

StopAndShop

CALIFORNIA STATE UNIVERSITY, LONG BEACH

CECS575 – OBJECT ORIENTED ANALAYIS & DESIGN

ASSIGNMENT 1

GROUP 5

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Description & GitHub Link

StopAndShop is a multibillion-dollar technology corporation functioning on a B2C [Business to consumer] model, specializing in online retail purchasing. The designated e-commerce website handles orders, accepts payments, and provides customer service. The customers will have several choices to ease their browsing. There is a plan to add the Wishlist feature to add customers' desired products to a Wishlist. After adding the products to the cart, an order can be placed. Once the order gets placed, the order status can be seen or maintained. The website will be based on an E-Commerce essential background, where customers will have the option to select products from several categories. ***StopAndShop*** sells many products through its website, including physical goods and digital products.

Physical goods: Items such as clothing, furniture, food supplies are tangible products stored in a warehouse. ***StopAndShop*** collaborates with sellers and displays goods on the website where customers can add them to cart/save for later or purchase. Upon purchase, the organization ships items to the customer collaborating with their transport and logistics department.

Digital products: Digital products include online courses, software, podcasts, music, and e-books. They are becoming increasingly popular. ***StopAndShop*** has an unmediated relationship with the content creators, allowing customers to enjoy the content first, straight from the creators.

GitHub link - https://github.com/VidyashreeNagaraja/cecs575_group05.git

Use Case Scenario

Use Case #1	Visit a site
Actors	Customer
Pre-Conditions	Validate Customer
Flow on Control	<ul style="list-style-type: none">• User logs in using credentials• User Identity Verification
Post-Conditions	Grant customer access to the website
Error-Conditions	User input fields are not valid <ul style="list-style-type: none">• No empty field• password & username must be larger than 8 characters• password must be a combination of numbers and special characters
Alternative Flow	Email triggered to the user with one time password to login

Use Case #2	Add Items to Shopping Cart
Actors	Customer
Pre-Conditions	Check item's availability
Flow on Control	<ul style="list-style-type: none">• Search for Product in Database• Display Product info to customer• Add item to cart
Post-Conditions	Item added to cart
Error-Conditions	<ul style="list-style-type: none">• Item not found/out of stock
Alternative Flow	Suggest relevant items

Use Case #3	Edit Items in the Shopping Cart
Actors	Customer
Pre-Conditions	Shopping cart not empty
Flow on Control	<ul style="list-style-type: none">• Select item to edit• Update quantity of items in the cart
Post-Conditions	Item quantity updated
Error-Conditions	<ul style="list-style-type: none">• Item out of stock (for the quantity mentioned)

Use Case #4	Remove Items from the Shopping Cart
Actors	Customer
Pre-Conditions	Shopping cart not empty
Flow on Control	<ul style="list-style-type: none"> Select an item to remove Remove an item from the cart
Post-Conditions	Item removed from the cart
Error-Conditions	Item still present in the cart

Use Case #5	Check Order Status
Actors	Owner, Customer
Pre-Conditions	Order must exist
Flow on Control	<ul style="list-style-type: none"> Select product to track Check status
Post-Conditions	Order of the status is displayed
Error-Conditions	No item order placed

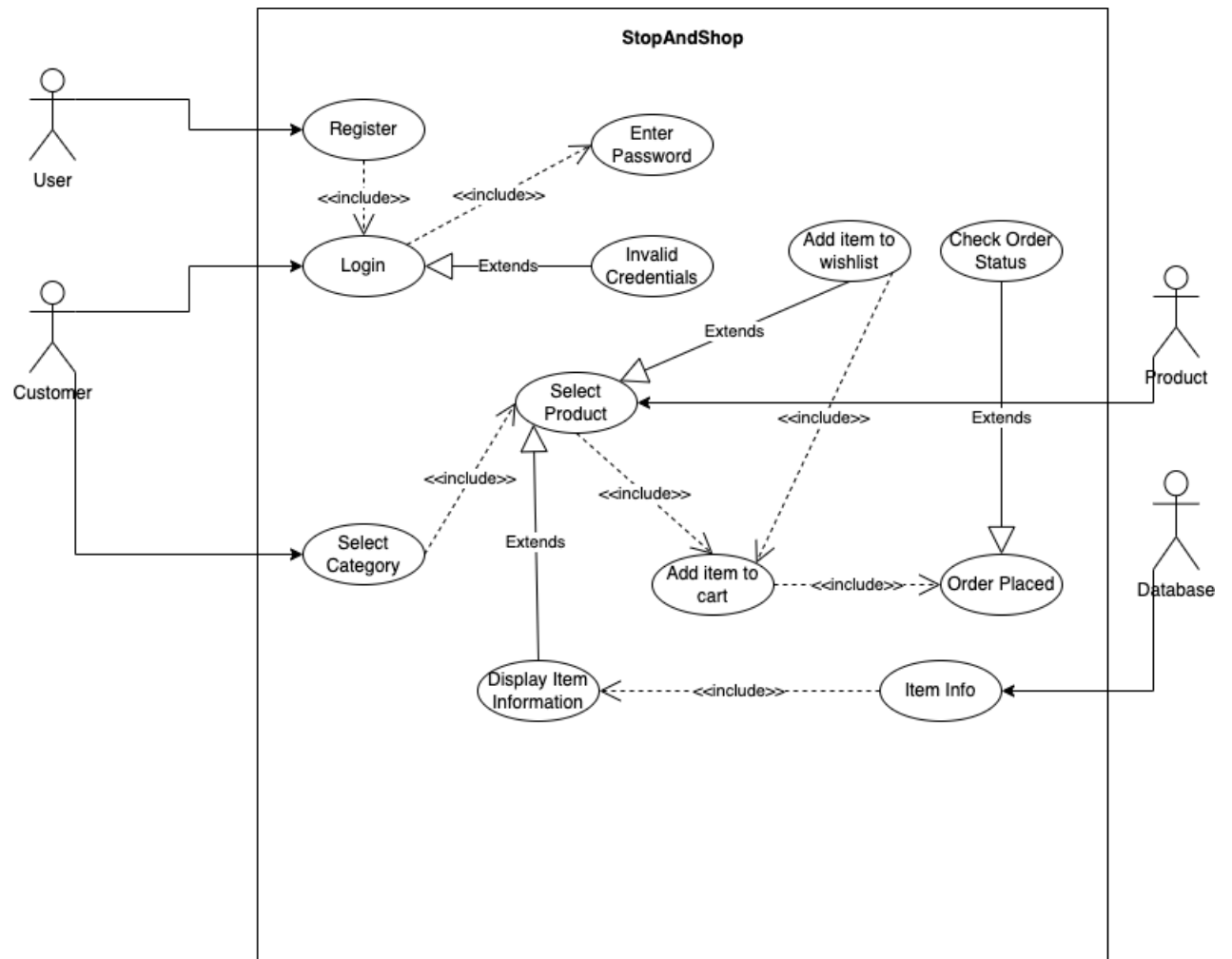
Non Functional Requirements :

ID	NF1
Name	Only Authenticated and Authorised users must be given access to the website.
Type Of Requirement	Security
Criteria	Grant access using MFA (Multi factor Authentication) only.
Test	Security team will test to ensure without MFA system cannot be accessed.

ID	NF2
Name	Reflect the changes made from app or website instantly.
Type Of Requirement	Usability
Criteria	High performance data base transaction is implemented to avoid any kind of lags in the system
Test	Backend development team will do performance tests.

ID	NF3
Name	Notify the user of unexpected logins/failed attempts for system to be reported.
Type Of Requirement	security
Criteria	Alert mechanism is in place to notify the system admin in case of unexpected logins/failed attempt. Session time out mechanism must be in place.
Test	Security team will ensure that users are locked out in case of wrong password entry five times in a row.

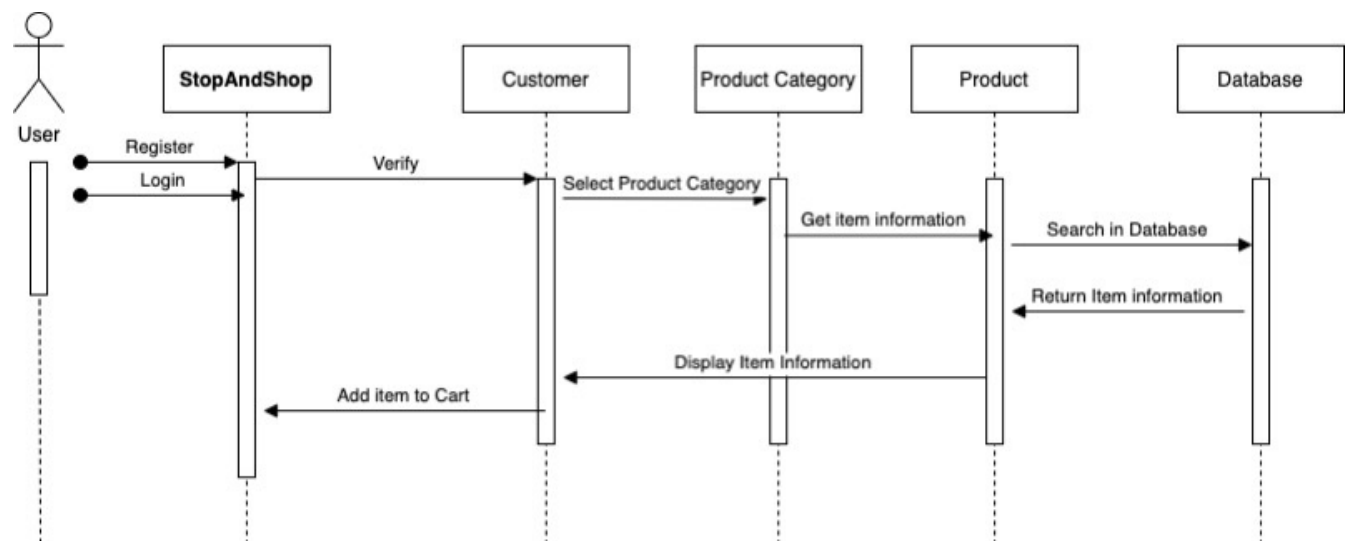
UML Use Case Diagram



UML System Sequence Diagram

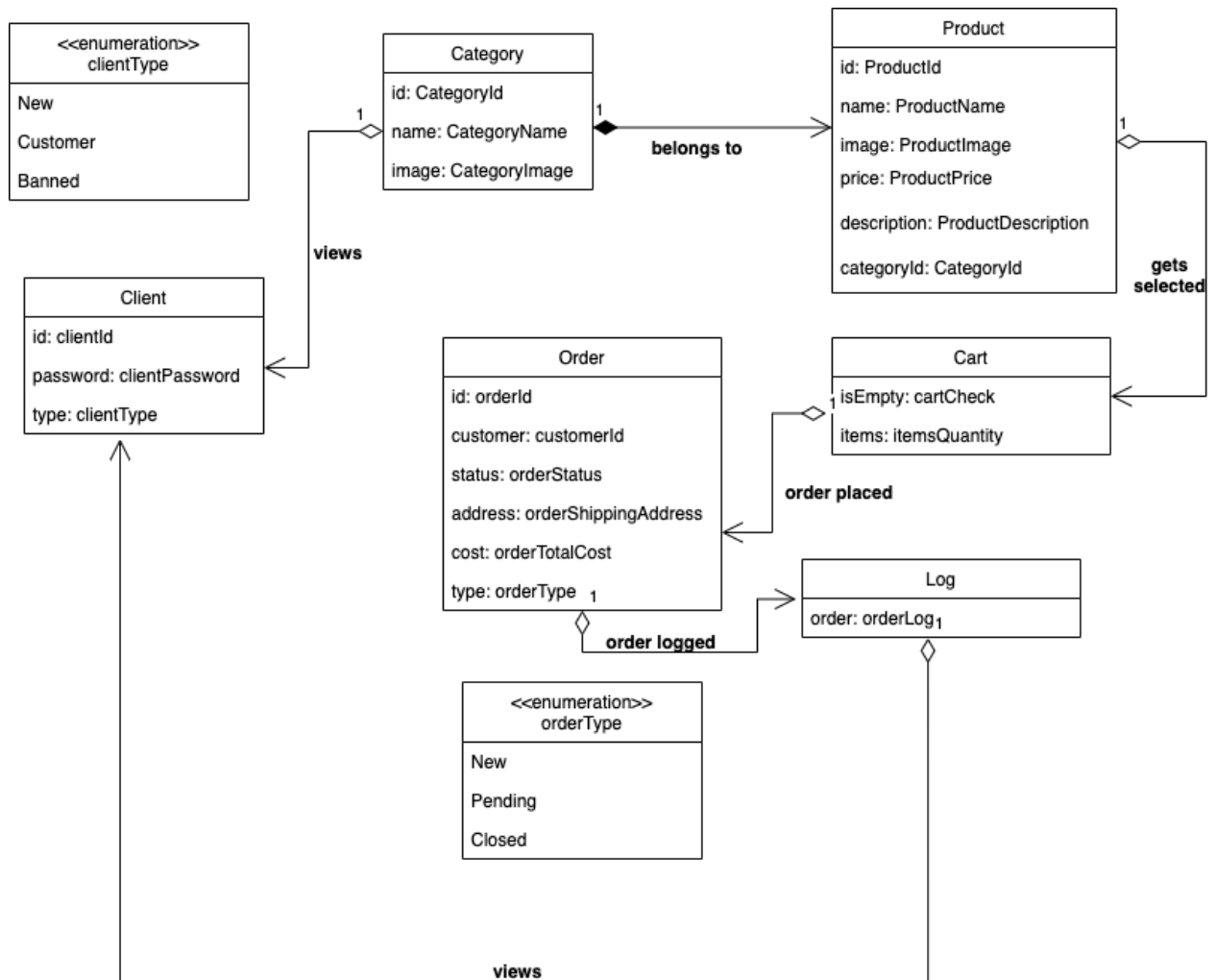
The sequence diagram depicts the main use case :

Use Case #2	Add Items to Shopping Cart
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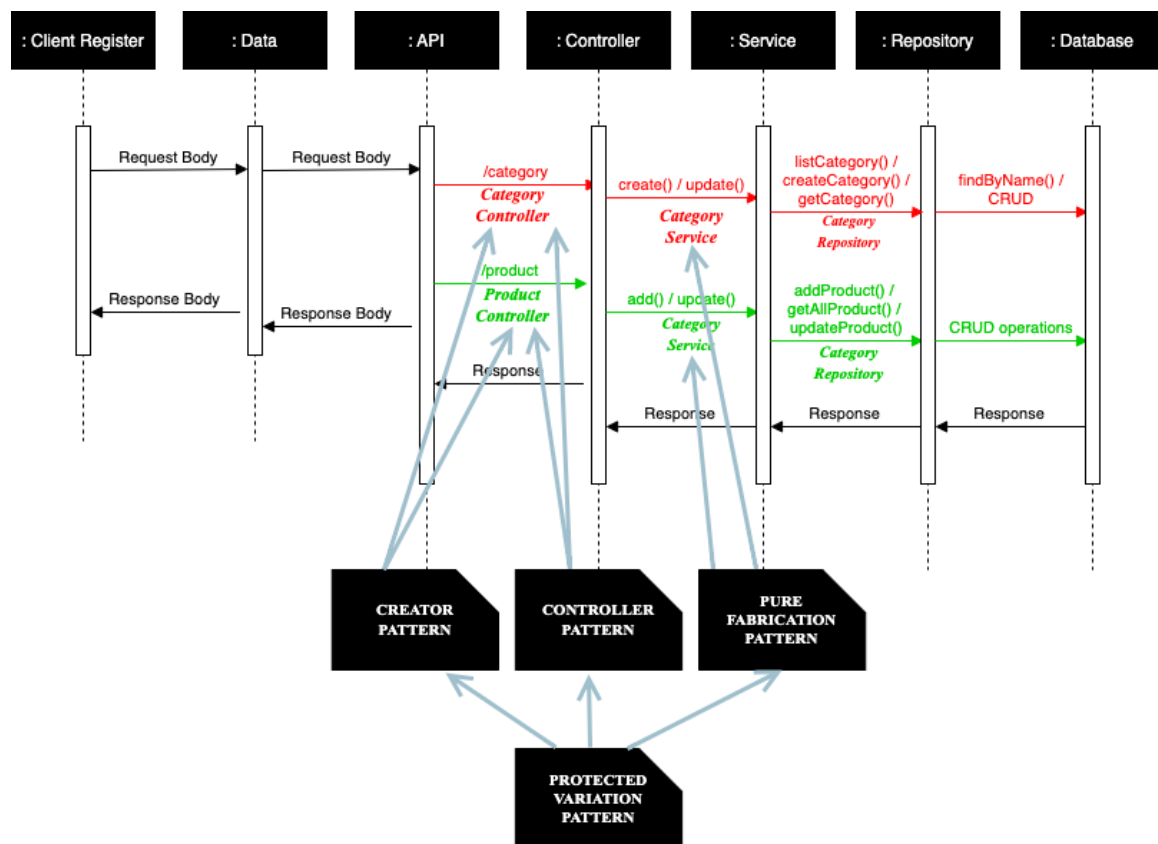
UML Domain Model

This domain diagram depicts the flow to view the product category and place the order.

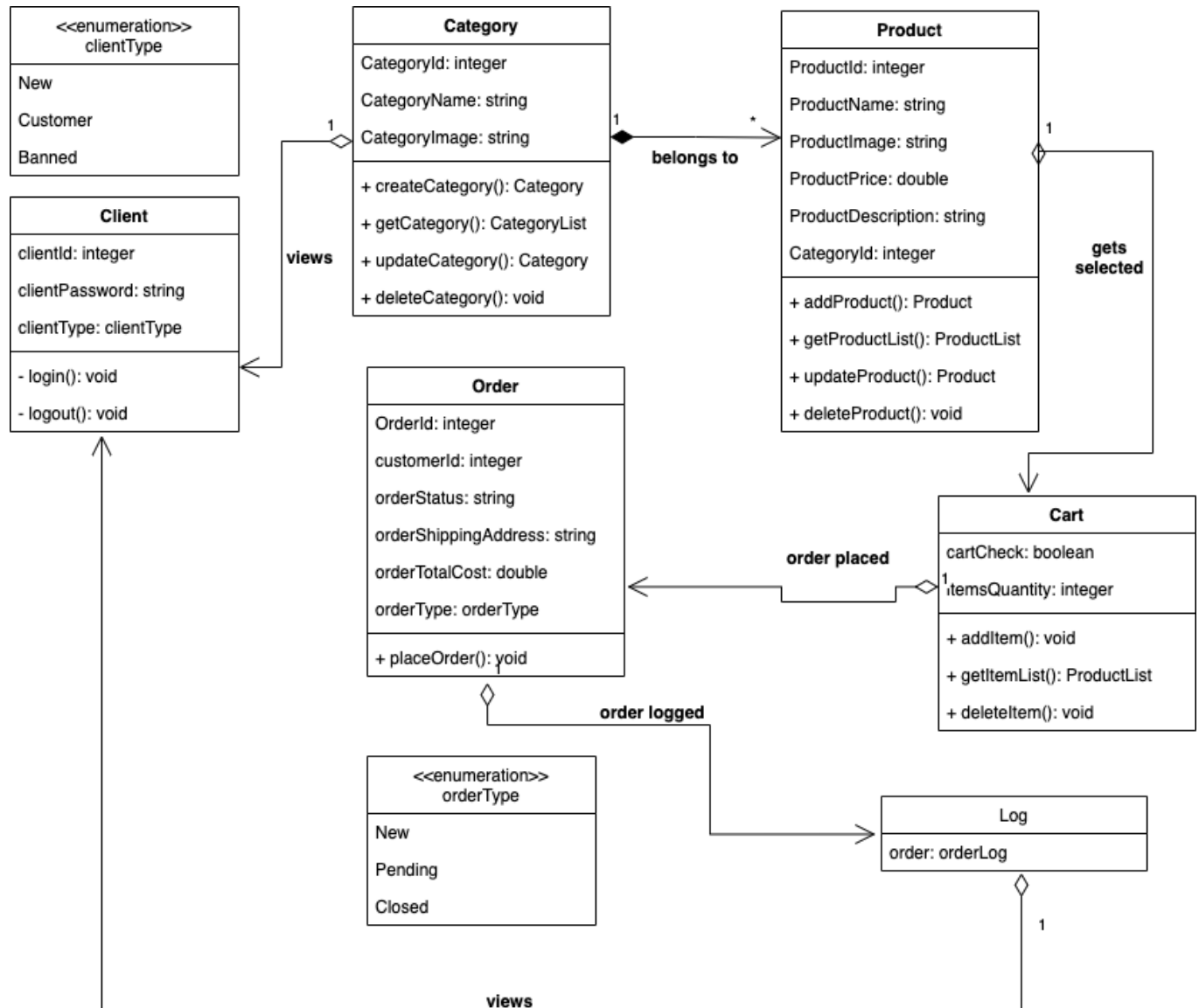


GRASP Patterns

Pattern	Description
1. Creator	Category class will be the creator of category object and similarly a product class will be the creator of product object.
2. Controller	Category controller and Product controller will be assigning the responsibilities as per the user request.
3. Pure Fabrication	Category Service and Product Service will be using pure fabrication design patterns. For example - update category, remove the product, list products etc.
4. Protected Variation	Since all the objects have their independent operations and pathways, updating one object will not affect the operations of other objects. That's how we are implementing a protected variation pattern here.
5. Information Expert	Product, Category, Order



Class Diagram



Thank You!