CS355 – Database Project Proposal Form

Section 1: Metadata

1.1. Project Information

Title: **TriCommerce - A Role Based E-commerce Management System**	
Section: L3	Instructor: Sir Qasim Pasta

1.2. Student(s) Information

Name: Ammar Mohammad Dagha	ID: ad09312
Section: L3	Batch: 2027

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Section: L3	Batch: 2027

Section 2: The Project

2.1. Project Description:

This project aims to develop an Ecommerce Database Management System (DBMS) that supports three different roles: Ecommerce Site Admin, Sellers, and Customers. The system will automate the necessary data processions and will cater to the needs of all 3 user types by offering multiple functionalities and relevant access to the data.

1. Ecommerce Site Admin:
   The admin will have control over the platform, managing seller registrations, approving/disapproving products listed by the seller, managing financial transactions, publishing sale campaigns, etc. Overall, the admin will have the necessary data from both the customers and sellers, and the necessary tools in order to effectively build coordination among both.
2. Sellers:
   Sellers will be able to register/login their stores on the site, upload products, manage their inventory, track orders, view sales data, add products to sale campaigns, check finance, see customer reviews and other essential tools for an Ecommerce Business.
3. Customers:
   The platform for customers will enable them to register/login into the platform, select a particular category, view products within that category, check reviews on a product, manage and place orders, manage their delivery address, and other essential tools to give them a satisfactory shopping experience.

All in all, the project aims to develop a streamline for a basic management (especially in terms of data) of an online marketplace.

2.2 Functional Requirements

Module 1: Registrations and Login

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- **Function 1: Account Registration (For Customers and Sellers)**
  - **Seller Registration:**
    Sellers will be prompted to fill in a detailed registration form with the following fields:
    - Store Name (duplicate not allowed)
    - CNIC (a 13-digit number)
    - Bank Name
    - Bank Account Number (11-16 digits)
    - Name on CNIC (First and Last Name)
    - Contact Number (11 digits)
    - Email Address
    - Password
    - City Name
    - Physical Warehouse/Shop Address

    After submitting the form, the seller's details will be sent to the Admin for verification. Only after Admin approval, a unique seller ID will be assigned to the seller and the seller can add products and manage their storefront.

  - **Customer Registration:**
    The registration form for customers will ask for the following details:
    - Name (First and Last)
    - Email Address
    - Password
    - Contact Number (11 digits)
    - Delivery Address

    Upon submission, an account will be created, and the details sent to the Admin for review.

- **Function 2: Account Login**
  Registered Sellers, Customers, and Admins can log into their respective accounts using an email address and password. Admins do not need to register as their accounts are

pre-configured. Once logged in, users will be directed to dashboards specific to their roles.

Module 2: Update Account Information

- Sellers can update only their contact number, password, city name and address.
- Customers can update only their password, address, and contact number.

Module 3: Product Management (For Sellers)

- **Function 1: Add New Products**
  Once approved by the Admin, Sellers can log in and add new products by filling out the product form, which includes:
  - Product Name (max character limit = 256) (Duplicate on store not allowed)
  - Description
  - Price (> 0)
  - Category
  - Stock Quantity
  - Upload Product Image (Only 1) (Optional)

  The product will be sent for approval to the admin, and will show to the customers once approved. Every product will also be assigned a unique product ID or SKU.

- **Function 2: Update Product Information**
  Sellers can modify existing product details, such as adjusting prices, updating descriptions, or changing stock levels.
- **Function 3: Product Performance**
  Sellers can view the performance of each product that they have uploaded. The performance metrics will include:
  - Number of orders
  - Reviews by customers
  - Revenue generated
  - Number of clicks on the product
- **Function 4: Sale Campaigns**
  Sellers can add products to **sale campaigns** uploaded by the admin. Once the campaign period starts, the product cannot be removed from it.

Module 3: Product Browsing and Shopping (For Customers)

- **Function 1: Browse Products**
  Customers can search for products by **category name**. The system will display the products uploaded by sellers in that category with information such as image, price, sale price and sale campaign name, description and reviews and seller name.
- **Function 2: Add to Cart**
  Customers can add products to their shopping cart, which will remain persistent unless manually removed or checked out. The system tracks all items placed in the cart until the purchase is completed.
- **Function 3: Cart Management**
  Customers can view their cart at any time, adjust the quantity of items, remove items, or clear the entire cart. If the cart is empty, the checkout process will not proceed.
- **Function 4: Checkout Process**
  Customers can review their cart and proceed to checkout, where they will confirm their delivery address. The system will provide a summary of their purchase, including product names, quantity, shipping cost and total cost.

Module 5: Approvals and Permissions (For Admin)

- **Function 1: Approving Seller Accounts**
  Admin can view pending approval requests for seller accounts and can process them by viewing the details mentioned by the seller. Admin will also be able to see if the CNIC / bank account / address has been registered before and has the right to approve or disapprove based on whatever circumstances. Once approved/disapproved, the account will go into the list of approved/disapproved sellers. Admin has the right to block an account after approval as well.
- **Function 2: Approving Products**
  Admin can view the pending products for approval and the seller to upload them. Admin can view all the details mentioned by the seller and approve/disapprove the product. Once approved the product will be live on the customer products page under the relevant category. Admin has the right to remove a product after approval as well.

Module 6: Managing Orders

- **Function 1: Pending Orders (For Sellers)**
  Sellers can view their **pending orders**. Each order will contain the following information: Product name, product category, customer name, customer address and a unique order number. Once the order is processed, it will be listed in the **Shipping** list.

- **Function 2: Orders History (For Customers)**
  Customers can view the orders they have placed and their status: **all orders**, **to receive** or **to review**.
- **Function 3: Processing Orders (For Admin)**
  Admin will have the data of all the orders placed by a customer and to a seller. The seller can bring their orders to the admin, the admin can put in the order number to the system, and the status of that order will change to **shipped**.

Module 7: Sale Campaigns

- **Function 1: Uploading Campaigns (For Admin)**
  Admin can upload sale campaigns and manage their start/end date, campaign name, minimum discount percentage, allowed categories, and allowed sellers (based on some metrics, optional). A campaign cannot be repeated more than once in a year and duplicate campaign names are not allowed.
- **Function 2: Filtering Products (For Customers)**
  Customers can filter out products in each category based on their submission in the campaign or not.

Module 8: Finances

- Admin will store the finance data of each order for every seller and will process the payment on the first day of every month after the applicable deductions, such as taxes and commissions.
- Sellers will get a payment receipt at the first of every month with the total amount, deductions, amount payable, and taxes mentioned.

Note: Filtration on the basis of date/time may be added to the modules/functions where applicable.

2.3. Planned Schedule:

10 September 2024 - Submission of project proposal

11 September 2024 - Feedback on the proposal

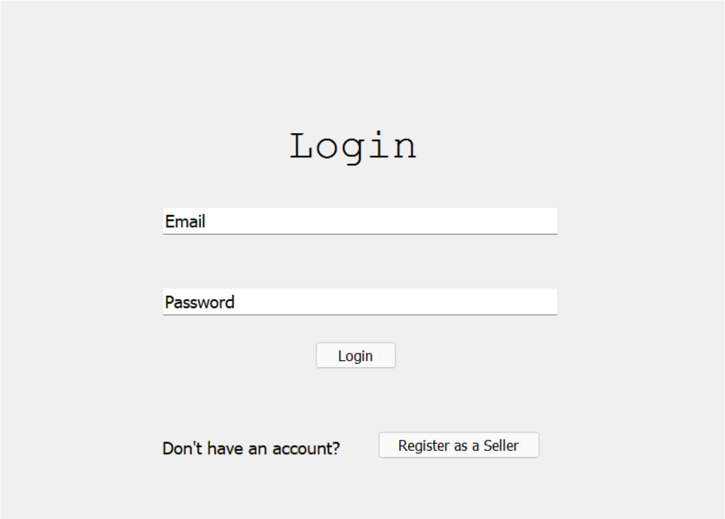
End of September - Beautification of screen and finalizing the design/theme

The rest is dependent on learning relevant material in the course.

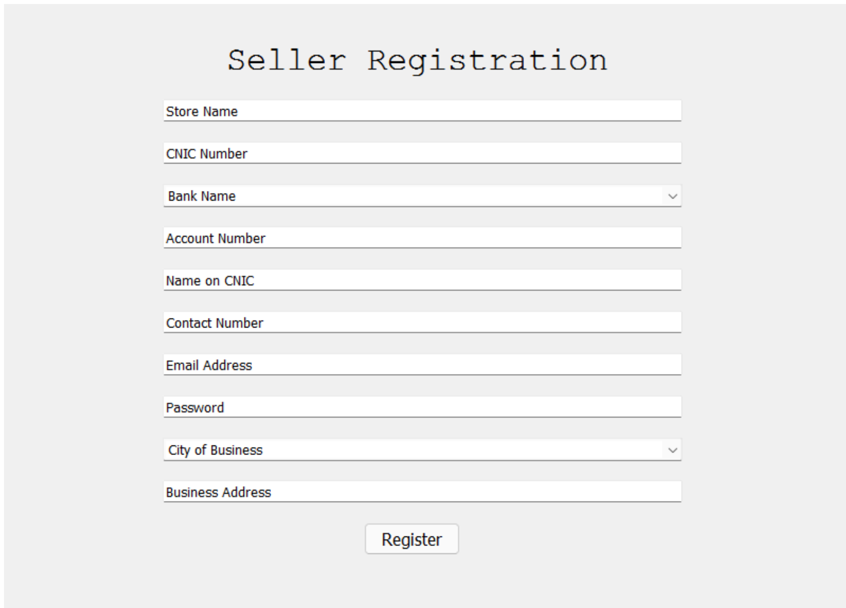
2.4. Technology Stack: .

2.5. Screens:

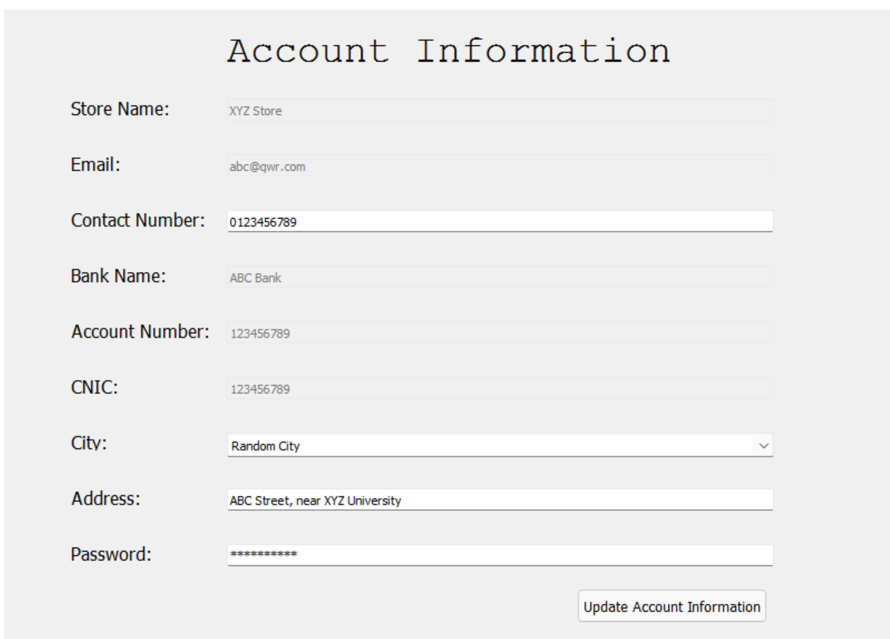
Seller Center:



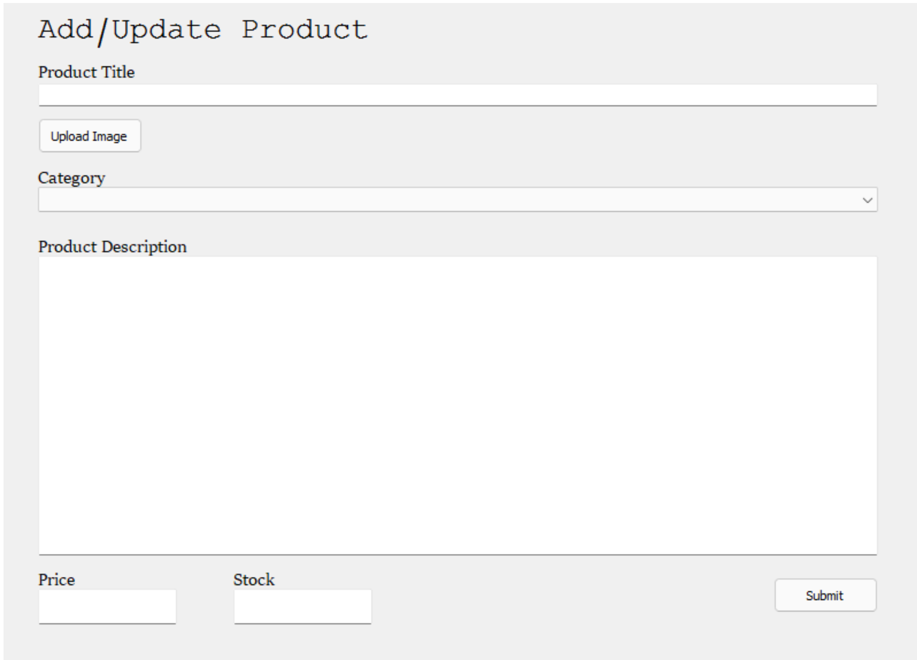
Login Page for seller's dashboard. Register as a Seller will open the registration page



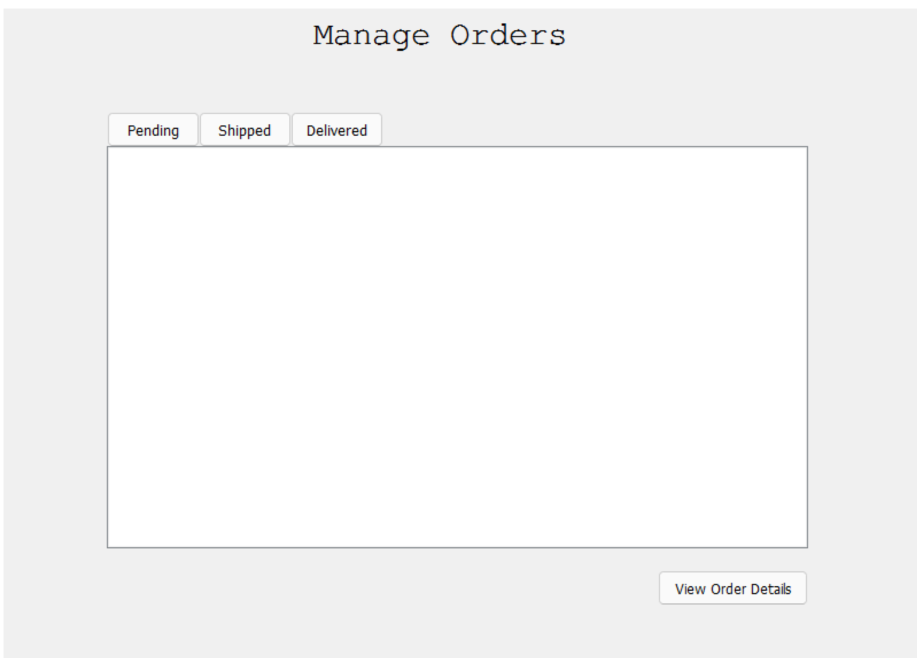
Clicking on Register will send the information to admin for approval and the login page will appear.



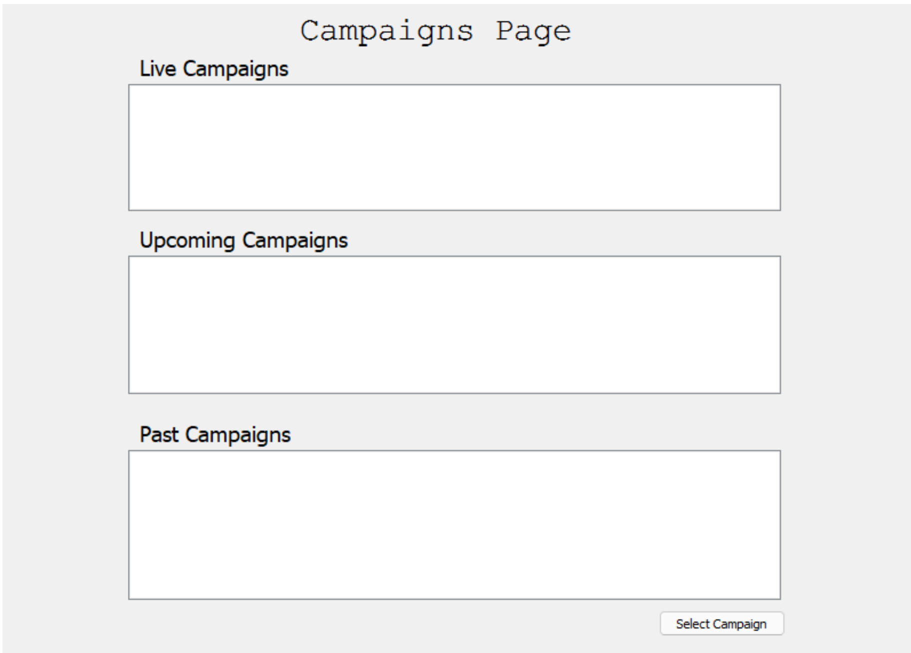
Account information can be upgraded by clicking on Update Account Information



The product details will be sent to the admin for approval upon clicking submit and a message will popup.

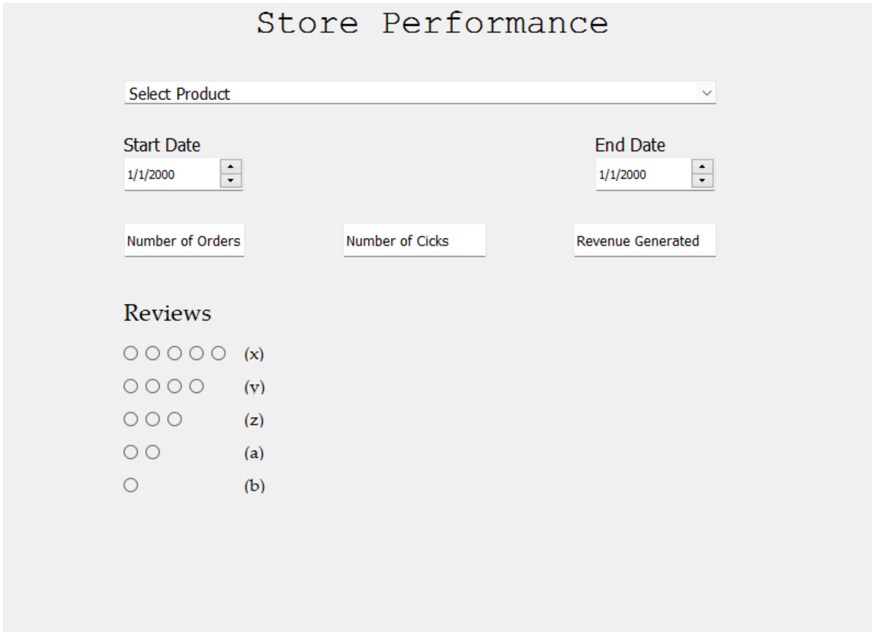


Selected order status' orders will display in the list box. View Order Details will show relevant details of the selected order.

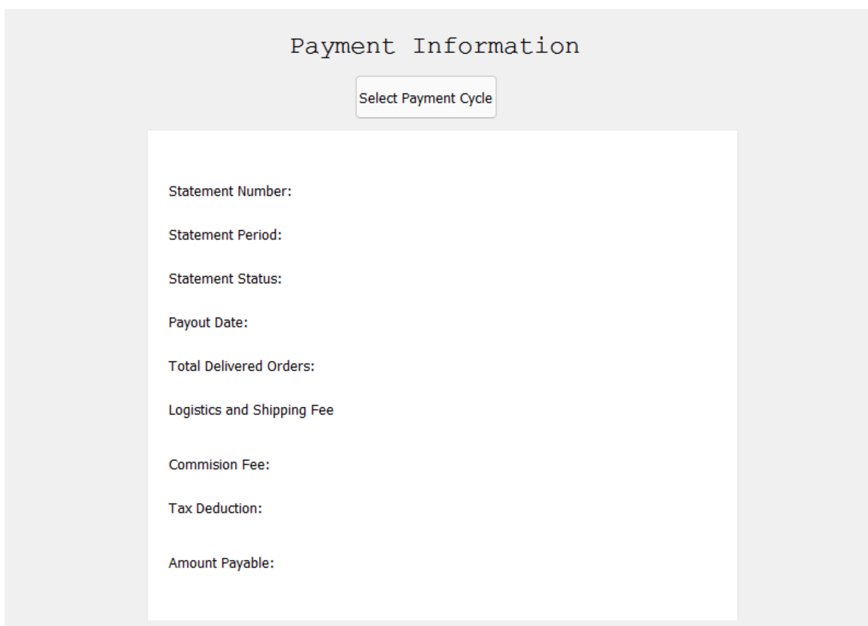


Lists of campaigns will display under each status. Select Campaign will open the selected campaign page.

Add Products will show a list of products to add from. Manage Products will allow to format already listed products.

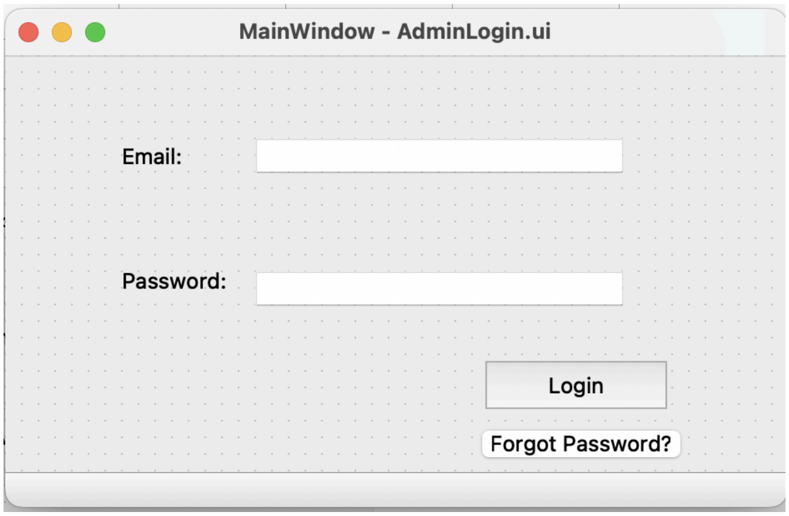


Select product will show a list of products uploaded on your store.

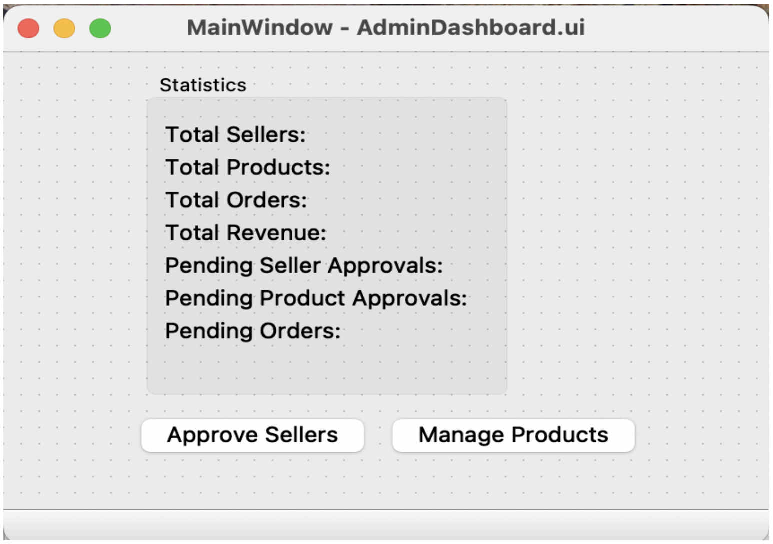


Select payment cycle will show a list of months to choose from.

Admin Center:

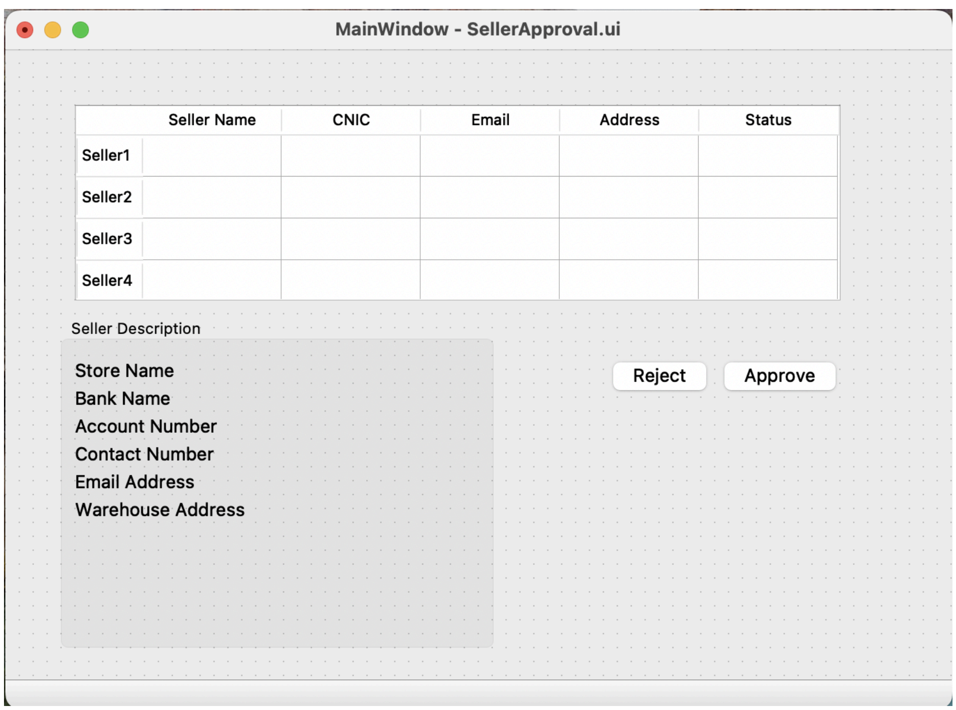


Login page for admin members. Pressing login would open the admin dashboard.

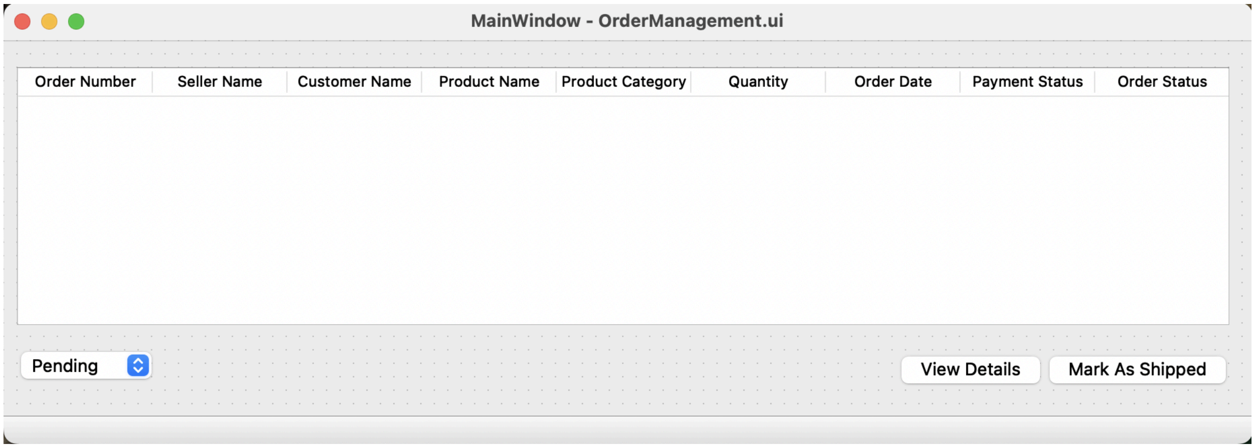


All statistics related to the business, which concern the admin will be shown here. 'Approve Sellers' would open a form with all the sellers. Manage Products will open a form with all the products and their descriptions.

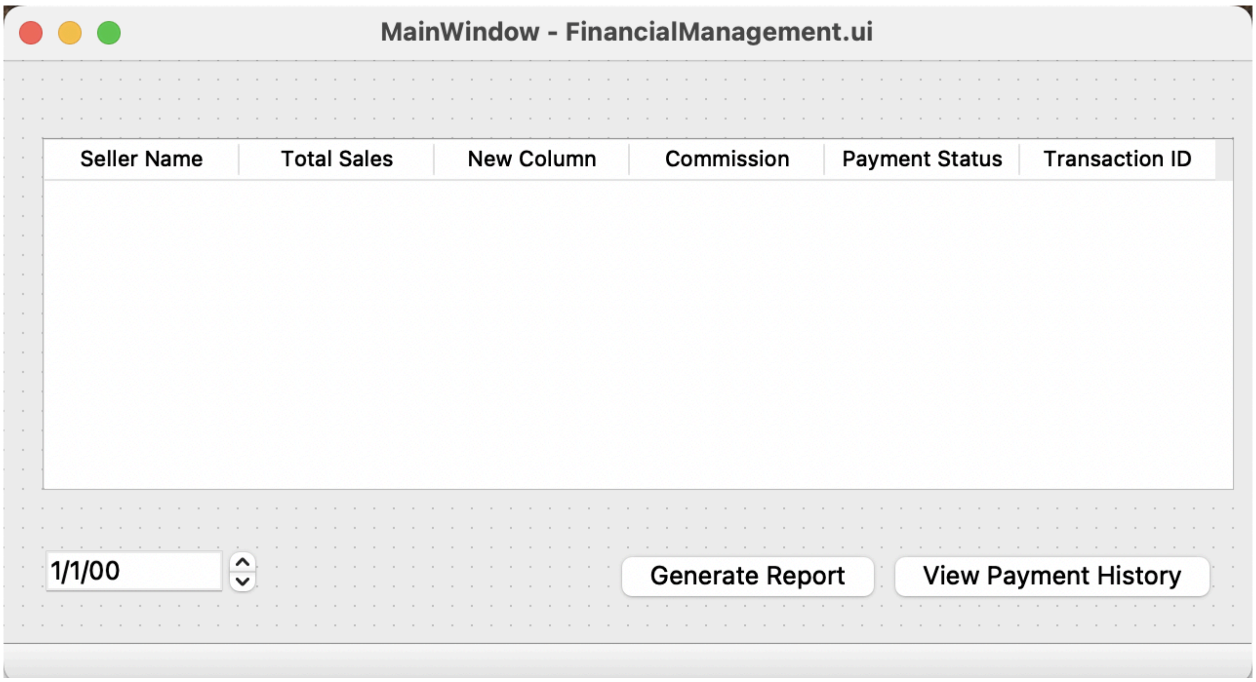
Displays the status of all the products, whether they are approved or not. View Product shows all the details concerning the product.



Displays all the necessary details about each seller. Pressing on a seller shows a detailed description of the seller in a separate box and shows the option to 'Reject' or 'Approve' their request.

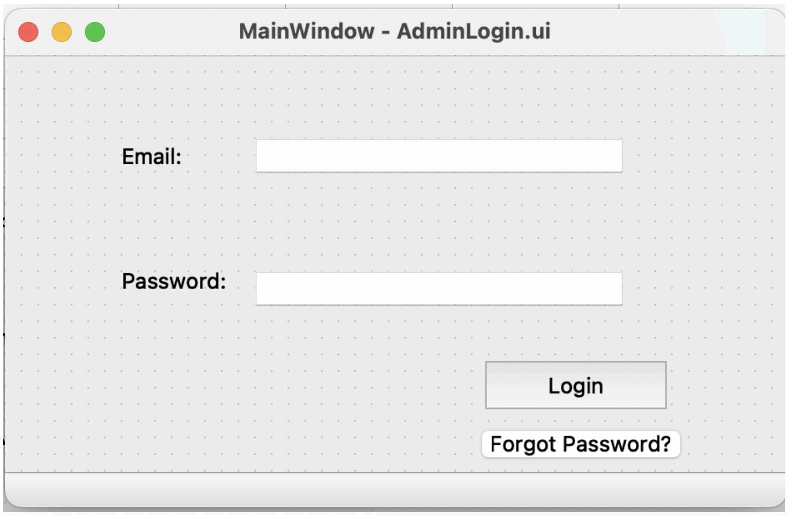


Displays all the orders recorded to date with all their details. A ComboBox is used to filter the orders according to their status of 'Pending', 'Shipped', or 'Delivered'.

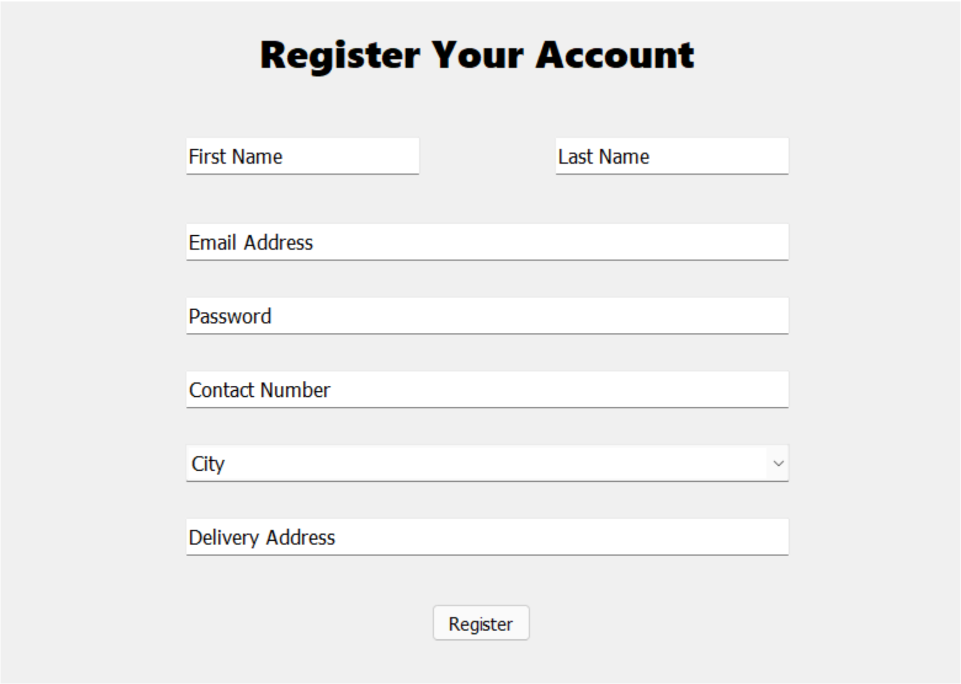


All the transactions can be tracked by the date they occurred on.

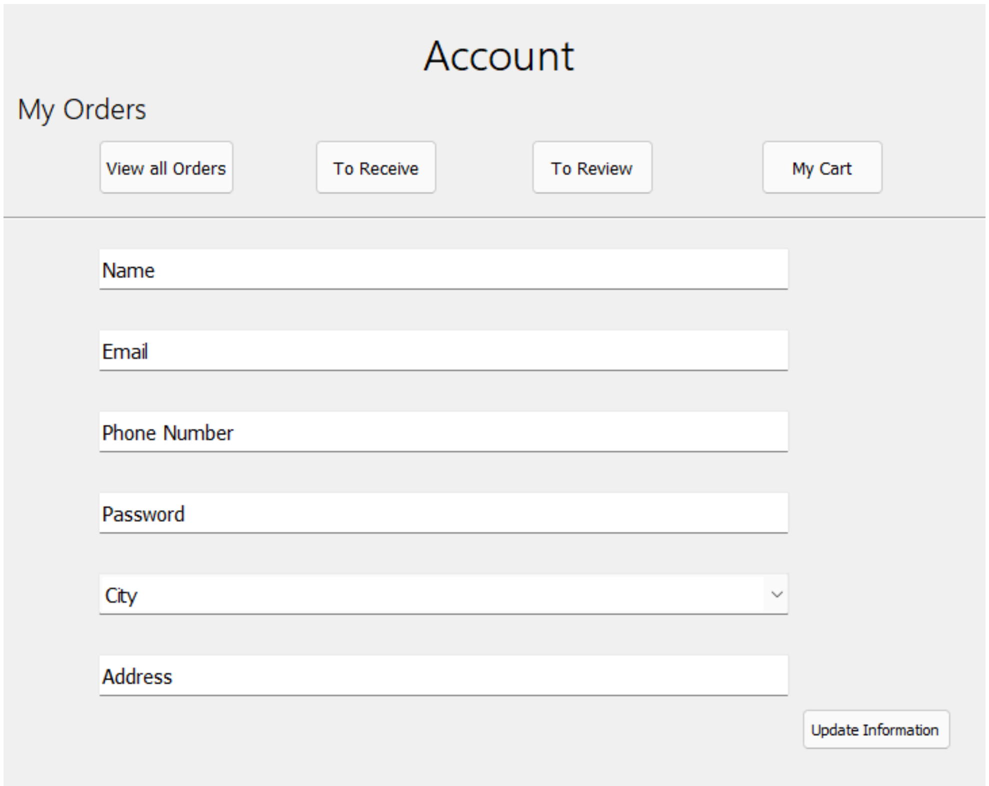
Customers' Handle:



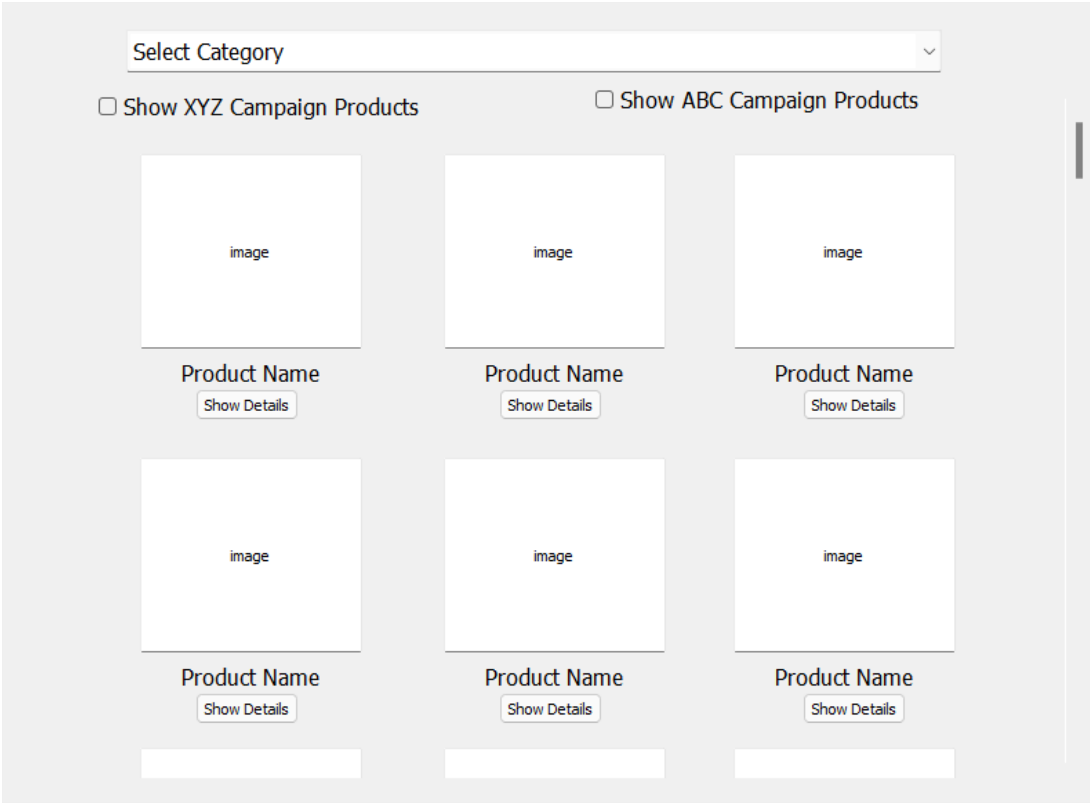
Customers will have a similar login page as admins and sellers, maybe with more beautification.



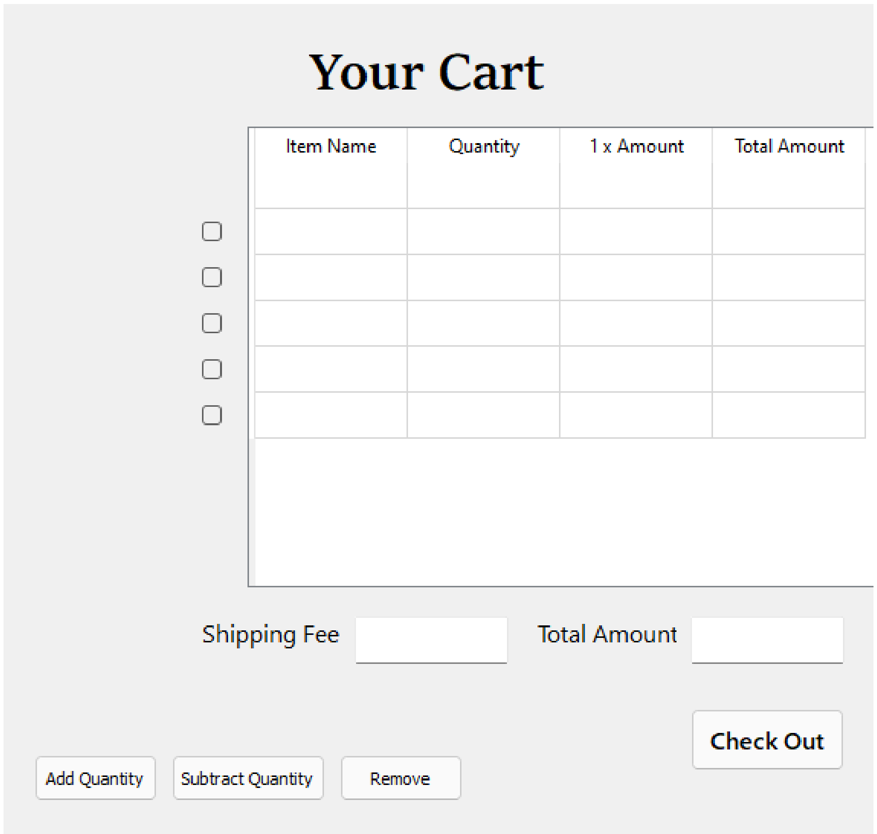
Account registration for customers. If the email has already been used, an error message should pop up.



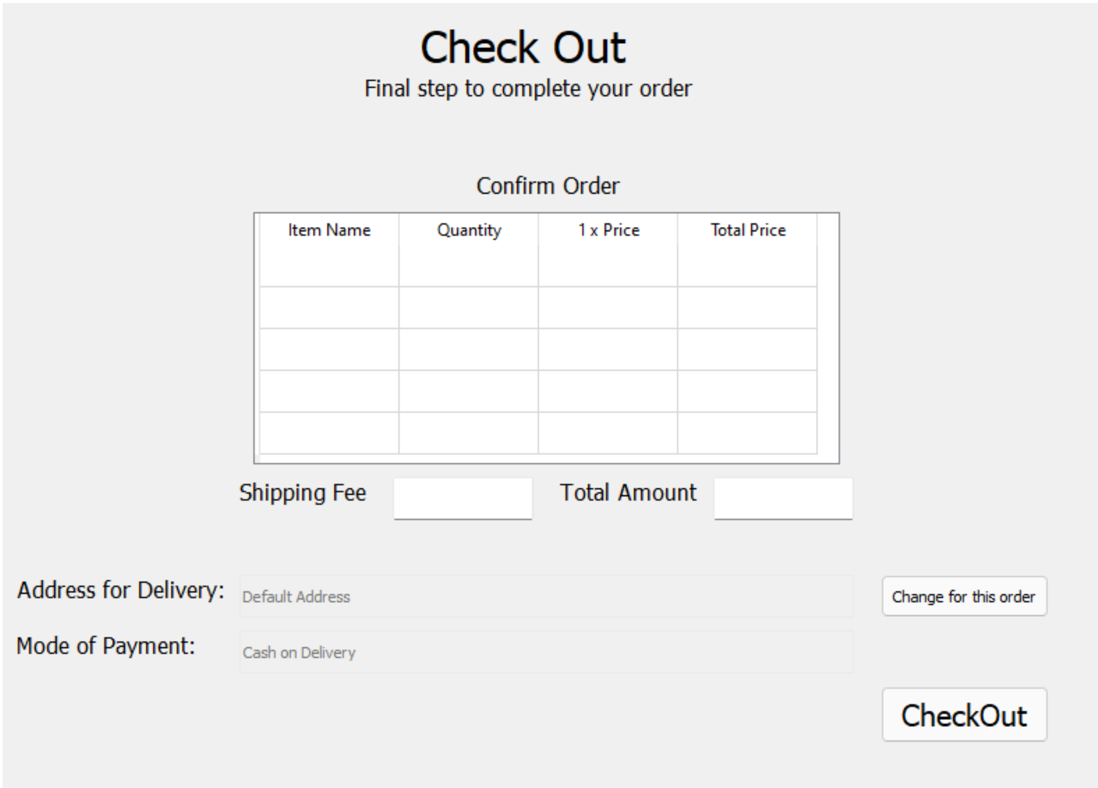
Displays the account information of the customer along with the option to update it (where allowed), and the order details of the customer.



Only the products in the selected category will appear in the results. Clicking on campaign checker boxes will filter out only the products listed in that campaign.



Shopping cart to add products in before the final check out. Add Quantity and Subtract Quantity will add or subtract the quantity of the selected by 1. Remove will delete the item from the cart.



The final checkout screen. Customers will have the liberty to change the delivery address for one particular order only. CheckOut will complete the shopping process. and an order will be placed.