Industry Exposure - Phase Two

1st Industrial Project

E-Commerce Web Application - V 2.0

Project Submission Deadline: Thursday, June 16th, 2022

Table of Contents

Introduction

Purpose

The E-shop Store web application is intended to provide complete solutions for the seller as well as customers through a single gateway using the internet.

It will enable the seller to set up an online shop, customers to browse through the shop and purchase them online without having to visit the shop physically.

Product scope

- Secure registration and profile management facilities for Customers
- Adequate searching mechanisms for easy and quick access to products and services.
- Creating a Shopping cart so that customers can shop 'n' no. of items and checkout finally with the entire shopping cart. Customers can add or delete items in the cart.
- Regular updates to registered customers of the offer for sale about new arrivals.
- Strategic data and graphs for Administrators and Shop owners about the items that are popular in each category and age group.
- Feedback mechanism, so that customers can give feedback for the product or service which they have purchased. Also, facility rating of individual products by relevant customers.
- Adequate payment mechanisms and gateway for all popular credit cards, cheques, and other relevant payment options, are available from time to time.

Overall Description

Product Perspective

E-shop is aimed towards the seller to reach out to the maximum cross-section of customers and common people who can be potential customers. This project envisages bridging the gap between the seller, the retailer, and the customer should be user-friendly, 'quick to learn', and reliable software for the above purpose. E-shop is intended to be a stand-alone product and should not depend on the availability of other software. It should run on both UNIX and Windows-based platforms.

Product Functions

A Customer can browse through the shops and choose products to place in a virtual shopping cart. The shopping cart details can be viewed, and items can be removed from the cart. To proceed with the purchase, the customer is prompted to log in. Also, the customer can modify personal profile information (such as phone number and shipping address) stored by the application. The customer can also view the status of any previous orders and cancel any order that has not been shipped yet.

Design and Implementation Constraints

An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented in order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and

payment information such as a credit card number. An e-mail notification is sent to the customer as soon as the order is placed.

Requirements Specification

Functional Requirements

- **Login:** The system should have the login functionality so the user can give their email and password in specified fields if the user wants to buy the product.
- **Search:** The system should have a search bar in which users can search for any product type.
- **Product Description:** The system should have the description of the product, when the user clicks on the product image the product's page will open where the product's description is available.
- **Add to Cart:** The system has a cart, the add to cart will allow the user to add the desired products into the cart, when the wish list completes the user will go to the cart and buy products.
- **Sign up:** This feature will create a user account with a unique email (each email will specify only one user), which allows the user to buy the desired products.
- **Payment Method:** The system should have a payment method, this allows the user to choose between a different number of payment options. Any payment potion has required data, there must be fields to take these data from the user. When purchasing products according to the selected payment option, a generated receipt will appear on the screen, this receipt will be sent via email and SMS to the user's phone number.
- **Supported Payment Methods:** There are two payment options/methods (Credit card – cash on delivery).
- **Feedback:** Further features include a feedback option and a complain box. In case of any mishap, the user can submit a complaint that will be sent to the seller's email.
- **CRUD Operations:** The System should have a feature on the admin site to create/add new products or update the existing product. Also if the product is out of stock or old the admin can delete the product.
- **The image uploading feature:** The system should have an image upload feature in the admin site in which the admin can upload up to 5 images for a new product or add up to 5 images of an existing product.
- **Product Categorization:** The system should provide an additional and immensely useful feature that helps the sellers to categorize their products into subcategories by selecting an existing category option or by creating a new category option in product options.
- **Coupons:** The system should have a coupon feature on the admin site which allows the admin to offer coupons to users for marketing.
- **Order:** The system should have the order page, the page shows all delivered and in-progress orders (with the duration of delivery).
- **Compute Shipping time:** The system should show the user how much time it will take to deliver the product to the user.
- **Contact/Help/Customer Care:** The system should have a contact us page that allows the user to ask queries if he/she faces any problems related to the product or in purchasing.

Non-Functional Requirement:

- **Access-Security:** The system should be capable to safeguard against deliberate and intrusive faults from internal and external sources, and secure with authentication of admin username and password.
- **Efficiency:** The response time of the system shall be fast as it does not exceed 8 seconds, and the system will give access even if connected with a low-speed network.
- **Reliability:** The system will not crash/fail, if the system fails, under any circumstances, to respond then it will recover in a maximum of 15 minutes and have the capability to support up to 20,000 clients per second.
- **Availability:** The system should be capable to give availability 24/7, and if the system does not respond or network down the system will show the last page as stored in the cache.

- **Recoverability:** When the system fails under any circumstances (system crash or network down) and when the system is recovered, the system should have the capability to recover with entered data, so there is no need to renter these data again.
- **Usability:** The system should be user-friendly and very simple to understand the operation/function which should be deployed to make it easier for users to understand.
- **Portability:** The system should be compatible with all browsers in the user system.
- **Maintainability:** The system should be capable of finding and fixing bugs with minimum resources and time.

Requirements' Analysis

UML use case
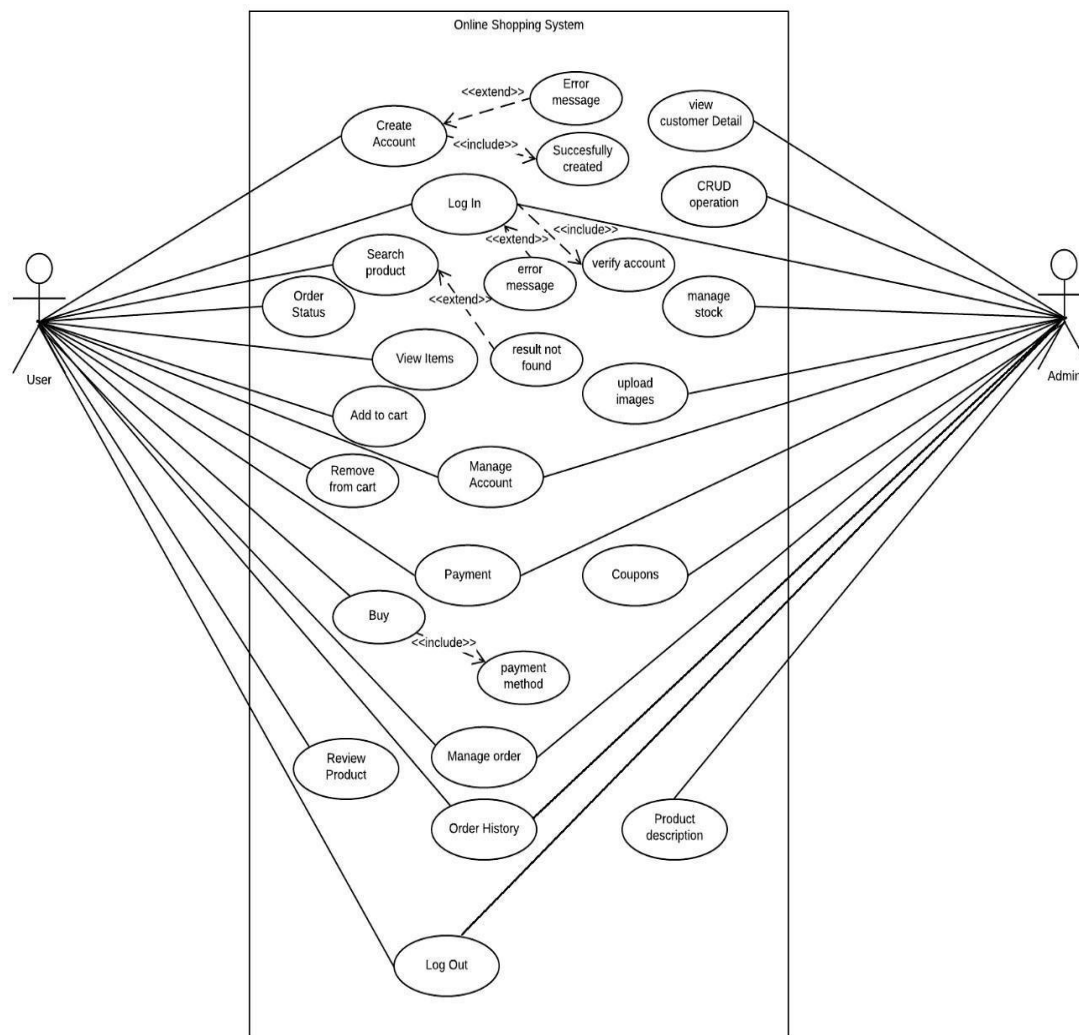
Use Cases Description

The list of possible interactions between a user and the system is mentioned below.
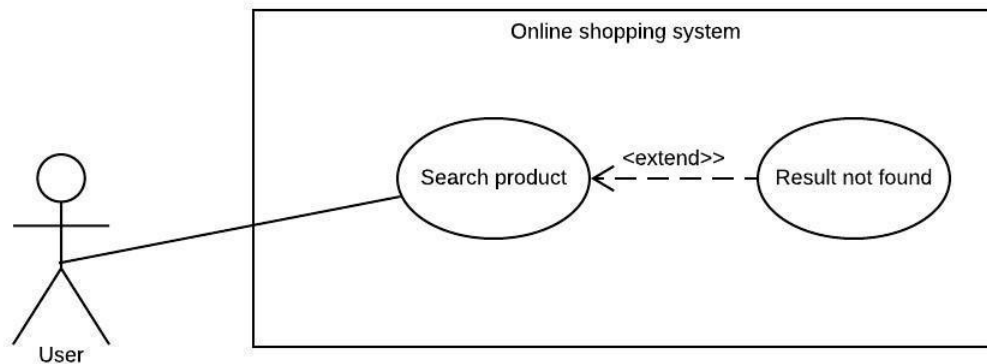
Login
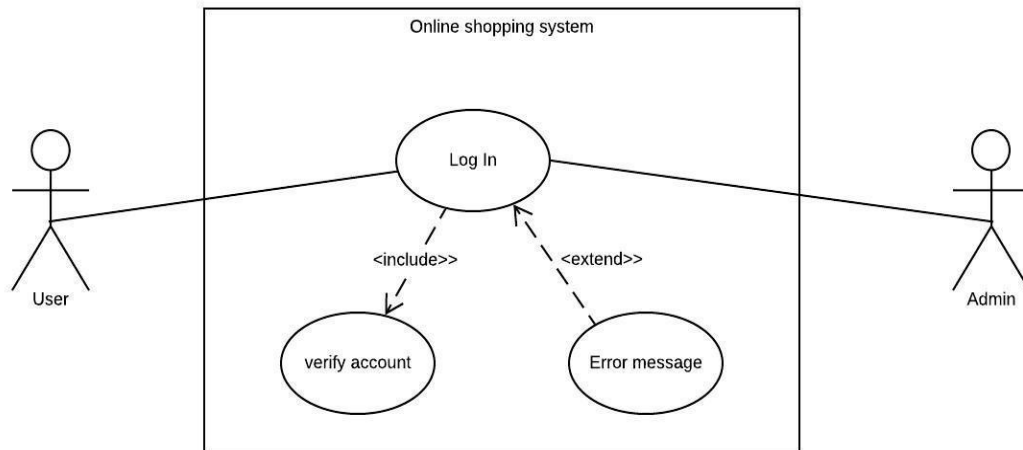
UC-01 Log In	
Requirement	To be able to Log In.
Initiating Actors	User does the initiative step.
The actor's goal	is To access the system for purchasing the items.
Participating Actors	User
Pre-conditions	Clicking on the Log-In button.
Post-conditions	Log-In into the system to see the products and purchase the desired item/s.
The flow of executing the test scenario	➢ Visit the website ➢ Click on the Log-In button ➢ Enter a valid Name and password ➢ Click the login button.

Sign up/Create Account
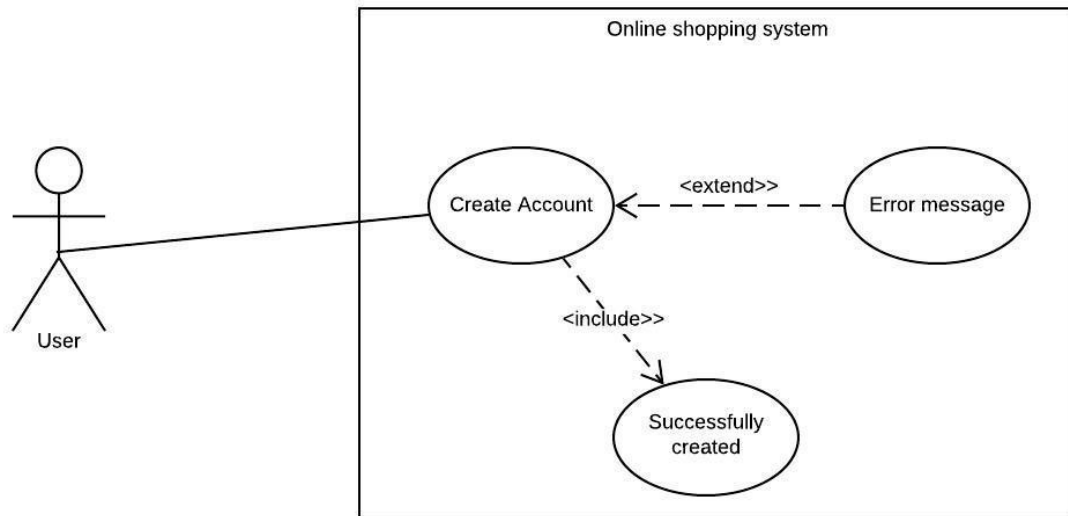
UC-02 Sign up/Create Account	
Requirement	To be able to sign up.
Initiating Actors	User does the initiative step.
The actor's goal	is To be registered into the system for purchasing the items.
Participating Actors	User
Pre-conditions	Clicking on the sign-up button.
Post-conditions	Log-In into the system to see the products and purchase the desired item/s.
The flow of executing the test scenario	➢ Visit the website ➢ Click on the sign-up button ➢ Enter a valid user name and password ➢ Be signed in after completion of the signup procedure.

Search Item

UC-03 Search Item	
Requirement	To be able to search the items.
Initiating Actors	User does the initiative step.
The actor's goal	is To search for the desired product by product name in the search bar.
Participating Actors	User
Pre-conditions	Clicking in the search bar.
Post-conditions	View the desired product which the user searches by its name.
The flow of executing the test scenario	➢ Visit the website ➢ Click in the search bar ➢ Enter the name of the desired item. ➢ A list of items found is displayed.

View Item
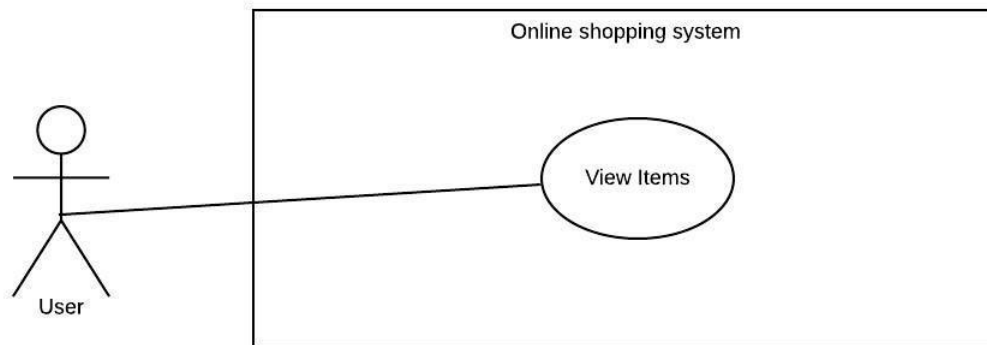
UC-04 View Item	
Requirement	To be able to view items by their category.
Initiating Actors	User does the initiative step.
The actor's goal	is To view items that are displayed on the front page of the system by their category.
Participating Actors	User
Pre-conditions	Visit the website.
Post-conditions	Displayed the items by their category.
The flow of executing test scenario	➢ Visit the website ➢ Displayed the items.

Add-to-cart
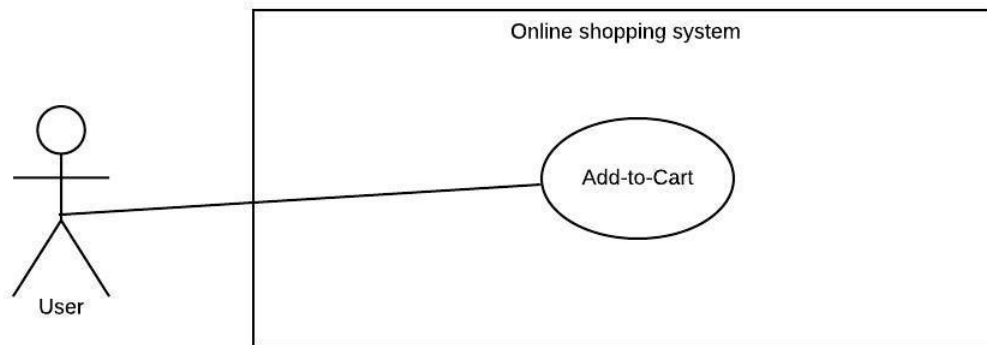
UC-05 Add-to-cart	
Requirement	To be able to add and view the selected item/s for purchase.
Initiating Actors	User does the initiative step.
The actor's goal	is To store the desired item in a bucket and purchase all items at Once.
Participating Actors	User
Pre-conditions	Clicking on the Add To Cart button.
Post-conditions	The system will store the item in the cart.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the product. ➢ Click the Add to cart below the product.

![Sprints logo]
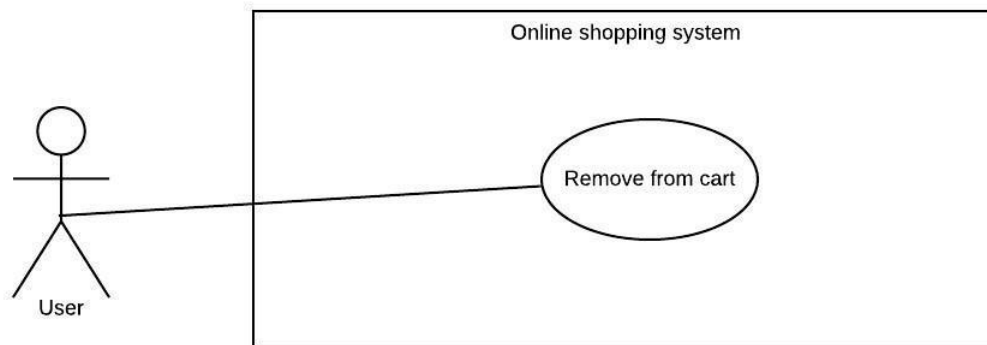
Remove-from-cart

UC-06 Remove-From-cart	
Requirement	To be able to remove the item/s from the list of the selected item/s for purchase.
Initiating Actors	User does the initiative step.
The actor's goal	is To remove the item from the cart list if does not want to purchase it.
Participating Actors	User
Pre-conditions	Clicking on the Cart Option and click on the remove option beside the product.
Post-conditions	The item is removed from the cart list.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the cart option. ➢ Click the remove option beside the product.

Buy
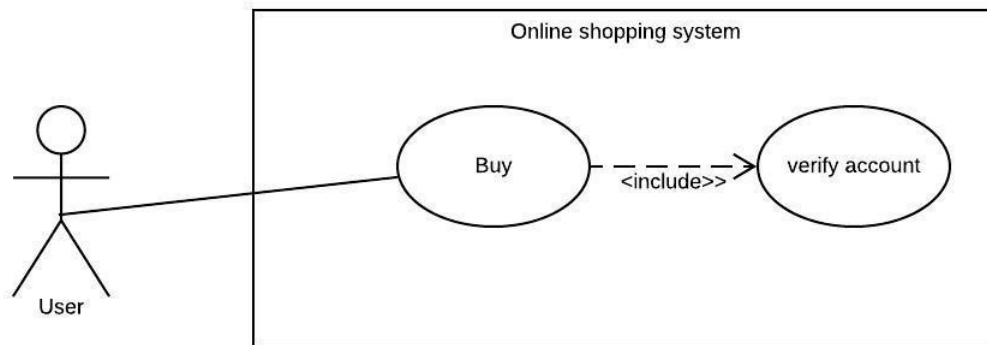
UC-07 Buy	
Requirement	To be able to purchase the product direct or purchase from the cart list.
Initiating Actors	User does the initiative step.
The actor's goal	is To purchase the desired product from the website.
Participating Actors	User
Pre-conditions	Clicking the buy option below the product description.
Post-conditions	The system displayed the payment method page.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the product. ➢ Click the buy option below the product description.

![Sprints logo]

Payment

UC-08 Payment	
Requirement	To be able to do payment from the selected method.
Initiating Actors	User does the initiative step.
The actor's goal	is To make payment using the selected method.
Participating Actors	User
Pre-conditions	Click on the pay button below in the cart and provide the necessary information.
Post-conditions	The system will show the receipt and display the date of delivery of item/s, sen.
The flow of executing test scenario	➢ Visit the website. ➢ Click on any product. ➢ Click on the buy option. ➢ Click on pay. ➢ Displayed dialog box. ➢ Provide necessary information. ➢ The receipt is displayed and sent via email and SMS.

Review Product
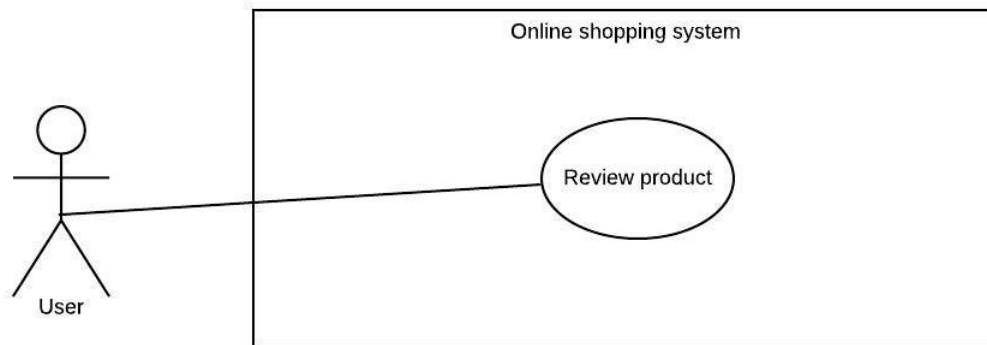
UC-09 Review Product	
Requirement	To be able to write a review about the product.
Initiating Actors	User does the initiative step.
The actor's goal	is To give feedback on product quality.
Participating Actors	User
Pre-conditions	Clicking on the rate/review option.
Post-conditions	The system will display a field for review and shows the stars for rating.
The flow of executing test scenario	➢ Visit the website. ➢ Click on any product. ➢ Click on the rate/review option. ➢ Click on the text field. ➢ Write review. ➢ Click the stars. ➢ Submit review.

Manage Order
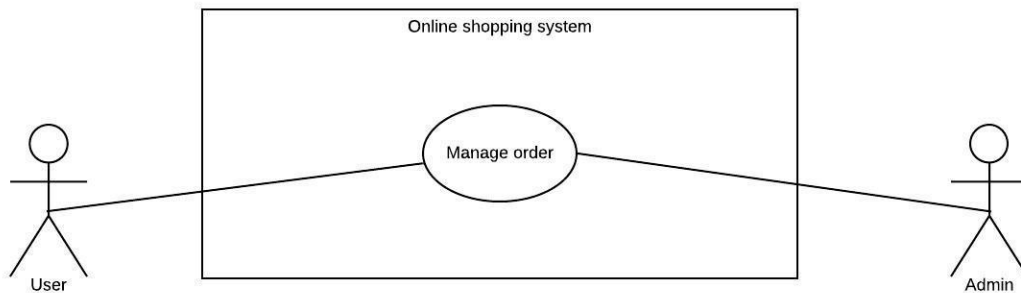
UC-10 Manage Order	
Requirement	To be able to cancel or update the order.
Initiating Actors	User does the initiative step.
The actor's goal	Is to cancel the order or add another purchase item in the same order.
Participating Actors	User
Pre-conditions	Clicking on the manage order option.
Post-conditions	The system will open the page of the current order with the cancel and update buttons.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the manage order option. ➢ Click on the cancel button to cancel. ➢ Click on the update button to add more items for purchase. ➢ Write review.

Log-Out
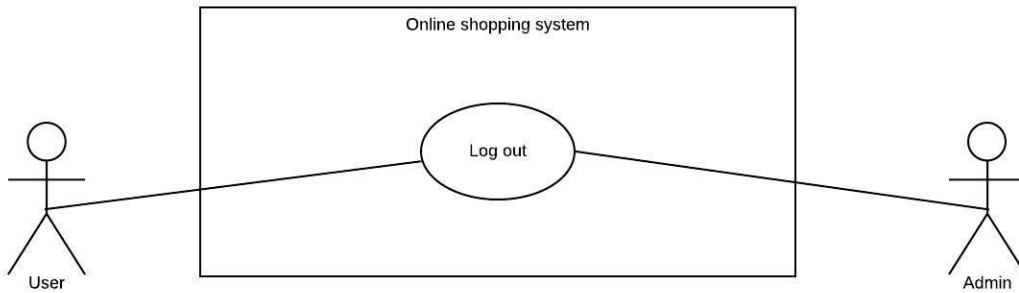
UC-11 Log-Out	
Requirement	To be able to Log-out from the system.
Initiating Actors	User does the initiative step.
Actor's goal	Provide authentication, the user can log out from the system.
Participating Actors	User
Pre-conditions	Clicking on the Log-out option.
Post-conditions	The system will come and show the home/front page.
The flow of executing test scenario	➢ Visits the website. ➢ Click on Log-out.

![Sprints logo]
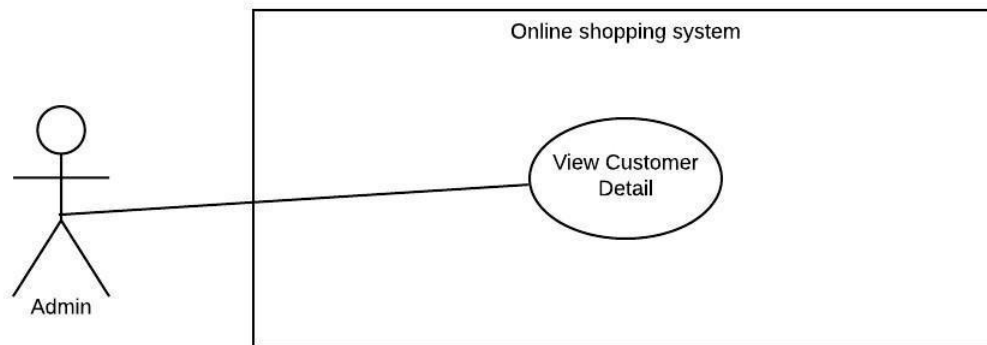
Customer Details

UC-12 Customer Detail	
Requirement	To be able to see the profiles of different users.
Initiating Actors	Admin does the initiative step.
Actor's goal	is To view the customer details/information except for account info.
Participating Actors	Admin
Pre-conditions	Clicking on User Details option.
Post-conditions	The system will display all users that are registered in the system with details in different fields.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on user detail.

Product Description
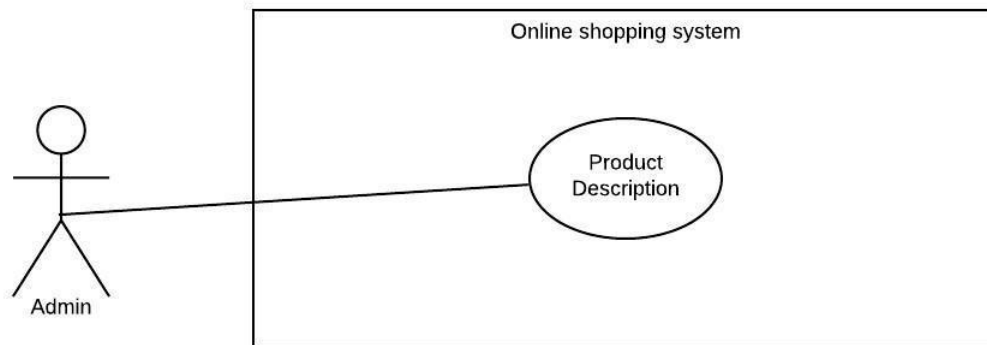
UC-13 Product Description	
Requirement	To be able to add a product description.
Initiating Actors	Admin does the initiative step.
Actor's goal	Add the description of the product, for more details about item/s.
Participating Actors	Admin
Pre-conditions	Clicking on Add description.
Post-conditions	The system will display the text written in the description.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on products. ➢ Click on Add description.

CRUD Operation

Online shopping system

CRUD Operation

Admin
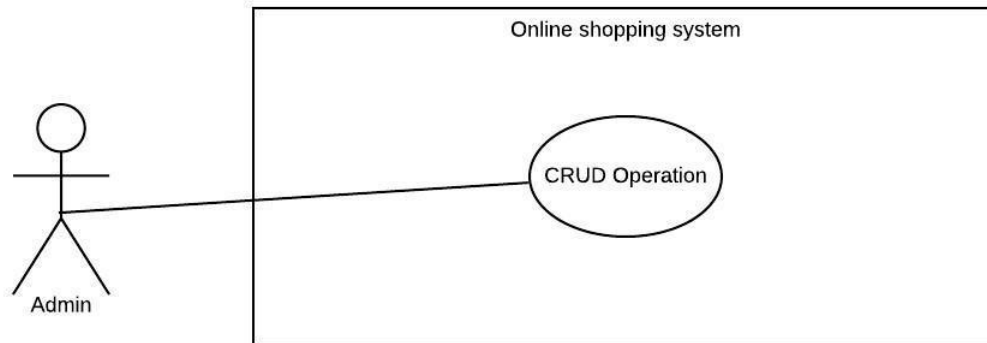
UC-14 CRUD Operation	
Requirement	To be able to add, update and remove the product from the system.
Initiating Actors	Admin does the initiative step.
Actor's goal	Delete/remove the old product/s which are out of stock, update the product/s with a different image, color and add new product/s.
Participating Actors	Admin
Pre-conditions	Clicking on orders option
Post-conditions	The system will display a dialog box with required fields.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on a product. ➢ Click on edit, remove or add.

Listing Orders

Online shoping system

Listing Orders

Admin
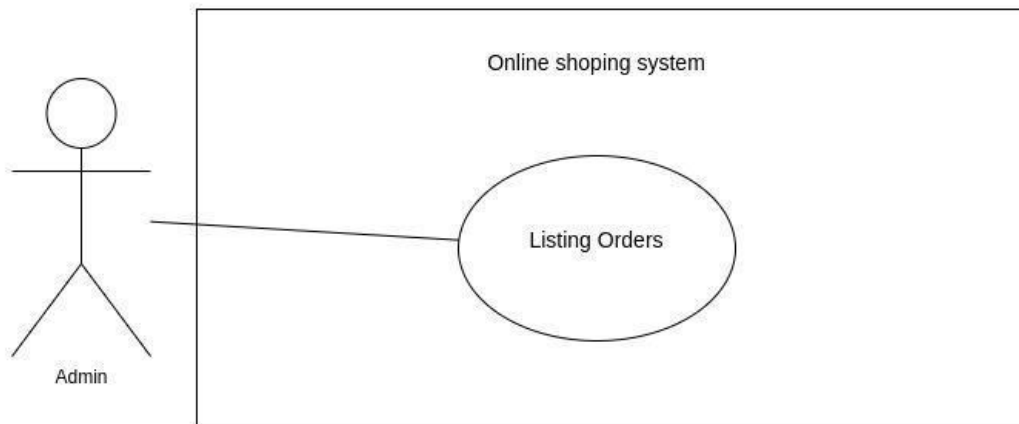
UC-15 Listing Orders	
Requirement	To be able to view and list all orders in the system.
Initiating Actors	User does the initiative step.
Actor's goal	listing and view all orders that are made by the customers and be able to filter them based on (order status - creation date - username).
Participating Actors	Admin
Pre-conditions	Clicking on Add, remove, or edit on the product page.
Post-conditions	The system will list all orders based on the applied filter
The flow of executing the test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on the orders.

Change order status

Online shoping system

UC-16 Change order status	
Requirement	To be able to change order status
Initiating Actors	User does the initiative step.
Actor's goal	Admin can change order status based on the following criteria - **pending** can change to **in review** - **in review** can change to **in progress** - **in review** can change to **canceled** - **in progress** can change to **on the way** - **on the way** can change to **delivered**
Participating Actors	Admin
Pre-conditions	Clicking on the specific order.
Post-conditions	Status should be changed and a notification email sound is sent to the user
The flow of executing the test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on the specific order. ➢ change status

Listing Customers
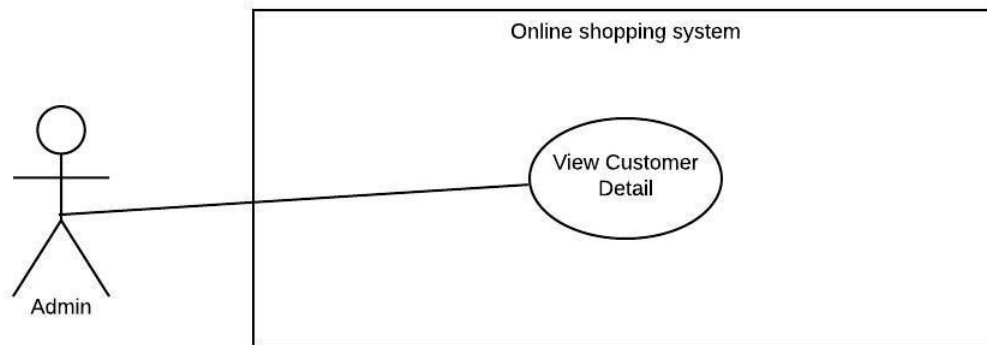
UC-17 Listing Customers	
Requirement	To be able to see the list of the customers
Initiating Actors	User does the initiative step.
The actor's goal	is to view and list all users in the system and filter them based on (username - status - creation date)
Participating Actors	Admin
Pre-conditions	by Clicking on the listing users option.
Post-conditions	the list of the users will appear
The flow of executing test scenarios	➢ Visit the website. ➢ Click on the menu. ➢ Click on the user list.

Manage Customers
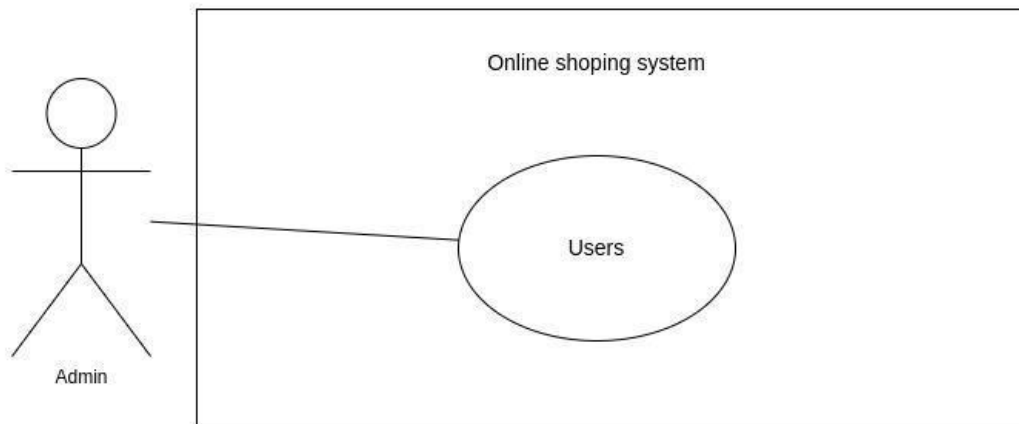
UC-18 Manage Customers.	
Requirement	To be able to change customer status
Initiating Actors	User does the initiative step.
Actor's goal	Admin can change customer status based on the following criteria - **active** can change to **deactivated** - **deactivated** can change to **active** - **deactivated** can change to **suspended**
Participating Actors	Admin
Pre-conditions	Clicking on a specific user.
Post-conditions	Status should be changed and a notification email sound is sent to the user
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on a specific user. ➢ change status

![Sprints]

Change users password

Online shoping system

Users

Admin
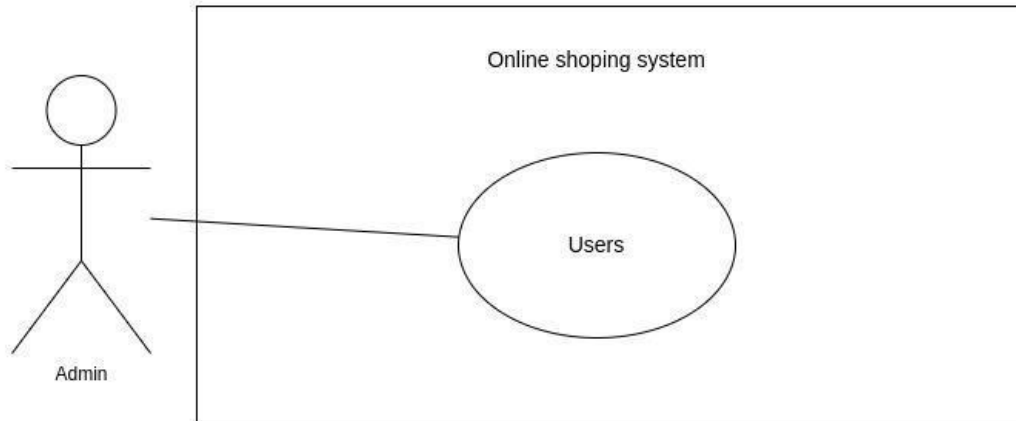
UC-19 Change users password	
Requirement	To be able to change customer password
Initiating Actors	User does the initiative step.
Actor's goal	Admin can change customer password with new one
Participating Actors	Admin
Pre-conditions	Clicking on a specific user.
Post-conditions	password should be changed and a notification email sound is sent to the user
The flow of executing the test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on a specific user. ➢ insert new password

![Sprints logo]

Statistics

UC-20 Statistics	
Requirement	To be able to see all system statistics
Initiating Actors	none
Actor's goal	Admin can see the system statistics like the following - no of users(active/deactivated) - no of orders(pending - in review - in progress- on the way - delivered) - total income last 7 days - no of new customers last 7 days - no of today orders
Participating Actors	Admin
Pre-conditions	none
Post-conditions	statistics should appear in the proper way
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on statistics

Brand CRUD Operation
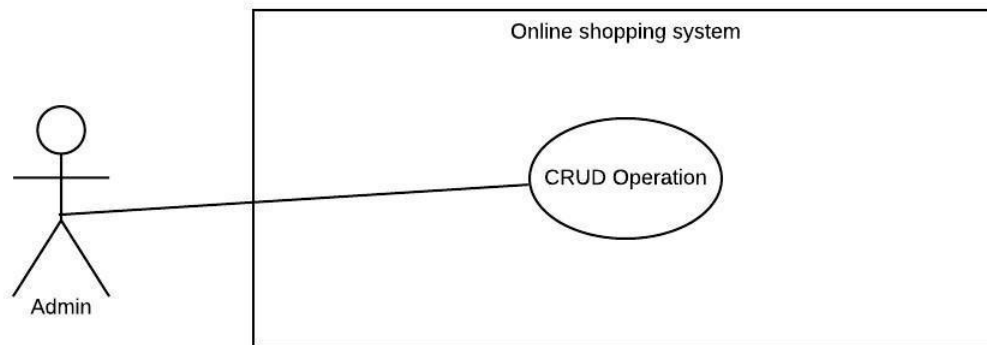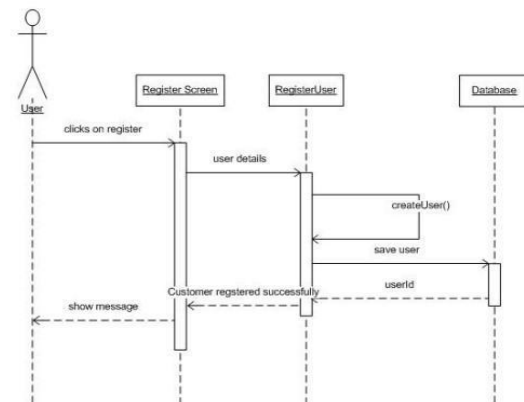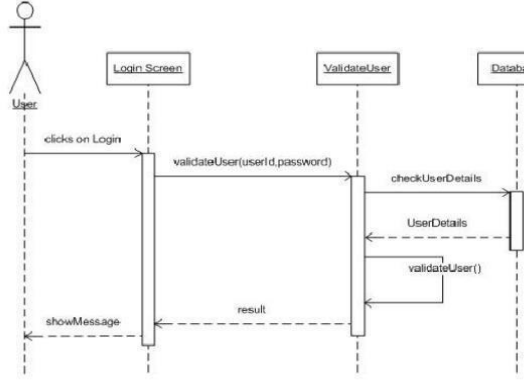
UC-21 Brand CRUD Operation	
Requirement	To be able to add, update and remove the brand from the system.
Initiating Actors	Admin does the initiative step.
Actor's goal	Delete/remove the old brand/s which are not used, update the brand/s with a different image, color, and add new brand/s.
Participating Actors	Admin
Pre-conditions	Clicking on brands option
Post-conditions	The system will display a dialog box with required fields.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on a brand. ➢ Click on edit, remove or add.

Category CRUD Operation
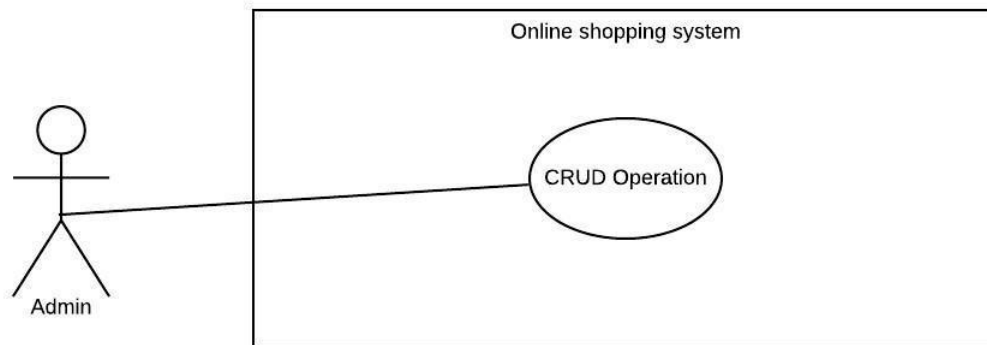
UC-22 Category CRUD Operation	
Requirement	To be able to add, update and remove the category from the system.
Initiating Actors	Admin does the initiative step.
Actor's goal	Delete/remove the old category/s which are not used, update the brand/s with a different image, color, and add new category/s.
Participating Actors	Admin
Pre-conditions	Clicking on categories option
Post-conditions	The system will display a dialog box with required fields.
The flow of executing test scenario	➢ Visit the website. ➢ Click on the menu. ➢ Click on a category. ➢ Click on edit, remove or add.

Sequence Diagram

● Register	
For purchasing items from the system, the user must log into the system, for logging into the system the user should have an account in the system. The user must register in the system by clicking create an account, in the registration page screen there will be multiple fields that are necessary to fill with a unique username, the user will be registered in the system's database then he/she can purchase and add-to-cart items.	

- In case the user name exists before, the system should reject the request, and a message should appear to the user telling him to change the username.
- Password must be greater than **8** characters with a combination of characters and numbers.

● Login	
In the diagram the user will log into the system, the system verifies the username and password from the database and returns the message. If the username and password are correct the user will enter the system. The user needs to log in if he wants to purchase and add item/s to the cart.	

- If the user entered the wrong username/password the system shows an error message.
- If the user is not active or suspended the system shows an error message.
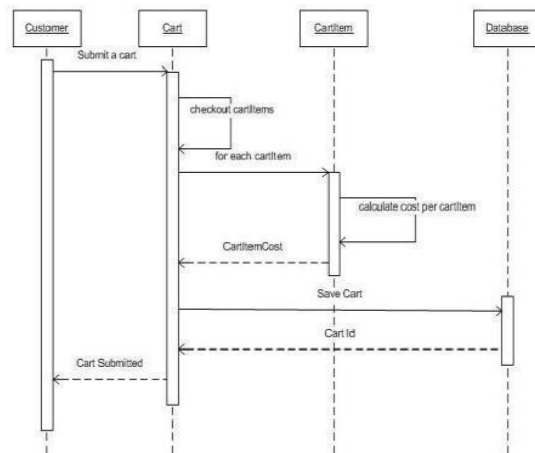
|	
• **Add-To-Cart**	
The diagram shows that the user wants to buy that product, the user can add that product to the cart, the system will add that product to the cart and assign a unique id as order no.	
• In case the user sets the count of any item less than 1 system should not accept it.	
• **Submit/Checkout**	
The diagrams shows that the user add the items to the cart and then he/she check out the cart, the cart will generate a receipt that contains all items in the cart with their quantities and their prices, and the total price appeared at the receipt's end.	
• The system should verify that the items with quantities are still available in the stoke • The system should verify that the user is still active and not suspended	
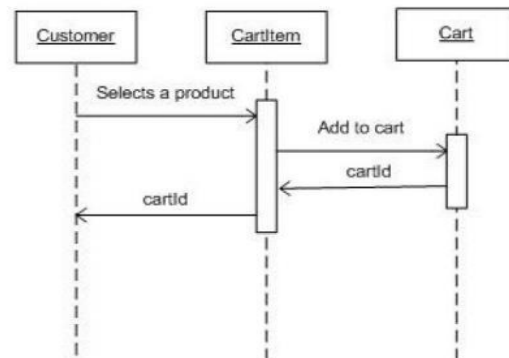
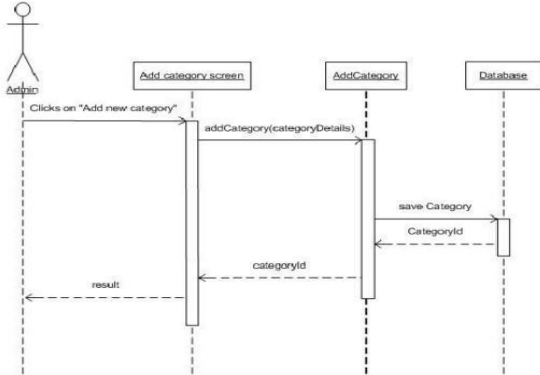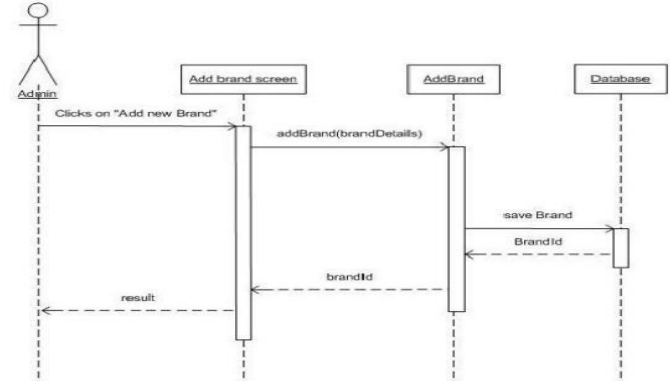|	
● **Purchase**	
The diagram shows that the user wants to purchase directly. The user will browse the item, select the item, click on purchase then the system will show the selected item/s to the user with its price and if he/she wants to purchase, he/she has to select the method and provide necessary information then the system will send the receipt via email.	
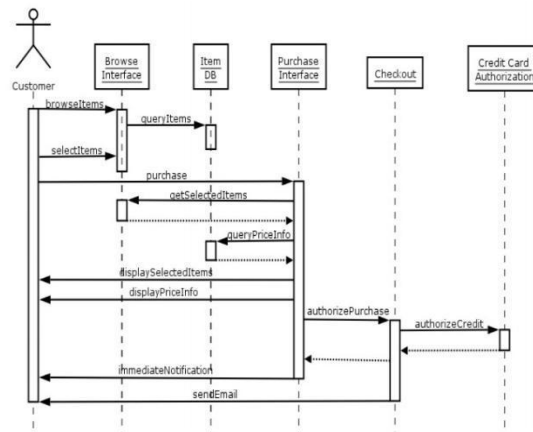
● Users must select one of the provided payment methods.
● The user should insert proper info like phone and address.

● **Add New Product**	
The diagram shows that the admin wants to add a new product to the system then he/she clicks the add product button then upload images of the product with product details and then save the product in the database, and then the system displays that item in the products list.	
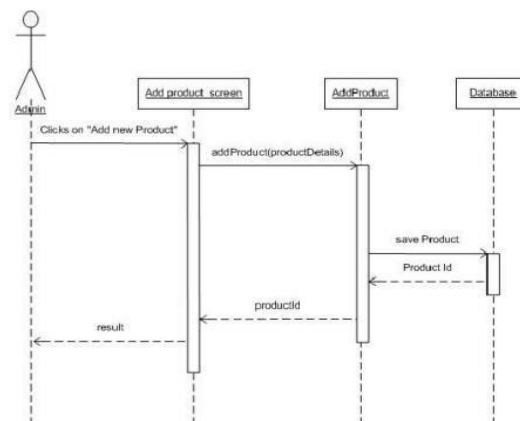
● The system sound verifies all mandatory files are entered.
● The price must be greater than 0.
● In case the name is inserted before the system shows the error message.

<table>
<tr><td colspan="2"></td></tr>
<tr><td>● Add New Category</td><td></td></tr>
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