QualitySale

Development Report

BUSINESS ANALYST

PRODUCT MANAGER

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Contents

Project purpose

What is the need?

The purpose of the project is to create an e-commerce web site which enables the clients to do on-line purchasing the quality consumer products and food with reasonable prices.

Applicability

The users for this web site will be:

1. The client.
2. The store owner.

The client will have the convenience from online purchasing. The client will learn the product features and price from the web pages. The store owner can have 24/7 business hours for client to shop, save the cost of operating a physical store and attract clients from different geographical locations.

Requirements

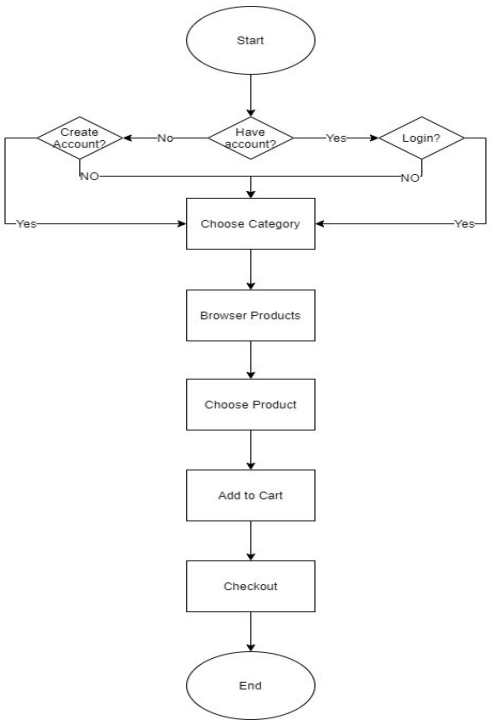
1. The client must be able to browser the products. (Must)
2. The client must be able to see the detailed information of the product. (Must)
3. The client should be able to search for a specific product. (Should)
4. The client must be able to choose the product and put them into the shopping cart. (Must)
5. The client must be able to change the quantity of the product in the cart. (Must)
6. The client must be able to check out the cart by credit cards. (Must)
7. The store owner must be able to add/remove products to the product database. (Must)
8. The store owner should be able to search for a specific product. (Should)
9. The store owner must be able to change the product information. (Must)
10. The products in the database must be displayed on the web page, with the picture and the attributes. (Must)
11. The front-end must implement the HTML and CSS files. (Must)
12. The back-end must implement Oracle SQL database. (Must)
13. The front-end action links to the back-end through PHP. (Must)
14. The client could be able to see the history price within 12 months (Could).
15. Client can register and login an account from social media of Google+;
16. Client can register and login an account from social media of twitter;
17. Client can register and login an account from social media of Facebook.
18. Implement public functions to enhance OOP design.

Structure of web site

Logical Structure

Business process

The basic business process of the client is as below:



There are supplementary use cases as below:

1. Client chooses to be a vendor of QualitySale;
2. Client sends comments/service request;

Description:

Process A. Basic business process (BPA):

1. If the customer has an account, he/she logins (or not, that process also including logout option).
2. If the customer doesn't have an account, he/she chooses to create an account (or not) (registration).
3. The customer searches for the product.
4. The customer adds the product into the shopping cart.
5. The customer verifies the shopping cart, check out.
6. The customer places the order.
7. The system handles the session by browsing multiple products.
8. The customer adds multiple products into the shopping cart.
9. The customer modifies the contents of the shopping cart.

The supplementary business processes as below (BPB, BPC, BPD), which could be implemented in later stages with an incremental develop approach:

Process B. The customer chooses to be a vendor of QualitySale.

1. The customer chooses the page of vendor.
2. The customer reads and writes the message.
3. The customer submits the intension message.

Process C. The customer sends comments/service request.

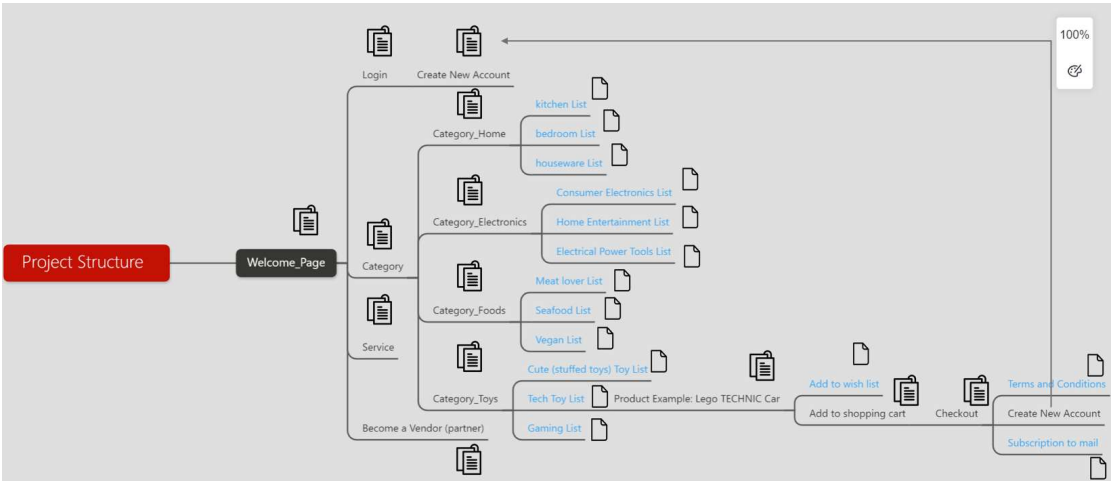
1. The customer chooses the page of service.
2. The customer reads and writes the comments and email address.
3. The customer submits the comments.

Process D. Administrator maintains the database.

1. The administrator logins.
2. The administrator updates the quantity of the products.
3. The administrator updates the description of the products.
4. The administrator updates the images of the products.

File relationship

The overall logical structure is as below:



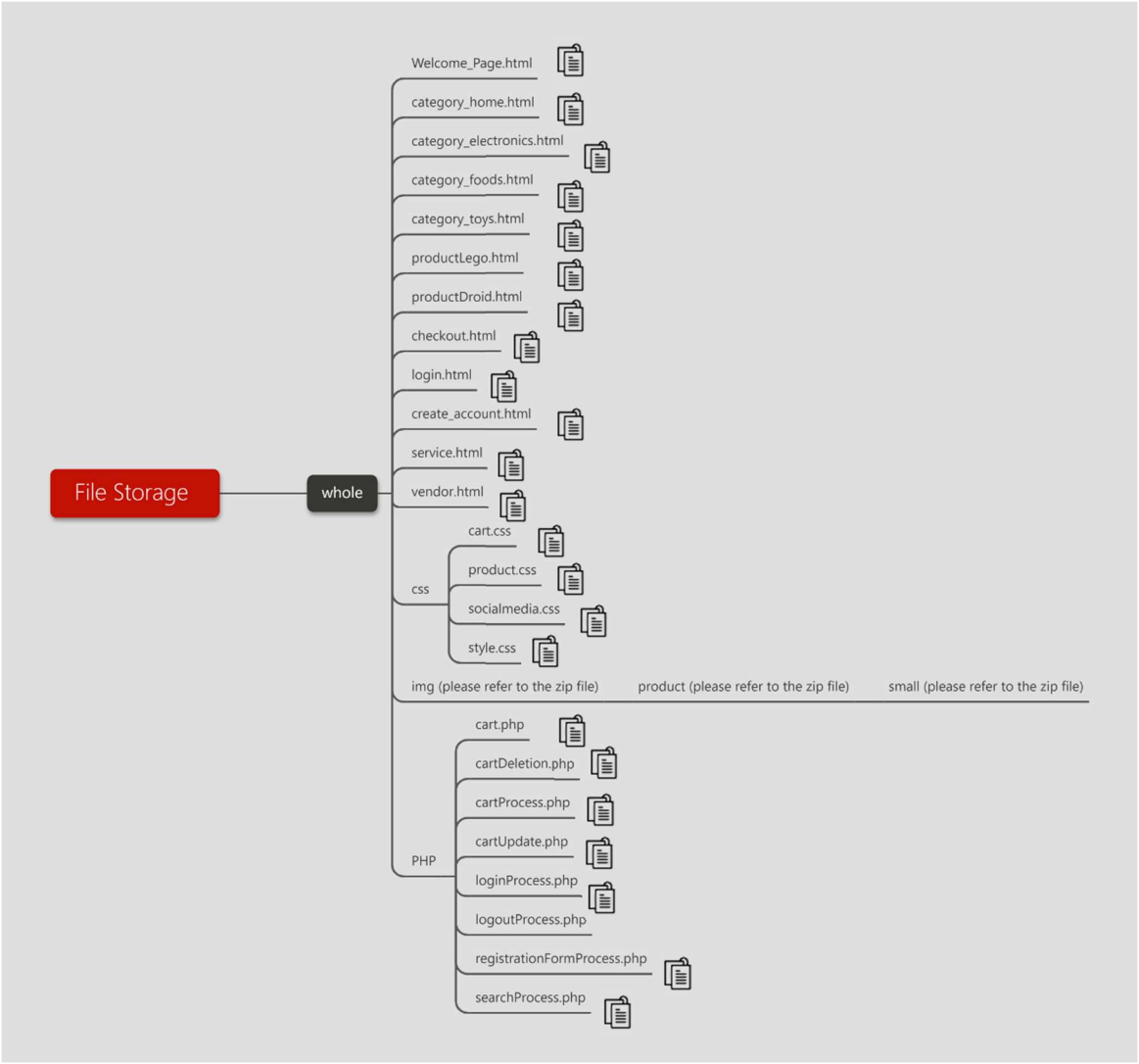
: file is in place. : file is under develop.

Notion:

1. In every page, user can jump to the login page;
2. Every page has the “Back” link return to the “Welcome” page, except:
    a. “Welcome” page itself, and
    b. Checkout page has the “Back” link to the “Shopping Cart” page.

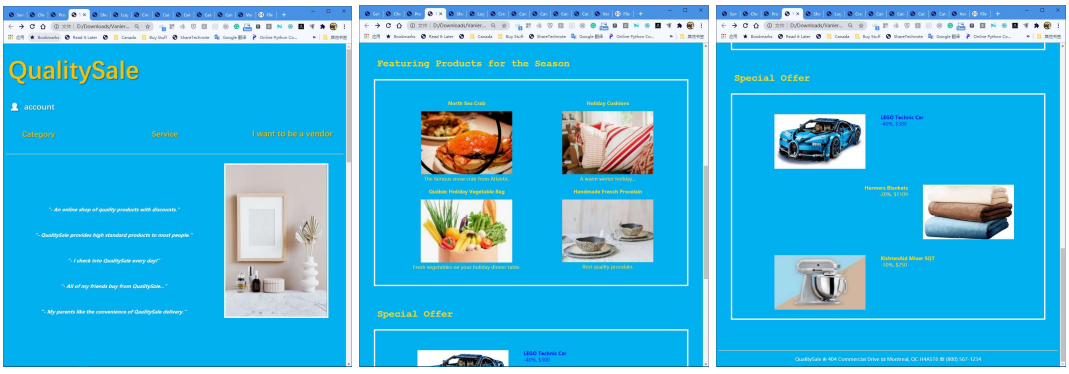
File Directory Structure

The file storage structure is as below:



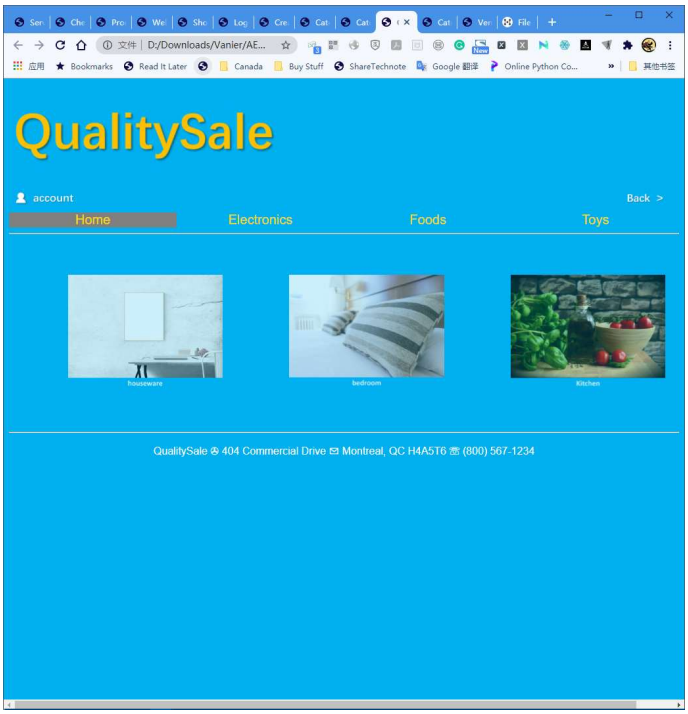
Front-end: Page design implemented and techniques applied

1. Welcome page
   Using link, image, inline style, external style, code symbals.



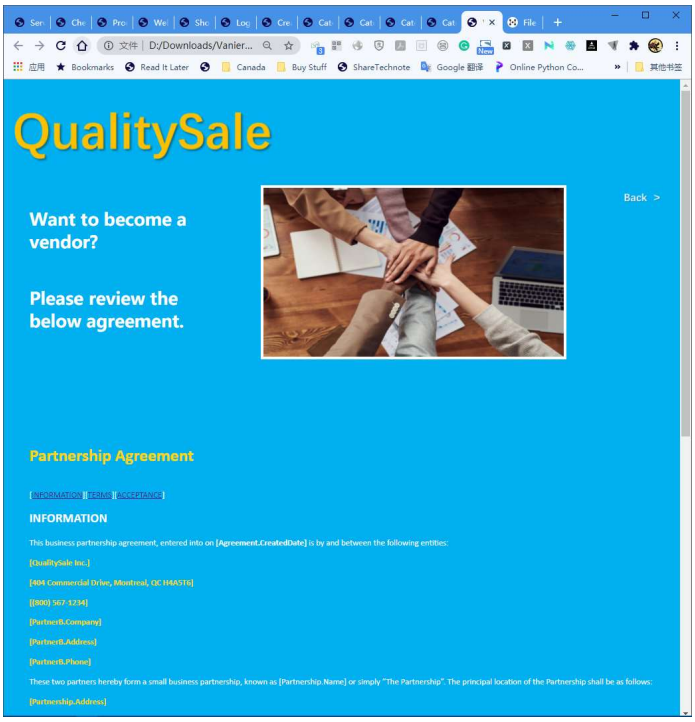
2. Category (Home)

Using embedded style, elements column arrangement, division, class, hover style control.



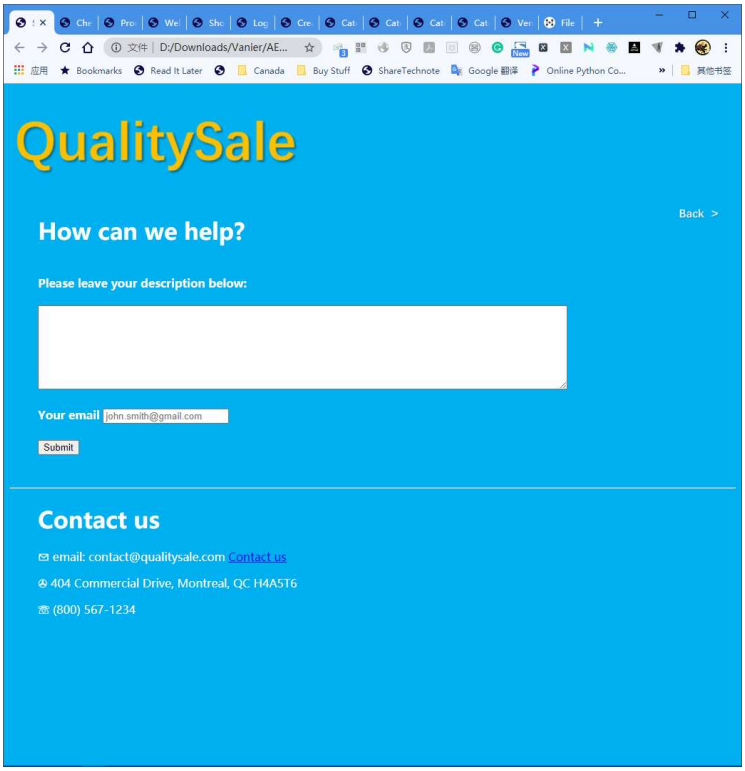
Similar techniques are implemented in category_electronics.html, category_foods.html, category_toys.html.

3. Vendor page
   Using in-page reference, in-line style control



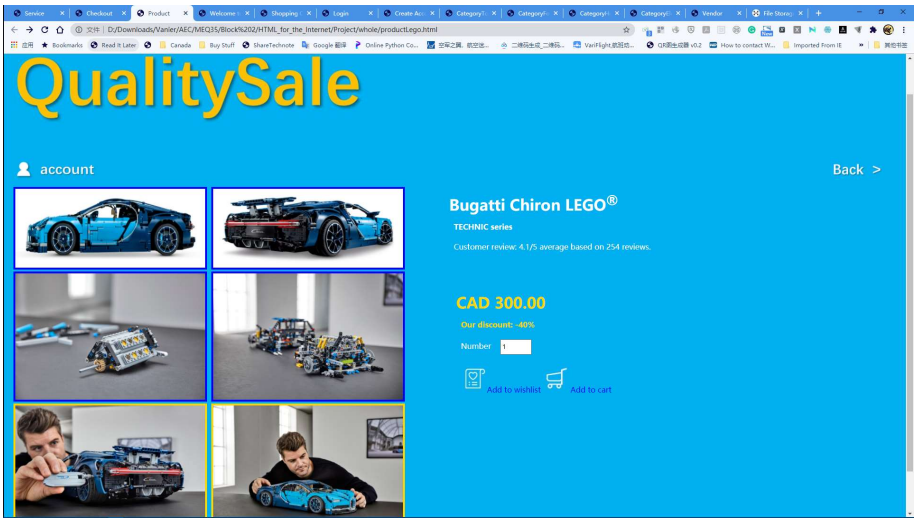
4. Service page

   Using text area input, style control, code symbols and mailto.



5. Product page

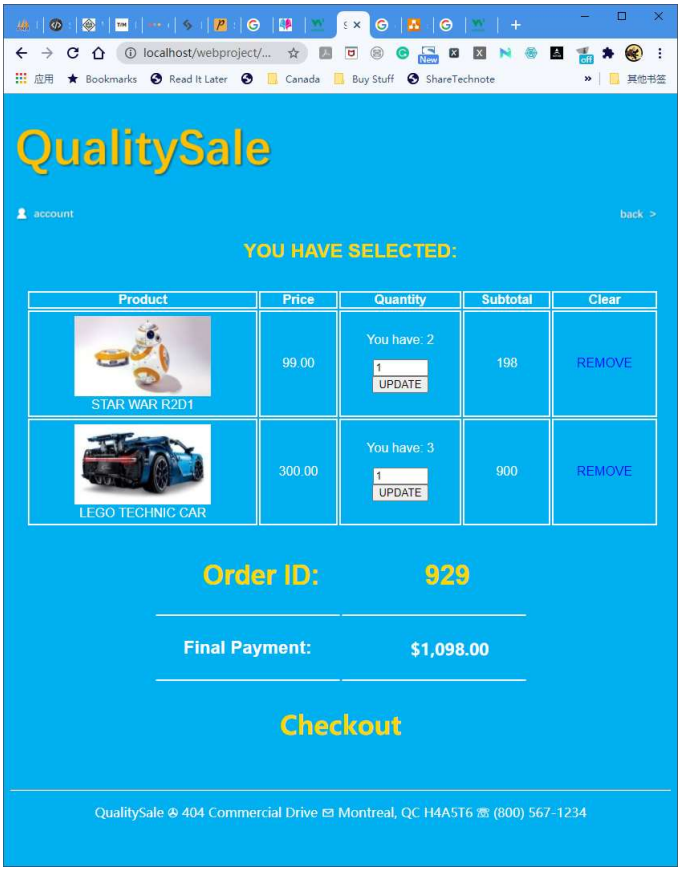
   Using external style setting, input method, block definition and style control, clickable image.



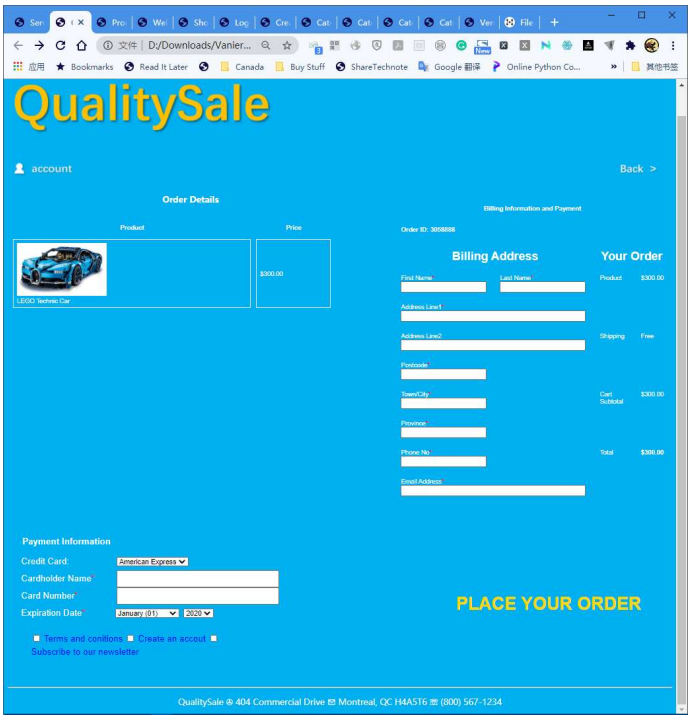
6. Shopping cart

   Using table, table style control, input methods of dropdown menu, button and its

style control. Features including multiple items, removal and quantity editing.

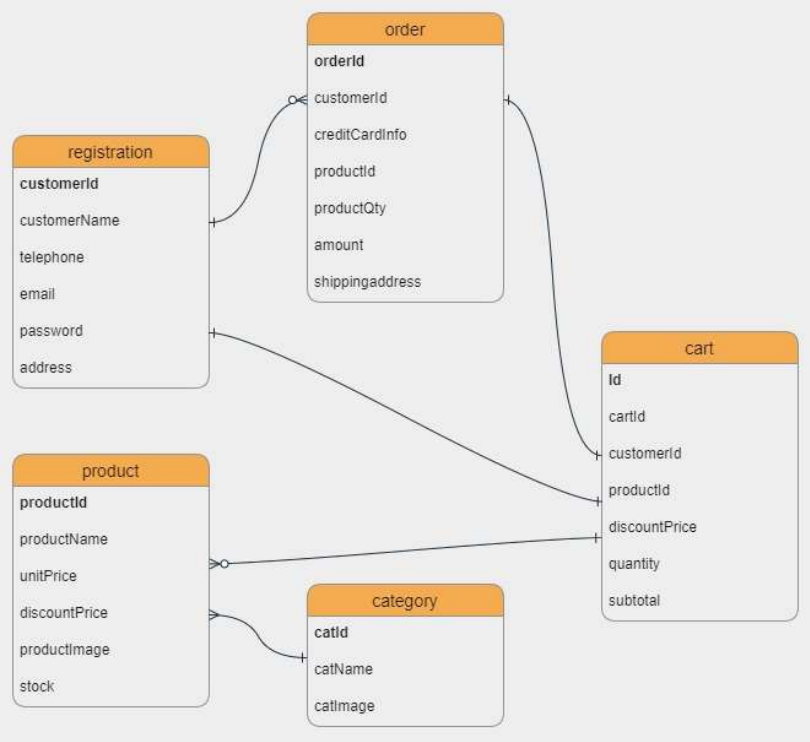


7. Checkout page
   Using table, form, input style control, division and id reference.



Back-end: Tables and Class structure design

1. Definition of the table structure



Note: category table is not implemented in the prototype.

- **Explanation**

The basic structure includes following tables:

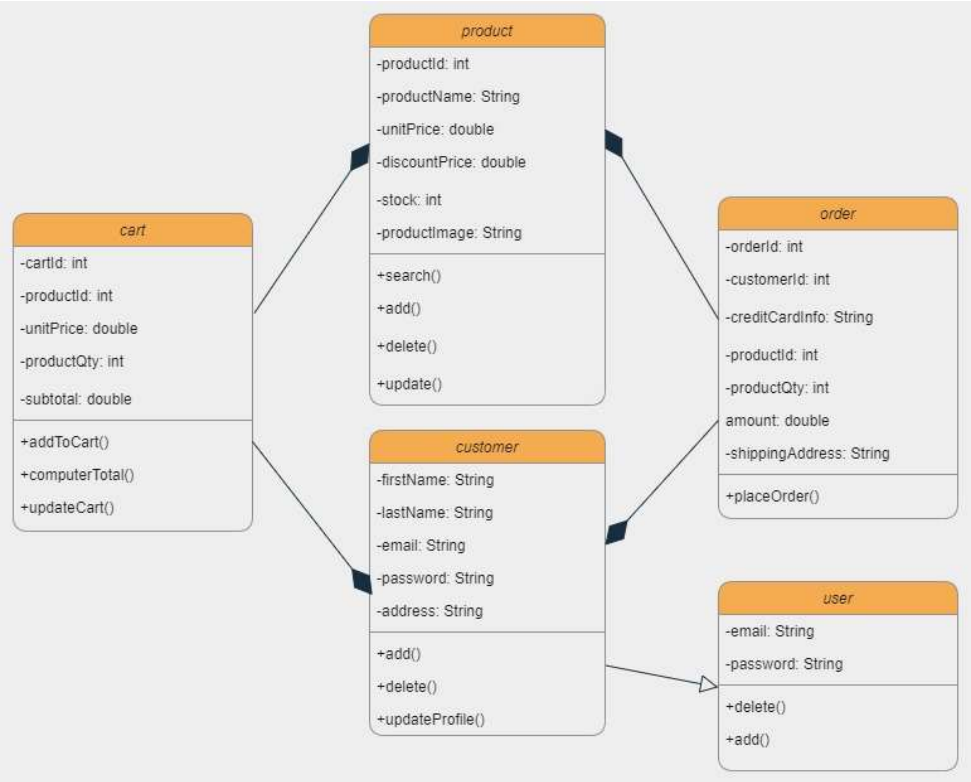
- Cart (including fields: Id, cartId, customerId, productid, unitPrice, quantity, and subtotal)
  - Relationship to product: one to optional many
  - Relationship to customer: one to one
  - Relationship to order: one to one
- Category (including fields: catId, catName, and catImage)
  - Relationship to product: one to optional many
- Registration (including fields: customerId, customerName, telephone, email, password, and address)
  - Relationship to order: one to optional many
  - Relationship to cart: one to one
- Order (including fields: orderId, customerId, amount, creditCardInfo, email, telephone, and shippingaddress)
  - Relationship to cart: one to one
  - Relationship to customer: optional many to one
- Product (including productId, productName, unitPrice, discountPrice, productImage, and stock)

- Relationship to category: many to one

Relationship to cart: optional many to one

2. OOProgramming structure

   To implement OOP, there are following classes are identified: customer, product, cart, and order. Objects can be instantiated from these classes



Since the order and the cart cannot exist independently without customer and product, they have the "composition" relationship with customer and product. Product, cart, and customer are relating corresponding tables, so following functions shall be defined:

- Cart: addToCart(), computerTotal(), updateCart()
- Customer: add(), delete(), updateProfile()
- Product: search(), add(), delete(), update()

They take the input from the corresponding forms and store them in the tables accordingly.

Note: the functions are now handled by PHP process files, the public functions will be implemented in later stage.

Project Progress

Requirements implementation stages (subject to progress and requirements change)

BPA Implementation stages:

Stage	Implementation	Effort	Start Date	Delivery Date
Stage 1	BPA1, BPA2			
Stage 2	BPA3, BPA4, BPA5, BPA6			
Stage 3	BPA7, BPA8, BPA9			

BPB/BPC/BPD Implementation stages:

Stage	Implementation	Effort	Start Date	Delivery Date
Stage 4	BPB1, BPC1, BPB2, BPB3			
Stage 5	BPC2, BPC3			
Stage 6	BPD1, BPD2, BPD3, BPD4			

Chronical updates and incremental contents:

2020-11-27	Add basic pages including Welcome, service, category_home, login and create account, vendor.
2020-12-09	Add page category_electronics, category_food, category_toy (embedded style, links and images); add page cart, cart.css (element arrangement, radio buttons and external style); add page checkout (table); add page style (multiple styles); changed the overall structure by removing “Thank you” page.
2020-12-18	Update the checkout, cart and create account page by cleaning the HTML/CSS files; add login by social medias; add product page, including image library.
2021-01-11	1. Created MySQL script for the backend database. 2. Created client registration, login and logout processes at the backend. 3. Created shopping cart handling backend process for single item addition. 4. Created product search functions with backend process. 5. Utilizing sessions for maintaining client login. 6. Updated ERD according to the latest implementation.
2021-01-14	1. Modify login and registration process with OOP method. 2. Enhance the shopping cart by allowing client adding multiple items and giving the summary order details. 3. Enhance the shopping cart by allowing client removing the added items.

	4. Enhance the shopping cart by allowing client editing the added items. 5. Update the Gap and listed the future plan.

Gaps Identified

1. Requirements 7 - 9 have not been implemented (administration functions);
2. External APIs implementation is expected when integrating the back-end, involving:
    a. Social media login;
    b. Payment;
3. Documents need to be completed.
4. To implement array approach in the cart.php.
5. Finishing with the features of delivery options and coupon application.
6. Finishing the order page and relating process.
7. Enhance the front-end design.

Glossary

HTML: Hypertext Markup Language: describes a document's content and structure.

CSS: Cascading Style Sheets is a style sheet language used on the Web.

Inline element: marks a section of text within a block-level element, often used to format characters and words.

Embed style definitions in a document head: cannot apply to another sheet.

ID: used to jump to a specific location within a document, you first need to mark that location, one way to identify elements in an HTML.

External style sheet is a text file that contains style declarations: It can be linked to any page in the site, allowing the same style declaration to be applied to the entire site.

Division: containers can be resized and floated to create different page layout.

BP[A, B, C, D]: business process [A, B, C, D].