PROJECT PART 2

Team: Matthew Sredojevic, Robert Ladd, Hannie Ngo
Title: ElectronXchange

Project Summary: A web application served as an online marketplace for people interested in buying electronics.

Main Features

- Customers can create an account
- Customers can browse and see a list of electronics
- Customers can add their account information (payment information, shipping address, etc.)
- Customers can add product to their shopping carts
- Customers can buy products from the market
- Customers receive confirmation email whenever they finish a transaction
- Admins can log on the system
- Admins can customize inventory (add, view, delete, update)

Stretch Functionality

- The ability for users to rate products
- Implement a machine learning library to show recommended products to users
- A way for providers to implement API's from their own product based websites

Project Requirements:

Business Requirements

ID	Requirements	Topic Area	Actor	Priority
BR-1	Catalogs of products are categorized based on hardware, condition, etc.	Inventory Management	Admins	High
BR-2	User account must be email format and free of cost	Account Service	Customers	High
BR-3	Advanced product search facility with preferences and filters	Inventory Management	Customers	Medium
BR-4	Notification email of transactions should be sent within 5 minutes	Account Service	Customers	Medium
BR-5	Shopping cart will be invalidated after a day	Processing	Customers	Low

User Requirements

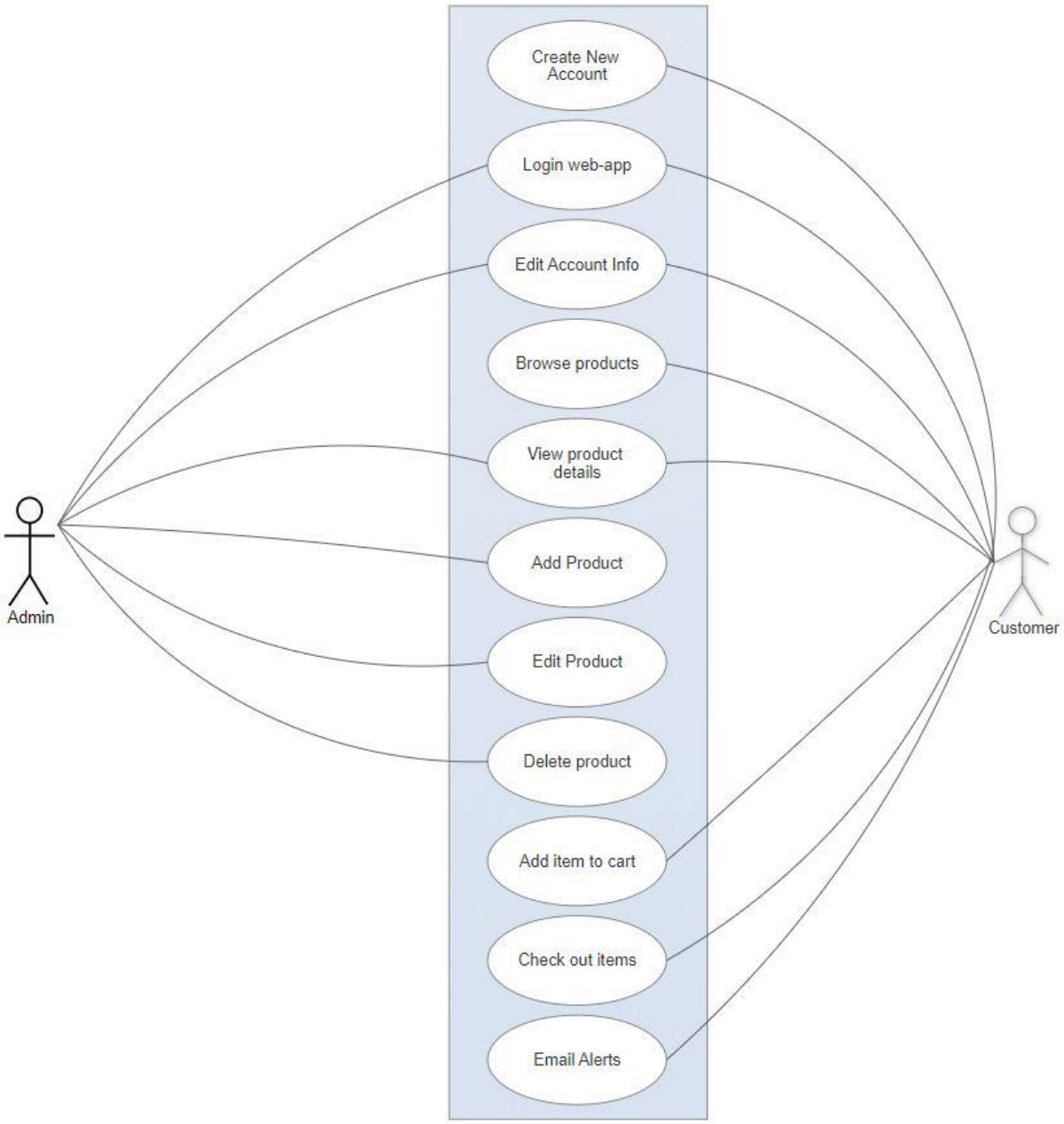
ID	Requirements	Topic Area	Actor	Priority
UR-01	As a user, I want to be able to create an account	Account Service	Customers	High
UR-02	As a user, I want to be able to log in to my account	Account Service	All	High
UR-03	As a user, I want to be able to be able to browse certain types of electronics with a search filter	Processing	Customers	Medium
UR-04	As a user, I want to be able to view product detail information	Inventory Management	All	High
UR-05	As a user, I want to add product to the inventory	Inventory Management	Admins	High
UR-06	As a user, I want to edit product information	Inventory Management	Admins	High

UR-07	As a user, I want to remove product from the inventory	Inventory Management	Admins	High
UR-08	As a user, I want to add products of interests to my shopping cart	Suggestion	Customers	High
UR-09	As a user, I want to confirm buying products from the shopping cart	Account Service	Customers	High
UR-10	As a user, I want to edit my account information including shipping address and payment information	Account Service	Customers	High
UR-11	As a user, I want an email notification for every exchange I have made	Account Service	Customers	High

Non-functional Requirements

ID	Requirements	Topic Area	Actor	Priority
NFR-01	Password security authentication	Security	All	High
NFR-02	Users shall receive notification of profile changes via email	Security	Customers	Medium
NFR-03	Product information and wish-lists will be stored in database	Storage	Admins	High
NFR-04	Searching engine must be dynamically updated and run fast	Performance	All	Low
NFR-05	Credit card information must be kept private	Security	Customers	Medium

Use Case Diagram



Use Case Documentations

<table>
<tr><td>Use Case ID</td><td>UC-01</td></tr>
<tr><td>Use Case Name</td><td>Create new account</td></tr>
<tr><td>Description</td><td>New/Unregistered customers can create their own account</td></tr>
<tr><td>Actors</td><td>Customers</td></tr>
<tr><td>Pre-conditions</td><td>New customers never register before, or registered customers who forget their account information (both account email and password) want to register again.</td></tr>
<tr><td>Post-conditions</td><td>Customers set up their accounts and login the website</td></tr>
<tr><td>Frequency of Use</td><td>Frequently throughout the day</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Access to the main page and click “Sign Up”</td><td>Navigate to Sign-up page</td></tr>
<tr><td>2</td><td>Fill in account information including name, email address, password, shipping address, etc. and submit the form</td><td>Notify successful registration
Update customer database</td></tr>
<tr><td>3</td><td>Directed to the logged-in page</td><td></td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>If customers remember their email account, they can choose option “Forget password” and receive a confirmation code to re-enter a new password for the account.</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Matthew Sredojevic</td></tr>
</table>

<table>
<tr><td>Use Case ID</td><td>UC-02</td></tr>
<tr><td>Use Case Name</td><td>Log in web-app</td></tr>
<tr><td>Description</td><td>Admins and registered customers can log in the webapp with their account name and password</td></tr>
<tr><td>Actors</td><td>All (admins and customers)</td></tr>
<tr><td>Pre-conditions</td><td>Admins and registered customers know their account username and password</td></tr>
<tr><td>Post-conditions</td><td>Admins and registered customers are successfully directed to the logged-in page</td></tr>
<tr><td>Frequency of Use</td><td>Frequently throughout the day</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Access to the main page and enter their account info, click “Log in”</td><td>Authenticate user account information</td></tr>
<tr><td>2</td><td>Successfully directed to the logged in page or still remain in the same page saying “Wrong account information”</td><td></td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>1. User account isn’t found
Prompt user to sign up for website
1. User password is incorrect
Notify user that password is incorrect
If 3 failed password attempts
Lock user login for 10 minutes</td></tr>
<tr><td>Developer Notes</td><td>Matthew Sredojevic</td></tr>
</table>

<table>
<tr><td>Use Case ID</td><td>UC-03</td></tr>
<tr><td>Use Case Name</td><td>Browse and view products</td></tr>
<tr><td>Description</td><td>Customers will be able to browse certain types of electronics with a search filter and see a grid layout of products of interest</td></tr>
<tr><td>Actors</td><td>Customers</td></tr>
<tr><td>Pre-conditions</td><td>Unregistered/registered customers get access to the main page of the web-app</td></tr>
<tr><td>Post-conditions</td><td>Customers are able to see lists of products they potentially want to exchange</td></tr>
<tr><td>Frequency of Use</td><td>Frequently throughout the day</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Fill in the search bar with filters/preferences, click “Search”</td><td>Loading inventory from database and update view</td></tr>
<tr><td>2</td><td>Modify the search bar or preferences
Choose quantity of product displays per page</td><td>Update view</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>The searching result can be generated based on titles, manufacturers, product descriptions.</td></tr>
<tr><td>Developer Notes</td><td>Hannie Ngo</td></tr>
</table>

<table>
<tr><td>Use Case ID</td><td>UC-04</td></tr>
<tr><td>Use Case Name</td><td>View product details</td></tr>
<tr><td>Description</td><td>Admins and customers when clicked to a certain item will be able to view product detail</td></tr>
<tr><td>Actors</td><td>All (admins and customers)</td></tr>
<tr><td>Pre-conditions</td><td>Admins have to log in, navigate to either their inventory page
Registered/unregistered customers are on the search result page</td></tr>
<tr><td>Post-conditions</td><td>Admins/customers could view product details</td></tr>
<tr><td>Frequency of Use</td><td>Often</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><td></td><td>Actor Action</td><td>System Response</td></tr>
<tr><td>1</td><td>Click on specific item of the list</td><td>Direct users to the product detail page with input parameter being the product ID
Update view displaying all information of a certain product</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>Generated views are different for admins/customers.
For admins : grid layout with customizations
For customers: single page layout with fixed features</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Hannie Ngo</td></tr>
</table>

Use Case ID	UC-05
Use Case Name	Add products
Description	Admins can add new products to the inventory
Actors	Admins
Pre-conditions	Admins have to log in and navigate to the inventory page

<table>
<tr><td>Post-conditions</td><td>Admins can add the new product to their inventory and are able to view the updated list</td></tr>
<tr><td>Frequency of Use</td><td>Often</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Access to the inventory page</td><td>Load available products that are currently available in data storage</td></tr>
<tr><td>2</td><td>Click “Add new product”</td><td>Navigate to a new page, inquiring admins to fill in product information</td></tr>
<tr><td>3</td><td>Fill in all product information including name, model, condition, etc., click “Confirm and Add”</td><td>Update database
Reload view</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Hannie Ngo</td></tr>
</table>

Use Case ID	UC-06
Use Case Name	Edit product
Description	Admins can edit information of products in the inventory
Actors	Admins
Pre-conditions	Admins have to log in, navigate to their inventory page
Post-conditions	Admins are able to view the list with their updated products
Frequency of Use	Often

<table>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Access to the inventory page</td><td>Load available products that are currently available in data storage</td></tr>
<tr><td>2</td><td>Choose specific product
Click “Edit new product”</td><td>Navigate to a page already filled with details which are open for customizations</td></tr>
<tr><td>3</td><td>Edit product information including name, model, condition, etc., click “Confirm and Update”</td><td>Update database
Reload view</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Matthew Sredojevic</td></tr>
</table>

Use Case ID	UC-07
Use Case Name	Delete product
Description	Admins can delete a single product or a list of products in the inventory
Actors	Admins
Pre-conditions	Admins have to log in, navigate to their inventory page
Post-conditions	Selected product(s) are deleted from their list and admins are able to view the updated list
Frequency of Use	Often

<table>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Access to the inventory page</td><td>Load available products that are currently in data storage</td></tr>
<tr><td>2</td><td>Choose one or more product that they would like to delete, click “Delete”</td><td>Update database
Reload the view</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Hannie Ngo</td></tr>
</table>

Use Case ID	UC-08
Use Case Name	Add items to shopping cart
Description	Registered customers will be able to add products of interests to their shopping cart
Actors	Customers
Pre-conditions	Customers have to log in, navigate to their inventory page
Post-conditions	Selected products added to the shopping cart and customers are able to view the current cart
Frequency of Use	Often

<table>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>On the inventory page, for their favorite products, click “Add to shopping cart”</td><td>Update items and quantities in shopping cart</td></tr>
<tr><td>2</td><td>Modify quantity of product the customer would like to purchase</td><td></td></tr>
<tr><td>3</td><td>Click “Check out”
or “Continue shopping”</td><td>Direct customers to payment page or back to the inventory page</td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Hannie Ngo</td></tr>
</table>

<table>
<tr><td>Use Case ID</td><td>UC-09</td></tr>
<tr><td>Use Case Name</td><td>Check out and confirm buying</td></tr>
<tr><td>Description</td><td>Customers can check out their shopping cart and confirm payment</td></tr>
<tr><td>Actors</td><td>Customers</td></tr>
<tr><td>Pre-conditions</td><td>Customers have to log in, navigate to the shopping cart, making sure of their selections and want to pay for them</td></tr>
<tr><td>Post-conditions</td><td>Customers are done with transactions and receive confirmation email</td></tr>
<tr><td>Frequency of Use</td><td>Often</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><th></th><th>Actor Action</th><th>System Response</th></tr>
<tr><td>1</td><td>Click “Check out”</td><td>Update current view of the shopping cart</td></tr>
<tr><td>2</td><td>Click “Confirm payment”</td><td>Reload view
Update database
Send email confirmation</td></tr>
<tr><td>3</td><td>Receive email alerts</td><td></td></tr>
</table>
</td></tr>
</table>

Variations	On the checkout page, customers can either go back to “Continue to Shopping” or proceed with “Confirm payment”
Exceptions	None
Developer Notes	**Robert Ladd**

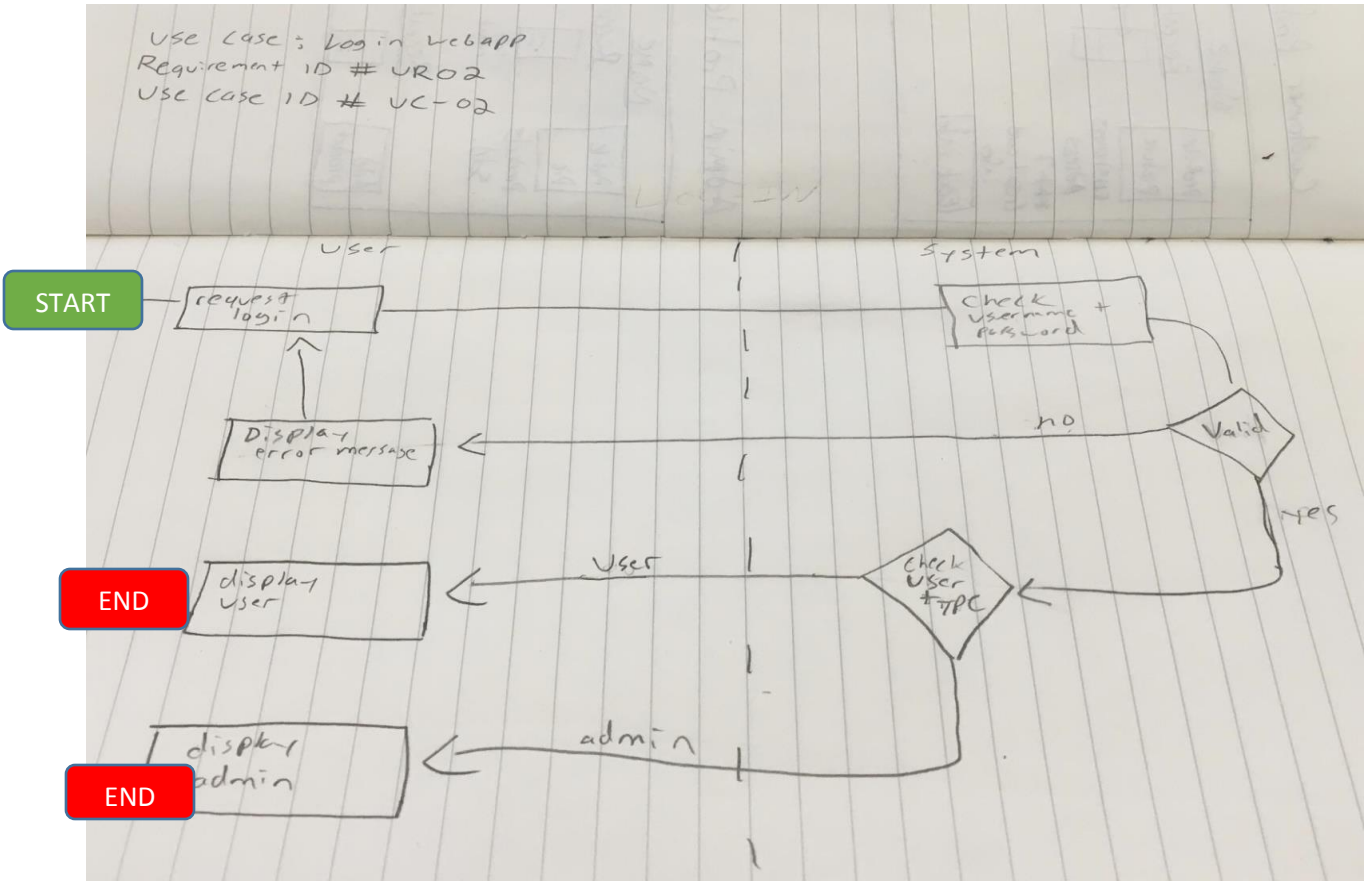
Use Case ID	UC-10
Use Case Name	Edit account profile
Description	Customers are able to edit account profile including payment information and shipping address
Actors	Customers
Pre-conditions	Customers are already registered and would like to maybe add/change credit card information and shipping addresses
Post-conditions	Customers’ profiles get updated for future transaction
Frequency of Use	Often
Flow of Events	

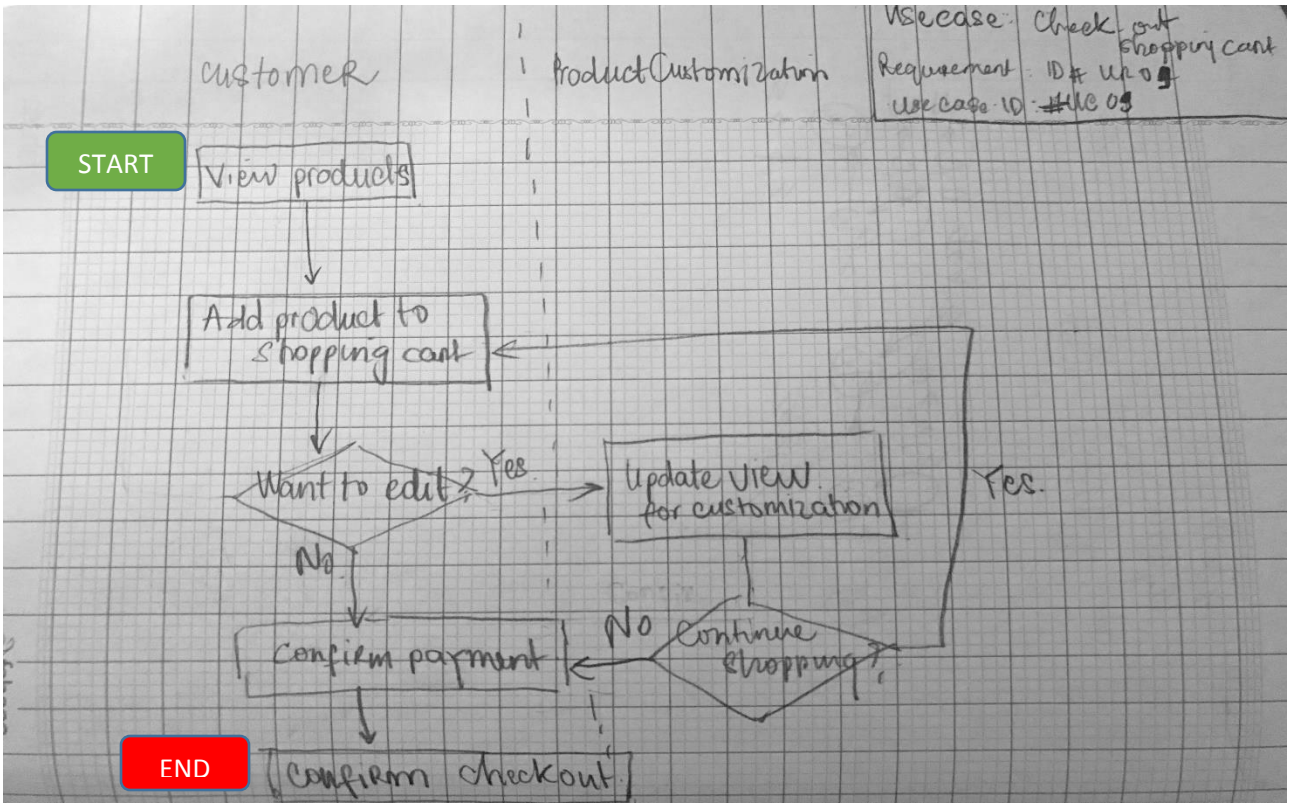
	Actor Action	System Response
1	Click on “My account”	Reload view with current information loaded from database
2	Customize such features as shipping address, credit card information Click “Confirm”	Update database Direct back to the main page

Variations	None
Exceptions	None
Developer Notes	**Hannie Ngo**

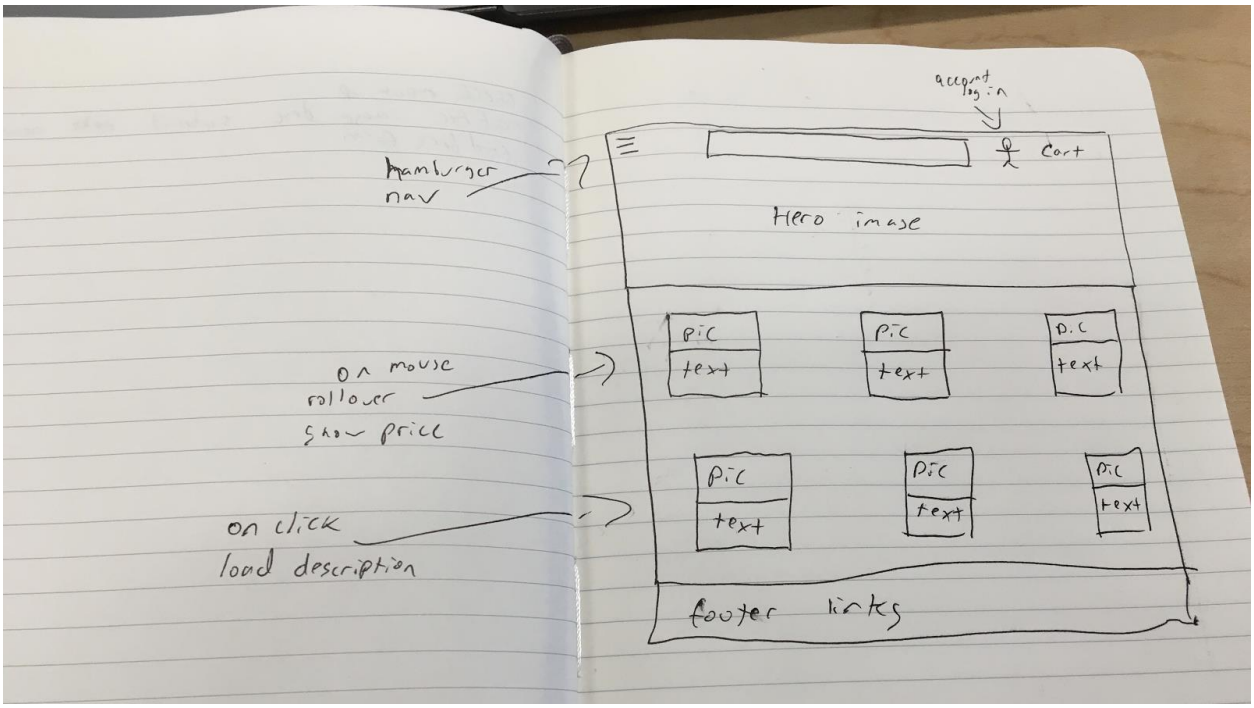
<table>
<tr><td>Use Case ID</td><td>UC-11</td></tr>
<tr><td>Use Case Name</td><td>Email alerts</td></tr>
<tr><td>Description</td><td>When a customer successfully perform a transaction, email confirmation will be sent</td></tr>
<tr><td>Actors</td><td>Customers</td></tr>
<tr><td>Pre-conditions</td><td>Customers have to finish a transaction/exchange</td></tr>
<tr><td>Post-conditions</td><td>Both will receive email alerts within 5 minutes</td></tr>
<tr><td>Frequency of Use</td><td>Often</td></tr>
<tr><td>Flow of Events</td><td>
<table>
<tr><td></td><td>Actor Action</td><td>System Response</td></tr>
<tr><td>1</td><td></td><td>Send email alerts to the buying party
Update the inventory database after the product get purchased
Reset shopping cart</td></tr>
<tr><td>2</td><td>Receive email alerts
See default shopping cart</td><td></td></tr>
</table>
</td></tr>
<tr><td>Variations</td><td>None</td></tr>
<tr><td>Exceptions</td><td>None</td></tr>
<tr><td>Developer Notes</td><td>Robert Ladd</td></tr>
</table>

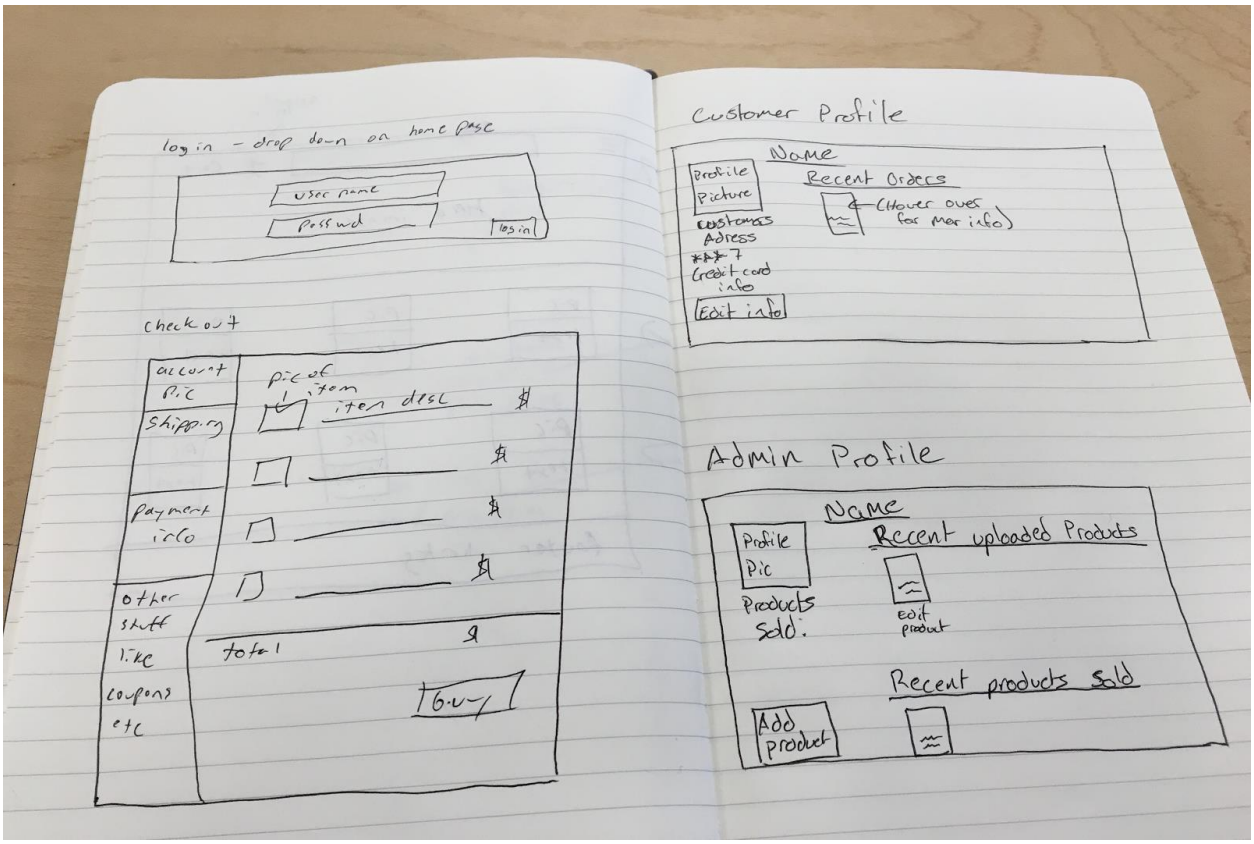
Activity Diagram



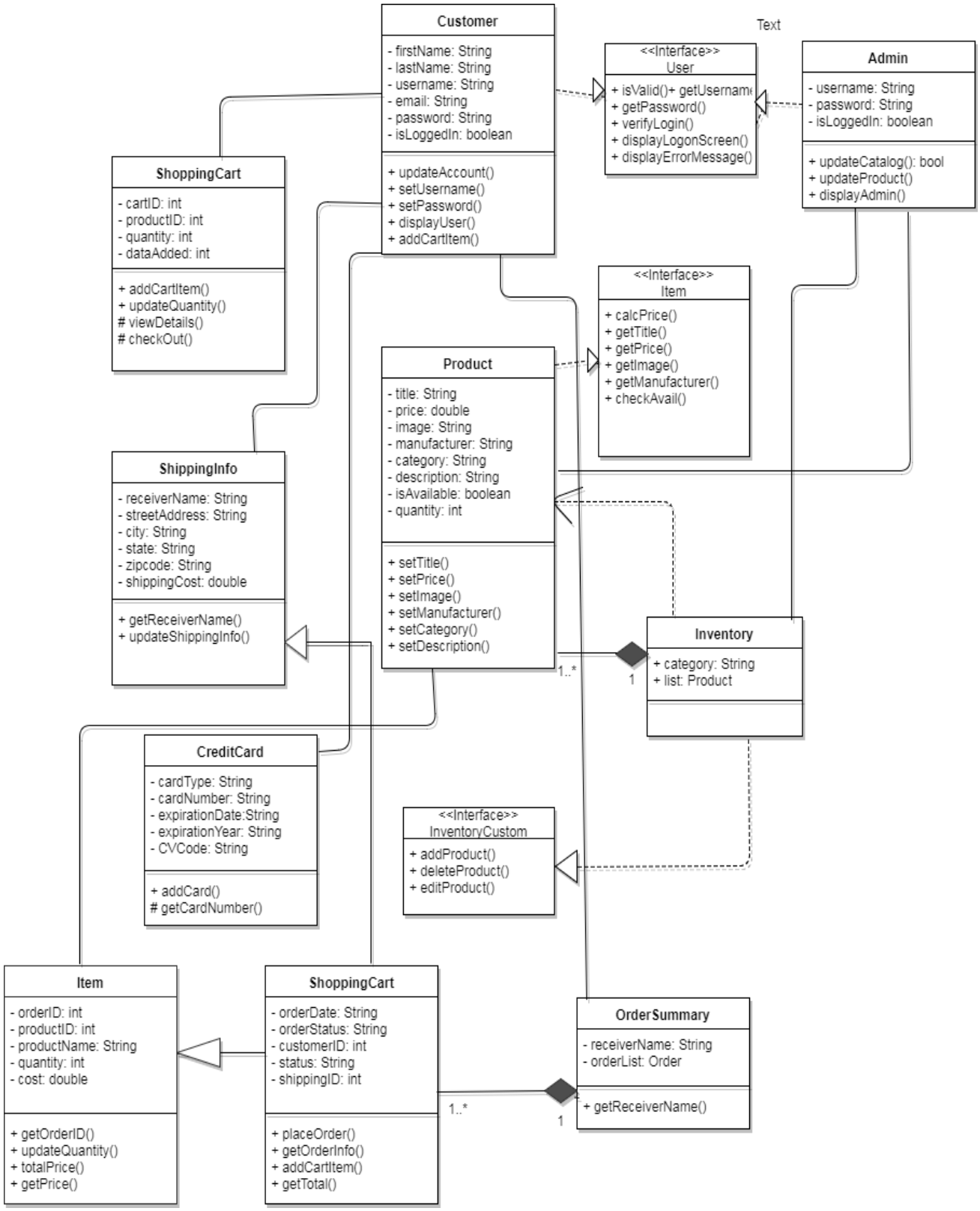


UI Mockup

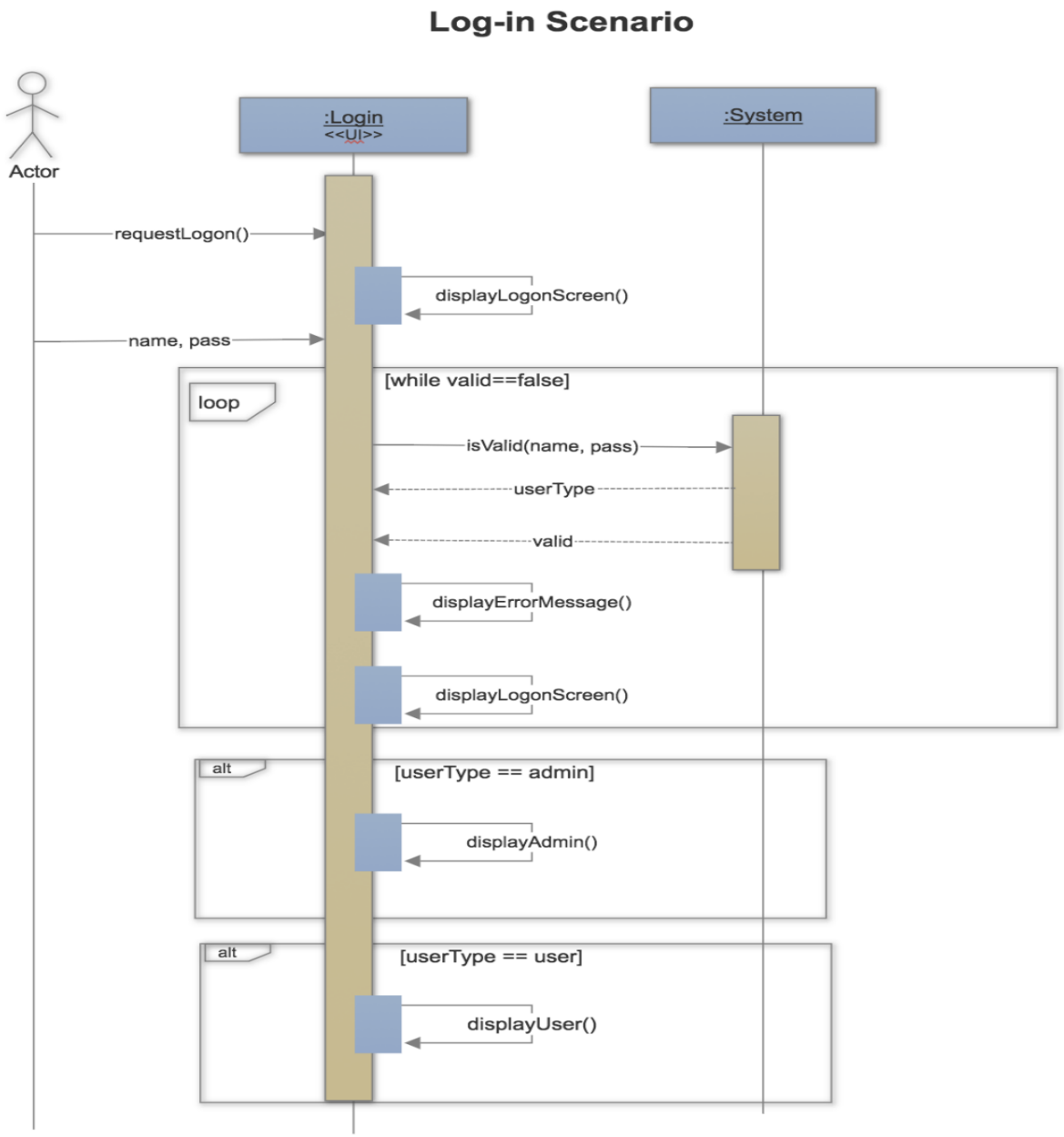
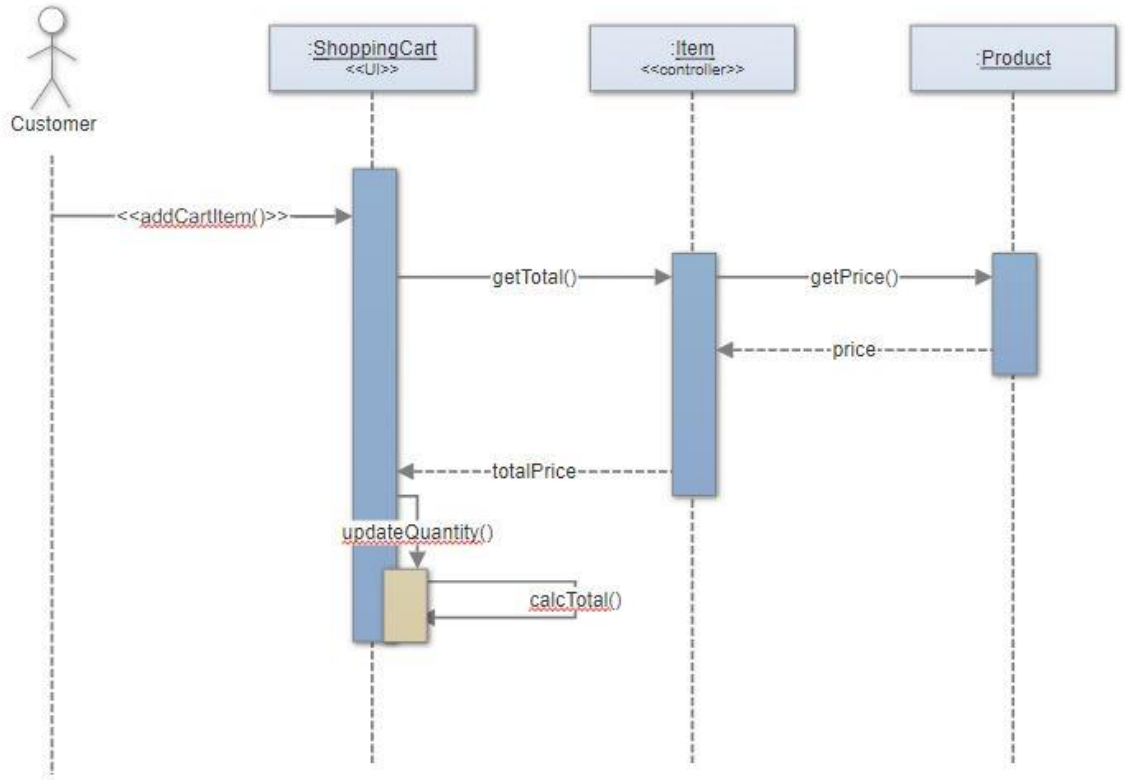

account log in
cart
hamburger nav
Hero image
pic
text
on mouse rollover show price
on click load description
footer links


log in - drop down on home page
user name
Passwd
log in
check out
account pic
shipping
payment info
other stuff like coupons etc
pic of item
item desc
total
Go
Customer Profile
Name
Profile picture
Recent Orders
customers Adress
*** 7 Credit card info
Edit info
Admin Profile
Profile Pic
Recent uploaded Products
Products Sold
Edit product
Recent products sold
Add product

Class Diagram



Sequence Diagram



Sequence Diagram: Shopping Cart