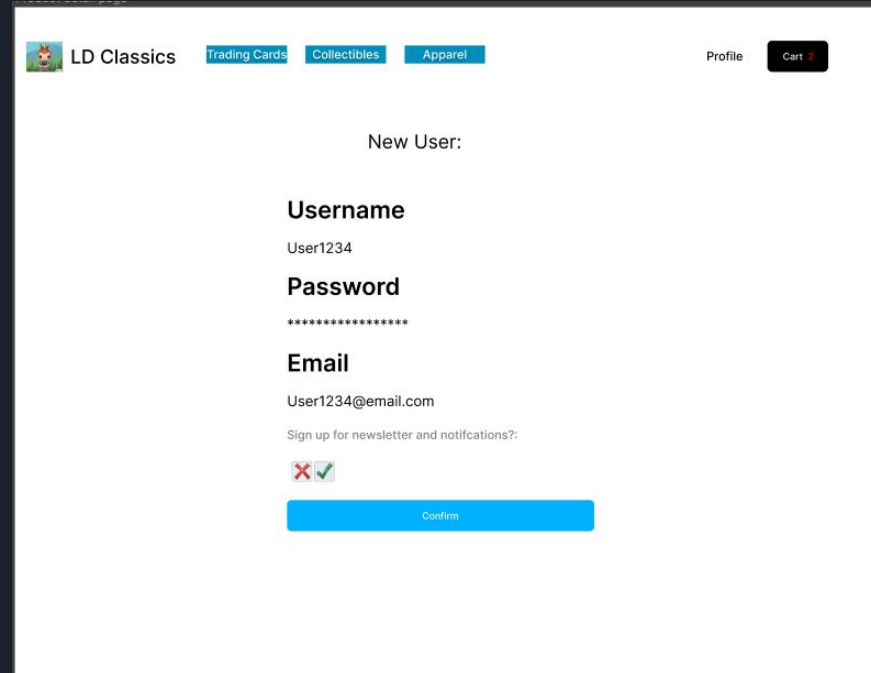
Scenario (Cont.)

When a guest user sign up for an account it would lead them to this page asking for a username and password. Also asking if they would like to sign up for the newsletter and notification, which is a generated email of deals and new products added.

Detailed Requirements Document

Purpose of The System:

The purpose of this system is to provide a user-friendly e-commerce platform for enthusiasts and collectors of trading cards and related collectibles and apparel, focusing on community engagement and the authenticity of items.

Scope of The System:

The system will encompass user account management, an inventory system, an online storefront with filter functions, a shopping cart, a checkout process, payment processing, order tracking, and a back-end management interface for the store owner.

Architecture design document

Architectural Representation:

The system is based on a microservices architecture model, which allows each function of the store to operate independently, facilitating scaling and improving fault isolation.

System Architecture:
Frontend: The user interface where customers interact with the store.
Backend: The server-side logic and database operations.
Database: The data persistence layer where all data is stored securely.

Platforms and Frameworks:
Web Application Framework: React for the frontend for its robust ecosystem and reusable components, with Node.js and Express for the backend due to their performance and scalability.
Database: MySQL for relational data storage, renowned for its rich feature set that supports a wide array of web applications.

Architecture design document (Cont.)

System Layout:
User Management Service: Handles user registration, authentication, and profile management.
Product Catalog Service: Manages product listings, categories, and inventory status.
Order Management Service: Processes orders, including payment processing and shipping status.
Notification Service: Sends emails or SMS messages for order confirmations, updates, and marketing.

Modules:
Authentication Module: Manages secure user login and session management.
Search Module: Offers advanced search capabilities with filters and sorting.
Shopping Cart Module: Allows users to add items to their cart and manage them.
Payment Module: Integrates with payment gateways to handle transactions securely.
Admin Module: Enables the store owner to manage the product listings and view business analytics.

Devices:
Desktop computers
Laptops
Tablets
Smartphones

Architecture design document (Cont.)

Messaging Between Components:

RESTful APIs: Enable communication between frontend and backend services.

WebSockets: Used for real-time bidirectional communication, especially for inventory updates.

Message Queues: Utilize a separate message queuing system to handle asynchronous processing of orders, notifications, and other backend tasks, while storing transactional data and message statuses in MySQL to ensure consistency and durability across operations.

Initial software (code) design

Classes:
- User:
  Attributes: userId, username, password, email, userType
  Methods: login(), logout(), updateProfile(), register()
- Product:
  Attributes: productId, name, description, price, stockQuantity, categoryId
  Methods: addProduct(), updateProduct(), deleteProduct()
- Order:
  Attributes: orderId, userId, orderDate, status
  Methods: placeOrder(), updateOrderStatus(), cancelOrder()
- Cart:
  Attributes: cartId, userId, productId, quantity
  Methods: addToCart(), removeFromCart(), updateQuantity(), checkout()
- Category:
  Attributes: categoryId, categoryName, description
  Methods: addCategory(), updateCategory(), deleteCategory()

Initial software (code) design (Cont.)

Database Tables:
- User:
  Columns: userId (PK), username, password, email, userType
- Product:
  Columns: productId (PK), name, description, price, stockQuantity, categoryId (FK)
- Order:
  Columns: orderId (PK), userId (FK), orderDate, status
- Cart:
  Columns: cartId (PK), userId (FK)
- CartItems:
  Columns: cartItemId (PK), cartId (FK), productId (FK), quantity
- Category:
  Columns: categoryId (PK), categoryName, description

Initial software (code) design (Cont.)

Sequence Diagram: