



Software Requirements Specification

Online Shopping Site

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Revision History

Name	Date	Reason For Changes	Version
Zeynep Ayca Tanışlı,Zülal Karın	01/11/2021	Added new feature to the system.(Comments and diagrams)	1.0
Müge Nur Özcan,Ayfer Feyza Şahin	11/12/2021	Only the registered customer will be able to make purchase. The scope of purchasing system has changed.	2.0

1. Introduction

1.1 Purpose

The main goal of this SRS document is to provide solutions to the various skin concerns, to encourage consumers to be receptive to new goods, and to collect user feedback and ideas. This will aid in a better understanding of the project, the development of thoughts that can be later developed, and the consideration of what is being considered but not the product. We will keep track of how to utilize this website and goods to keep track of any ideas that come up. In fact, the aim of this SRS document is to give a comprehensive description of our software product, including its specifications and goals. The project's intended audience, user interface, hardware, and software requirements are all described in this document. It specifies how our customers, team, and target audience perceive the product and its capabilities. It does, however, aid any designer or developer with software development lifecycle (SDLC) methods. Box of Beauty is a closed source software. The main purpose of the project is to test the skin of the users and as a result, to determine their skin type and recommend products that they will use regularly. If a certain number of purchases has been made, we will give you free trial products as a result. Various things can be done, such as new products or popular products of the month. All of these will be determined by skin type. We aim to be an attractive website with our interesting and patterned boxes on special occasions. In addition, we will develop an open system for all our products with customer comments and experiences made on the site. Our products will be fully usable and objective. As a result of the changing life conditions, the online shopping process has improved a lot and the products can no longer be tried in the store. For this reason, conducting such a test on the internet and determining the skin impulse and suggesting products suitable for demand will start a new era in cosmetics.

1.2 Document Conventions

This document has been written using the Calibri font, 12 font size. This font is suitable for official documents and was chosen because it has a neat appearance. Calibri Light was used for the titles. For the main section titles, 16 font size and for the sub-titles, 13 font size were used. Important and crucial words for project were written in italics.

1.3 Intended Audience and Reading Suggestions

All stakeholders can access this SRS document. These stakeholders are users, providers, influencers, governance, employees, community groups, testers, project managers, documentation writers. They need to read this document in detail and understand how to use it. This SRS document includes the explanation of how to use the application, what kind of precautions should be taken, its purpose, connection with the environment, how users will use it,

hardware and software requirements, security requirements and abbreviations for clarity. An SRS serves as a point of reference for testing the final product and software. A high-quality SRS is necessary for a high-quality product or program. The production expense is reduced by using a high-quality SRS. The usage of a text partitioning technique to obtain the overview of use case degrees and characteristics from required text is described in this SRS.

1.4 Product Scope

It is very difficult for customers to find suitable products in cosmetic products. Our customized online shopping site makes this possible and enables the customer to test the product, purchase the product, add the product to the cart, product review, box trial, skin type analysis and personalized product list viewing. Thus, with less product purchase, it delivers the appropriate product to the user at less cost. It has adopted a more sustainable and effective shopping approach.

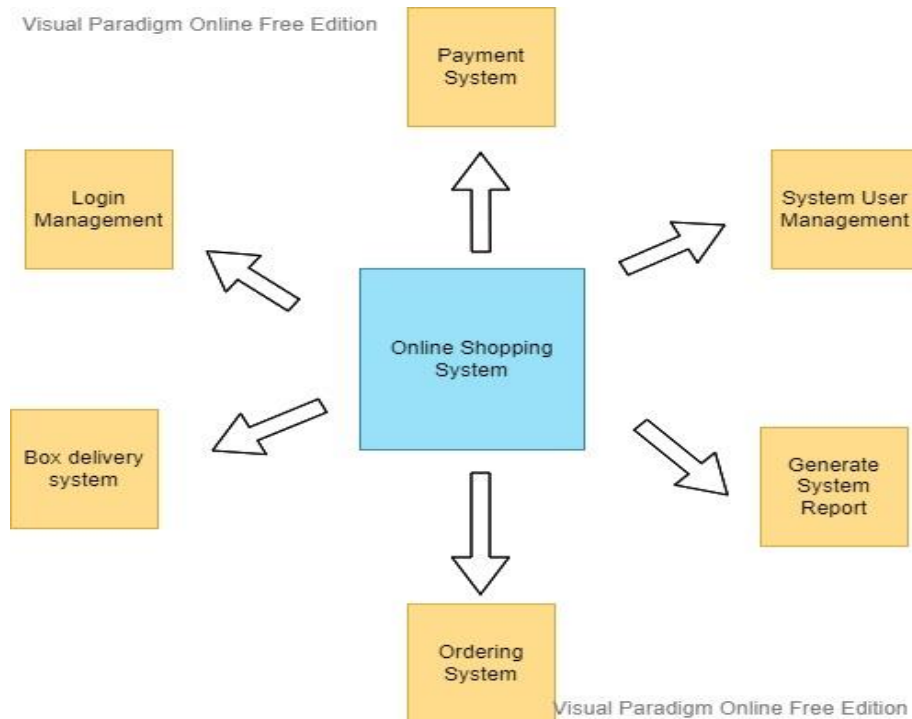
1.5 References

<https://docs.microsoft.com/en-us/typography/font-list/symbol>
<https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document>
<https://itrexgroup.com/blog/guide-to-software-requirements-specification-document-benefits-expert-tips/#>
<https://searchsoftwarequality.techtarget.com/definition/software-requirements-specification>
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2. Overall Description

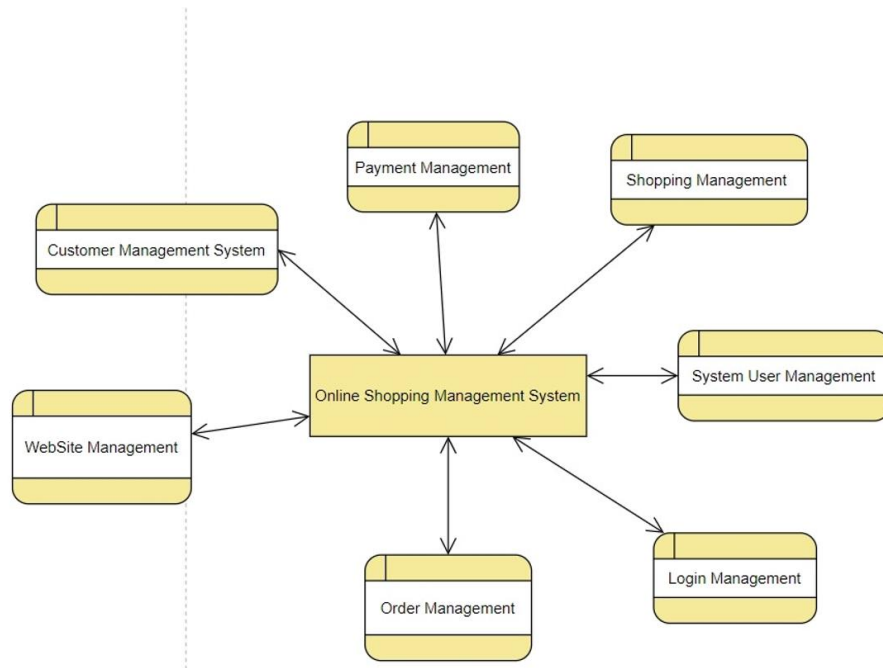
2.1 Product Perspective

Our Online Shopping Site (OSS) is a customer-oriented platform that performs a number of functions for both users and site administrators, sends test packages to customers in line with customer information, offers special recommendations, allows customers to shop without having to physically visit the cosmetics store, and communicates easily with customers. It is an online cosmetics shopping site. OSS should be accessible from computers and phones of all our customers living in Turkey and abroad. So, Google Chrome, Firefox, Internet Explorer, Microsoft Edge, Apple Safari etc. should work fine in web browsers. It will be prepared in line with the memory to be used specified by the customer. There are no specific software packages specified by the customer in an extra way, or software packages that are not required. For this reason, there is no need for extra hardware and software.

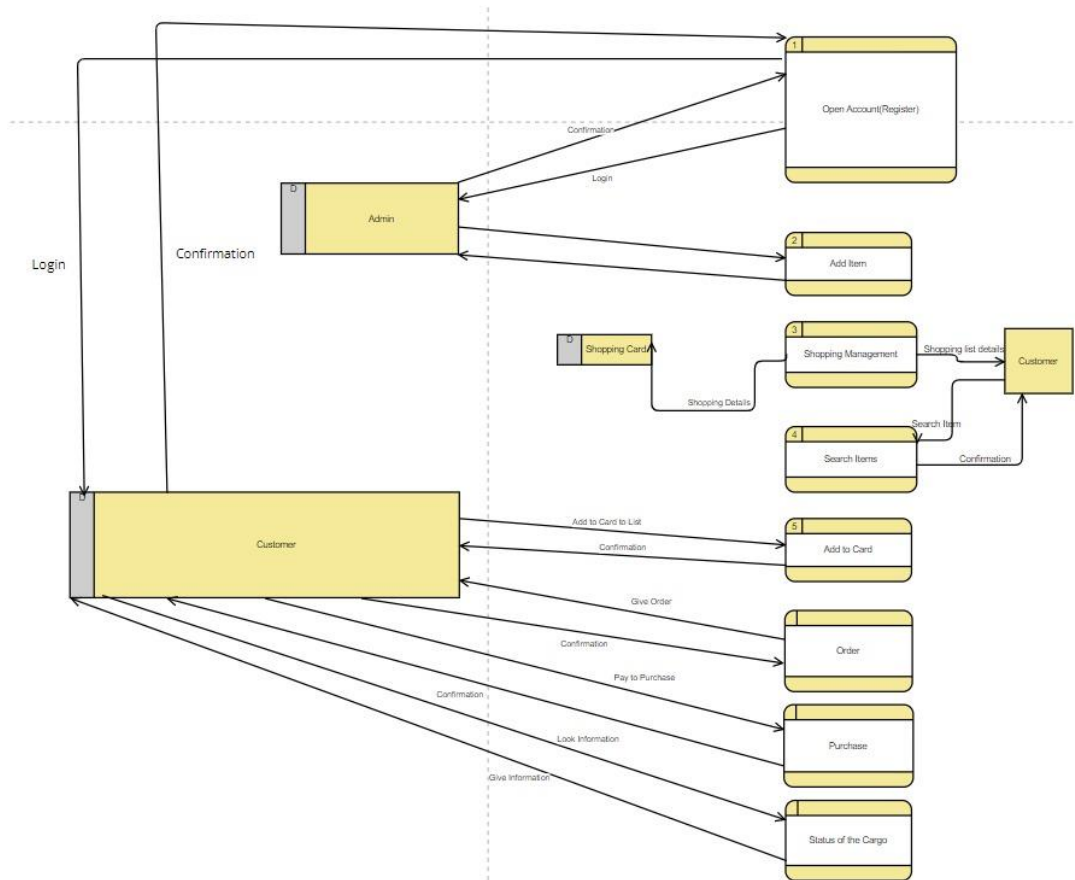


2.2 Product Functions

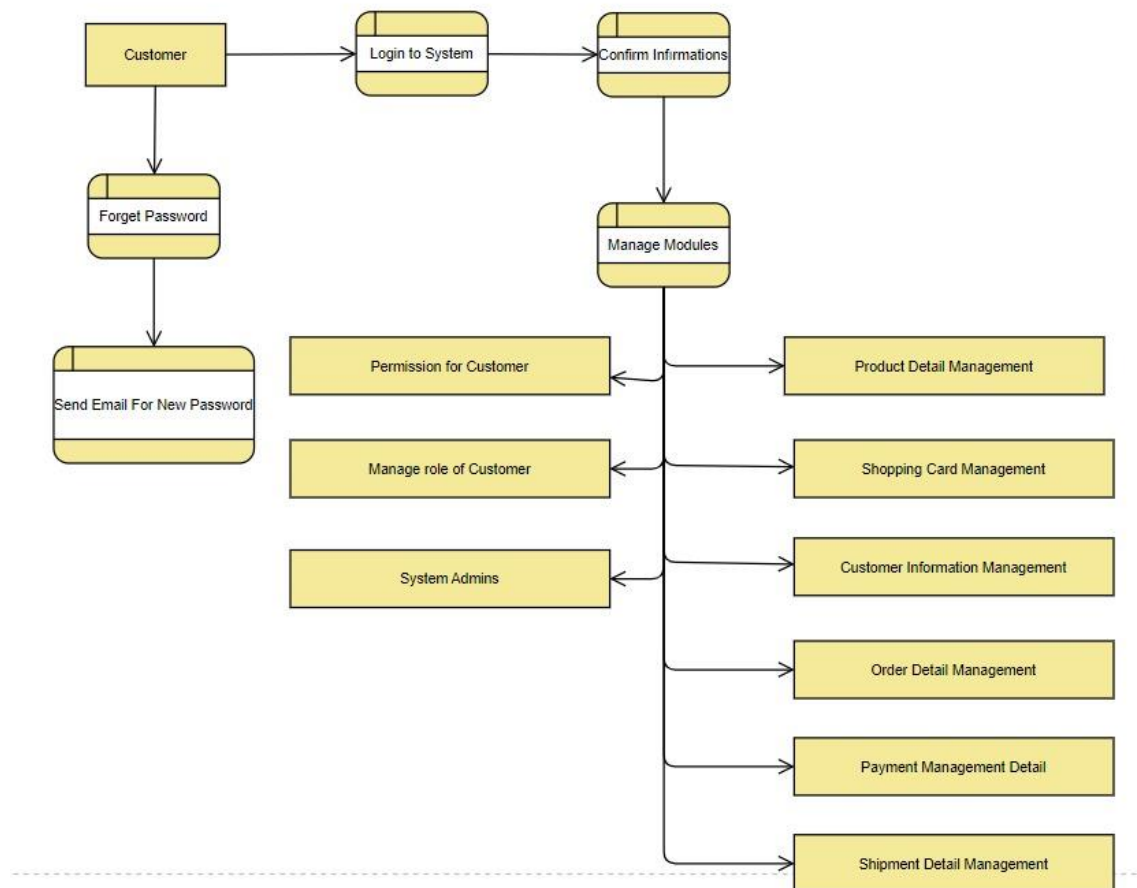
- Customers will be able to create an online account with a username and password. This information is cross-checked against the database, and the user is added.
- With the data given to the customer, the user will be able to add, change, or delete items from their shopping card.
- Customers can participate in the skin test as they wish. For this, they must first register in the system and accept the confirmation document to provide the information required for the skin test.
- If they have any questions in their minds, they can get information about their skin from our dermatologist online. Without exceeding any security limits and without violating rights.
- The most important thing in our system is that user comments will be made without violation of personality rights and it will be a safe shopping for all customers.
- When they complete their shopping, they will be able to shop securely with their registered cards, if any, or with their new card information.
- They can end their membership on our website whenever they want. There is no possibility of coercion or security.
- After shopping, they will be able to see the status of their cargo whenever they want and they will have the right to cancel their orders as they wish.



Zero Layer Data Flow Diagram



First Layer Data Flow Diagram



Second Layer Data Flow Diagram

2.3 User Classes and Characteristics

The main objective is to develop this online shopping system with a recommender system that uses the survey results under preferences and constraints so that the users can register and create an account and then purchase a product based on their preferences. This online recommender system is capable of recommending and providing the users with a list of options and recommendations corresponding to the best solutions based on a set of the user's preferences and interests.

Our intended users, targeted audience are the clients who are going to use and interact with the online shopping system that is mostly young, adult, teen, and senior people. It is an application that does not

impose any age or gender restrictions that's open to using for everyone. Anyone who wants to use online shopping that works with a recommender system falls within our target audience.

The Stakeholders of the online shopping system are: administrators, developers, customers, Technical Support Team and client.

Administrators and Developers must have PhD from Computer Science or smiliar programs.

Developers

- Needs full access to all of the databases and access to the admin menus.
- Needs access to administrator's information

Administrators

- Can add, delete, edit products and provide services to the customers.
- Needs access to all of the customer's information.

Technical Support Team

- Needs to communicate with customers through the online shopping system if needed and transfer the information that needs to be served to the administrators.
- Needs access to some of the client's information.(eg: name)
- Needs to access to customer's order history and order details.

Customer

- Customers are using the online shopping system for viewing and buying the products.
- Customer can also write feedbacks for products and services.

Client

- Product's main holder
- Designing the online shopping website according to the client's wishes & wants.

2.4 Operating Environment

Hardware Requirements:

A computer or phone with internet access, sufficient memory and appropriate speed is sufficient to access the online shopping site.

Operating System Requirements:

Windows 7, 8 and 10 versions that support the network.

Software Requirements:

A web browser is required to access the website. Google Chrome, Mozilla Firefox, Opera, Internet Explorer can be used.

2.5 Design and Implementation Constraints

Security is important to this system because users can save credit card and address information in OSS. It is not desirable to store passwords in a plain text in the database. The password recovery feature is expected to kick in in the event of a large number of invalid login attempts. The account does not need to be locked. In all cases, a strong password should be requested from the user. The user must make a combination of letters, secrets and symbols in her password, and the password must complete at least 8 digits. The system should work properly when used with OSS, Google Chrome, Firefox, Internet Explorer, Microsoft Edge, Apple Safari. The website should also be used on the phone. When logging into the website from the phone, Request Desktop Website and Request Mobile Website options should be available. The Mobile Website page should be visible unless the user changes it. It is expected that the system will be developed over the Microsoft .NET platform. And only administrator can control customer's account and orders in OSS.

2.6 User Documentation

Users can log in and log out. Users can get online help at any time. And they can get help from our dermatologist about the skin test online. They can see each other's comments and experience the product. They can get help against possible usage problems through our frequently asked questions section, or they can talk to customer service or get help by e-mail.

Customers can check the points they have collected from their previous purchases, accumulate them and shop. They can have the possibility of loading money into their accounts and shopping easily without dealing with a card.

Customers can easily add cards to the system or make changes to their cards. They can add their addresses as they wish and change it later as they wish. When they place an order, they can track the status of the cargo and communicate. They can cancel their cargo at any time. Customers can look at their old orders. When they want to buy a new product, they can first press the like button and like it and then display the product list they like. They can add the ones they want to their carts.

The internet browser is required because the application is a web-based tool. It is anticipated that the customers would have reasonable internet access.

2.7 Assumptions and Dependencies

Assumptions and Dependencies

Back-end & Front-end Dependencies

- The product does require a back-end database MySQL for storing the username and password for both the admin and customer while logging in to the system as well as various databases regarding various insurance information. MySQL is preferred because it is very fast and reliable to use.
- The speed o the FAQ's communication with the customer must be at a minimum of 3.5 seconds in order to support message transfer in a reasonable time.
- Admin must be able to get a response between the system and the MySQL database within a reasonable time to work efficiently.
- The online shopping system do not require too much equipment, and can be easily accessed from a laptop, or any device with an internet connection.
- The online shopping system must operate on all of the different kinds of operating systems.
- Backend service only fullfills one frontend application interface which is web. There's no application that's developed over phones for our online shopping system.

Assumptions

- The main language of our application will be Turkish, but an alternative to using English will be given for ease of use.
- The online shopping system uses the email of the user as a communication channel to inform about the promotions and news.
- Users that are working in FAQ system works during normal business hours from 08.00-18.00.
- The details related to the product, customer, payment, and services transaction are provided manually.
- The admin is created in the system already.
- Roles and tasks are predefined.

3. External Interface Requirements

3.1 User Interfaces

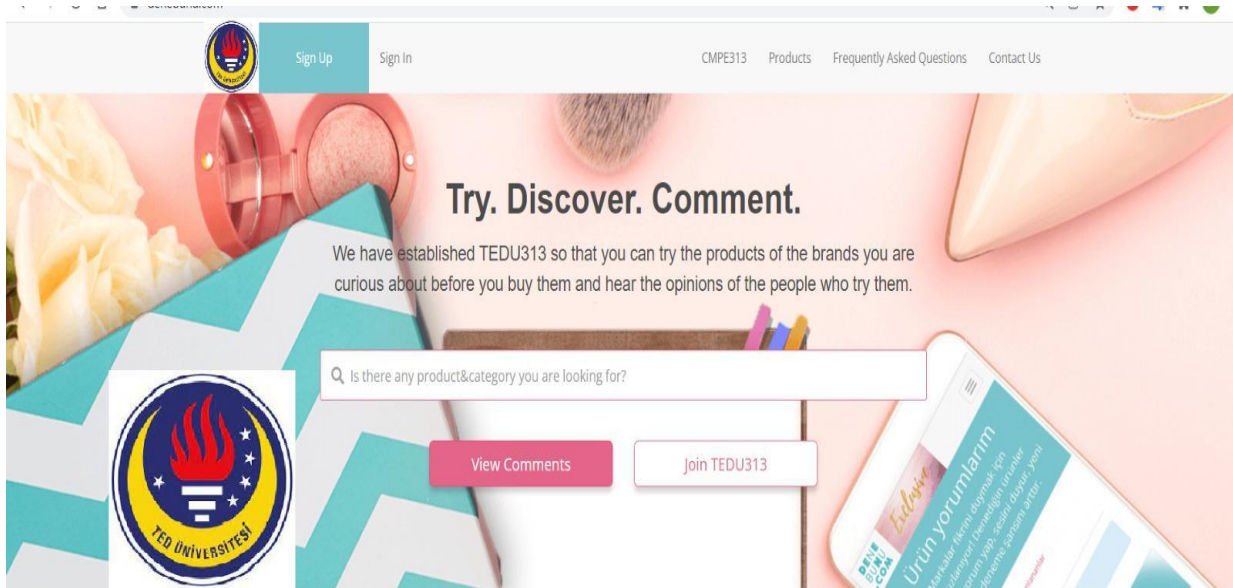


Figure 1

As indicated in Figure 1, the user's login page will look like this. Introducing OSS, registration and login options, as well as product search, contact information, asking questions, etc. will be options.

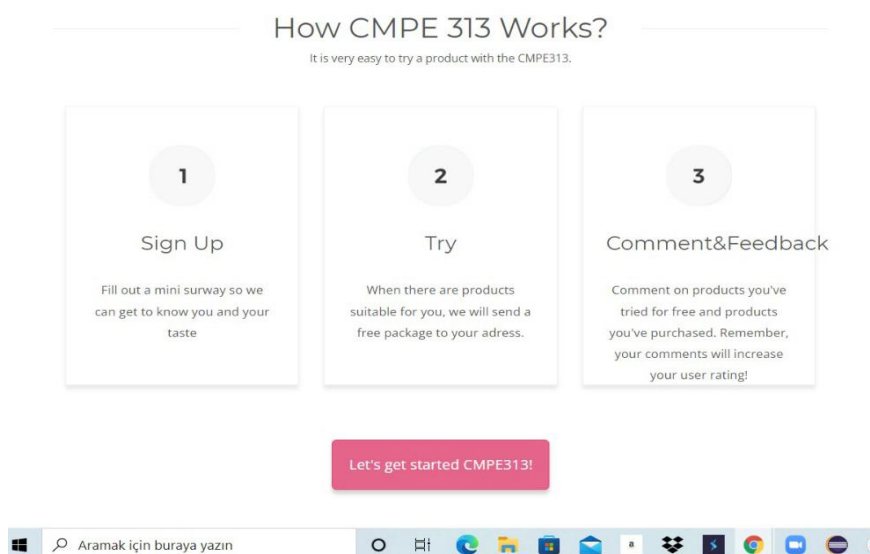


Figure 2

As indicated in Figure 2, we explain to the user the 3 phases of using the OSS. The first thing we want from the customer is to register and fill out the registration form. In the registration form, the content that the customer likes, the content that he does not like, the product category he is interested in and the skin type, etc. questions will be asked. In the second stage, we want to send a trial package to the user based on the information in the registration form, and in the third stage, we ask the user for points and feedback.

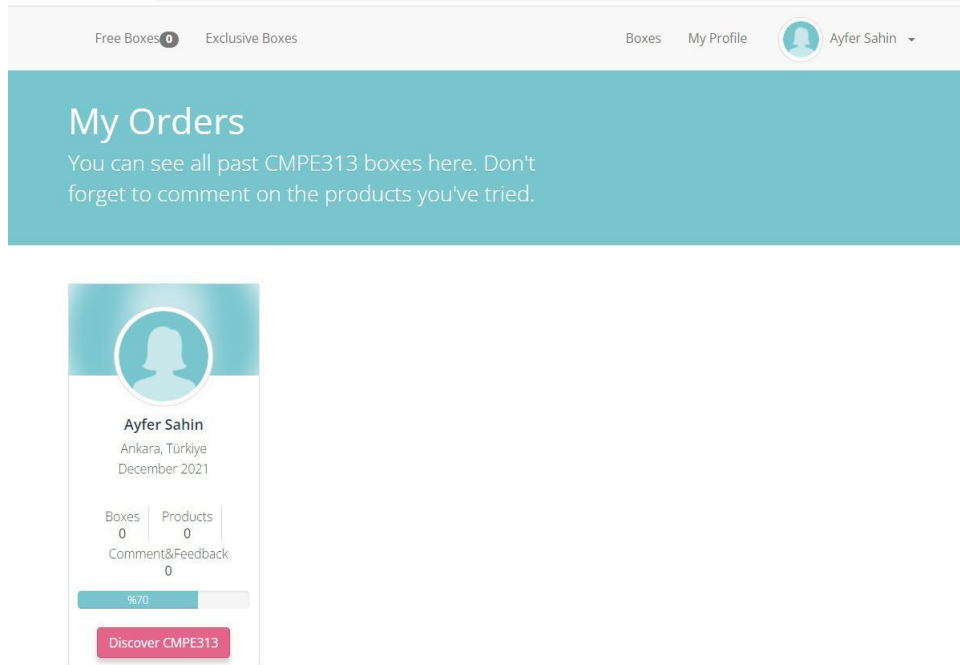


Figure 3

As indicated in Figure 3, the user will be able to see the received and sent packages in his account. By pressing on these packages, comments and ratings will be made, which will increase the customer score.

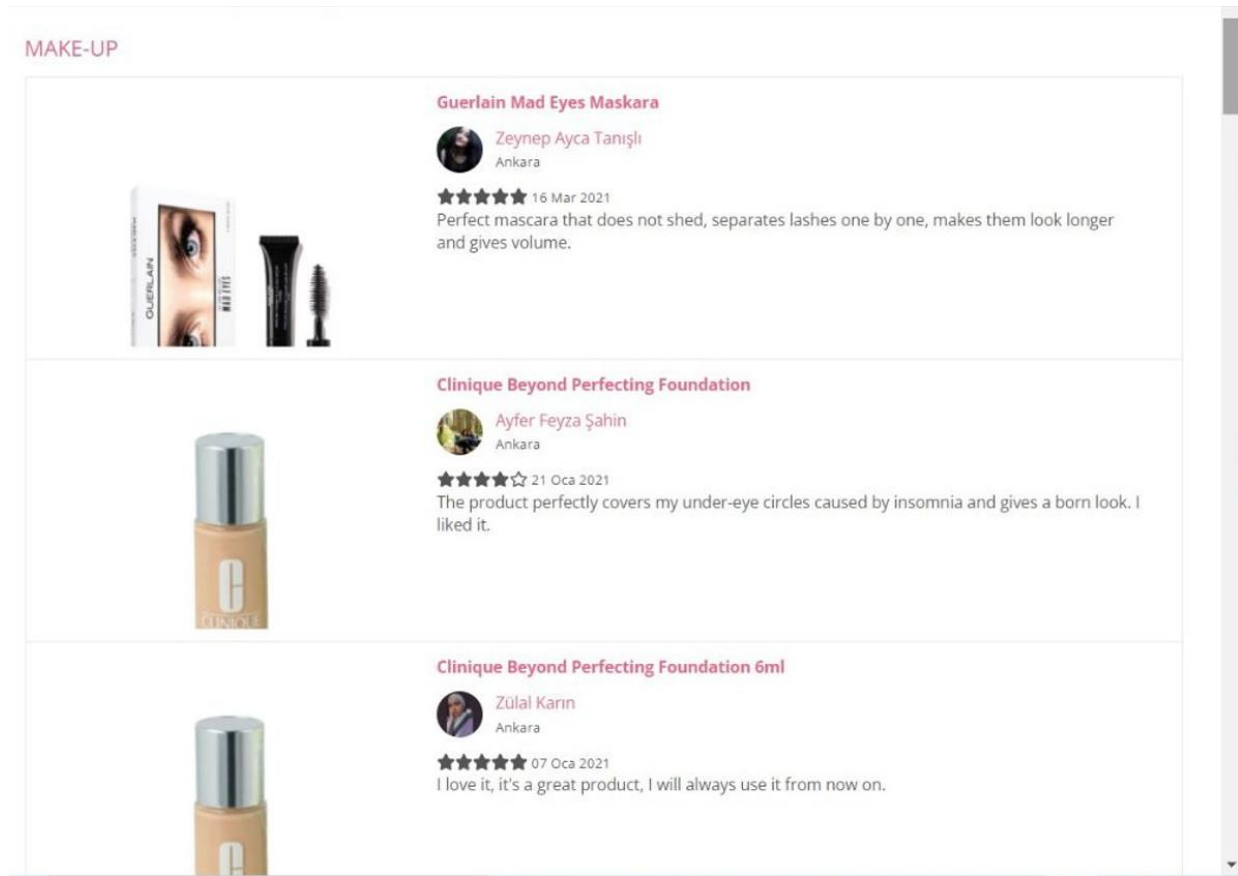
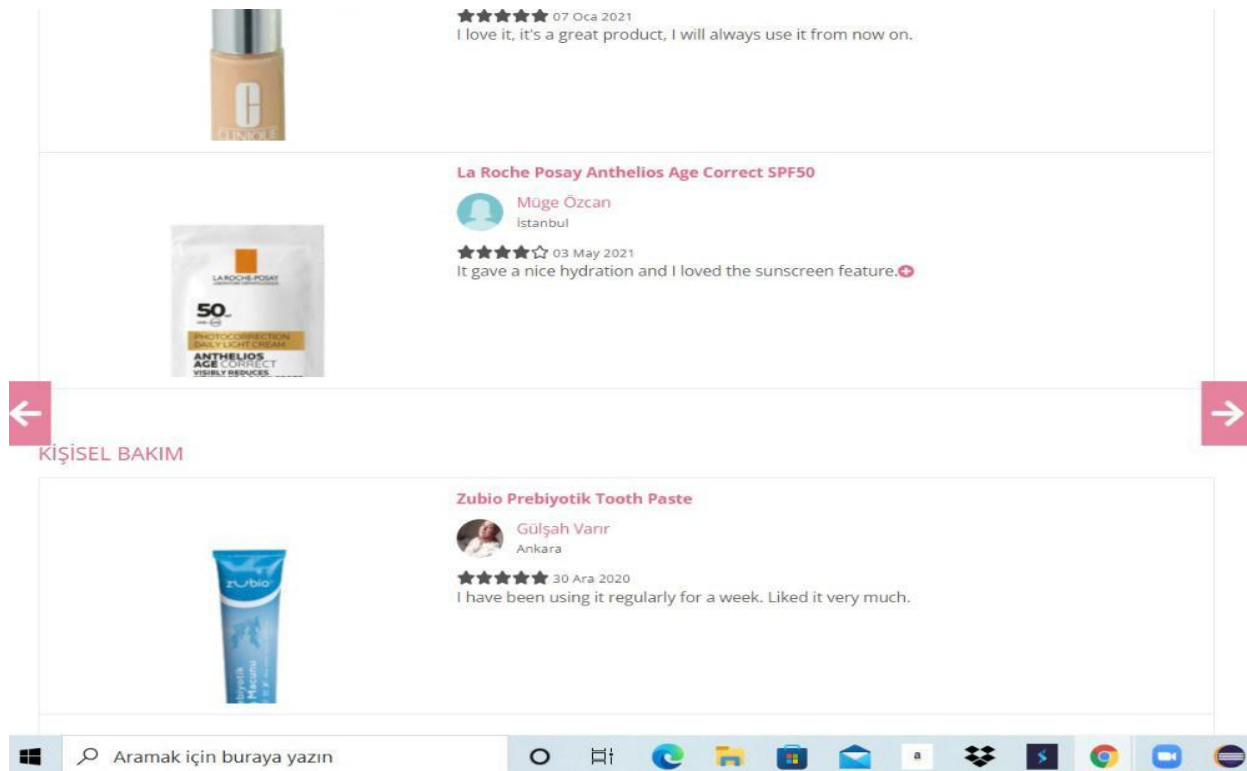


Figure 4

Figure 5



User comments and scores will be viewable in Figure 4 as in Figure 5. We will send the products we think are suitable for the customer to the customer's home page. In line with these comments, the customer will decide whether to buy the product or not.

3.2 Hardware Interfaces

A computer, tablet or phone is sufficient for the website to work. The website can be accessed from these devices with sufficient memory and speed. We did not use an external database. HTTPS protocol was used as personal financial information such as credit card numbers were requested from customers.

3.3 Software Interfaces

As long as all users register on our website, there will be no barriers to accessing our system.

SOFTWARE USED	DESCRIPTION
Operating System	We choose Windows 8,9,10 as a operating system. Because Windows is easy to use and everyone has access to it, so we thought it made more sense to choose it.
MySQL Database Server	We use a database to keep records of various user entries, the names of the products on the website. We used MySQL in this system.
Html, Css, js	When we enter a website, we see a complex and interactive design with texts, images. It helps us make pictures that make it work or the values we need to add, questions as well as dropdown lists.
Java, Spring Boot	The back end is the part of the website which customers do not see. To put it another way, programming constructs the system's design, organizes database management, is in charge of server settings, and guarantees that the system runs as effectively and rapidly as possible. We have done coding on Spring Boot using Java.

We took the “Denebunu” site as a reference. We created Box of Beauty, which meets many of the features expected from a beauty application.

3.4 Communications Interfaces

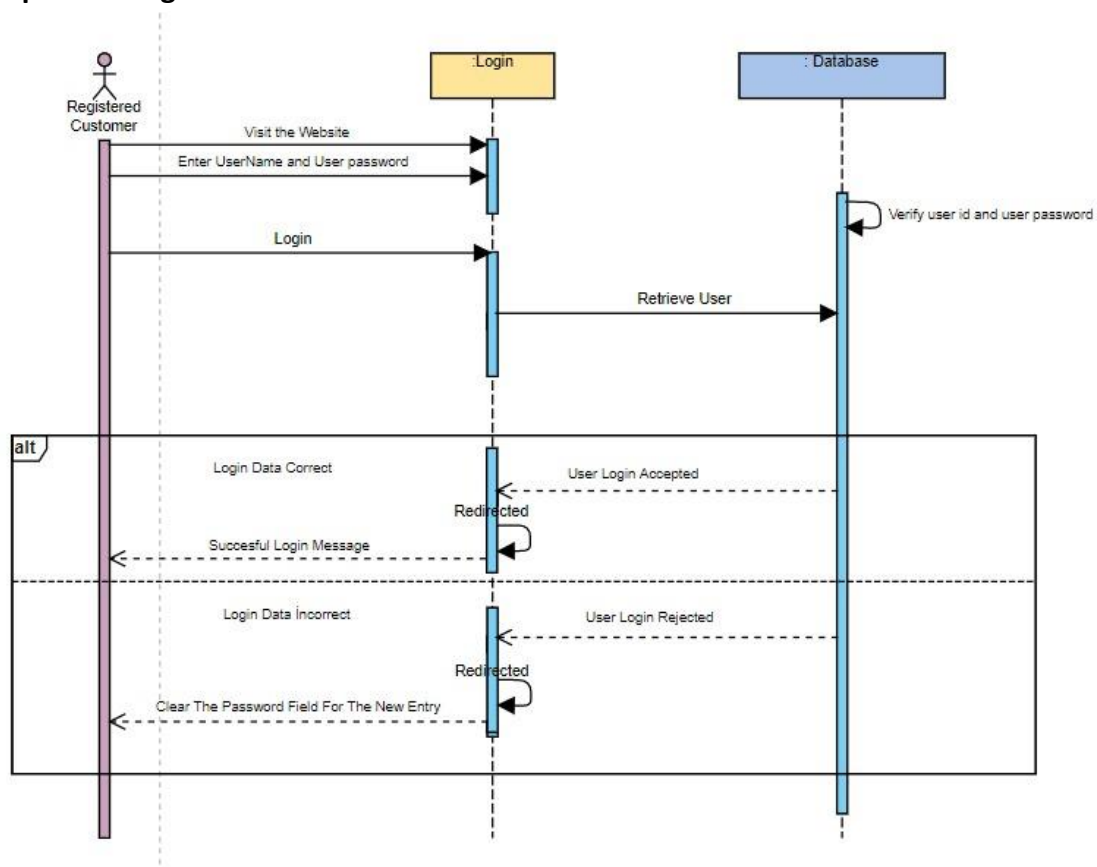
The online shopping system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite. Only text information(HTTP) will be supported.

The two parties should be connected by LAN or WAN for communication purposes.

- **Ethernet LAN interfaces** - Used for connecting cables that terminate with LAN devices, such as computers and switches.
- **Serial WAN interfaces** - Used for connecting routers to external networks, usually over a larger geographical distance. Similar to LAN interfaces, each serial WAN interface has its own IP address and subnet mask, which identifies it as a member of a specific network.

4. System Features

1- Login-Sequence Diagram



4.1.1 Description and Priority

The main purpose of the login sequence diagram is where the customers will log in to their accounts. If they have entered their username and password correctly, they can log in to their own accounts. If they have entered the wrong login, we get an error message to the system and we want the information to be entered again. If we cannot remember the username or password, I forgot my password again. You can get a new password with If an incorrect transaction is entered into the system many times, the system receives an error in terms of security.

Utility score(Benefit): 9, because it's a must-have feature.

Cost: 4, the cost will not be high since we are reusing a feature that is already in use.

Risk: 2, we do not keep the user's passwords in text in the database and we ask the user to create a strong password. Therefore, we minimize the risk.

Penalty: 2, we do not lock his account when the user logs in incorrectly several times. We send a link to your e-mail account to reset the password.

4.1.2 Stimulus/Response Sequences

User action

- 1) Entering the customer's name
- 2) User enters password for a specific length

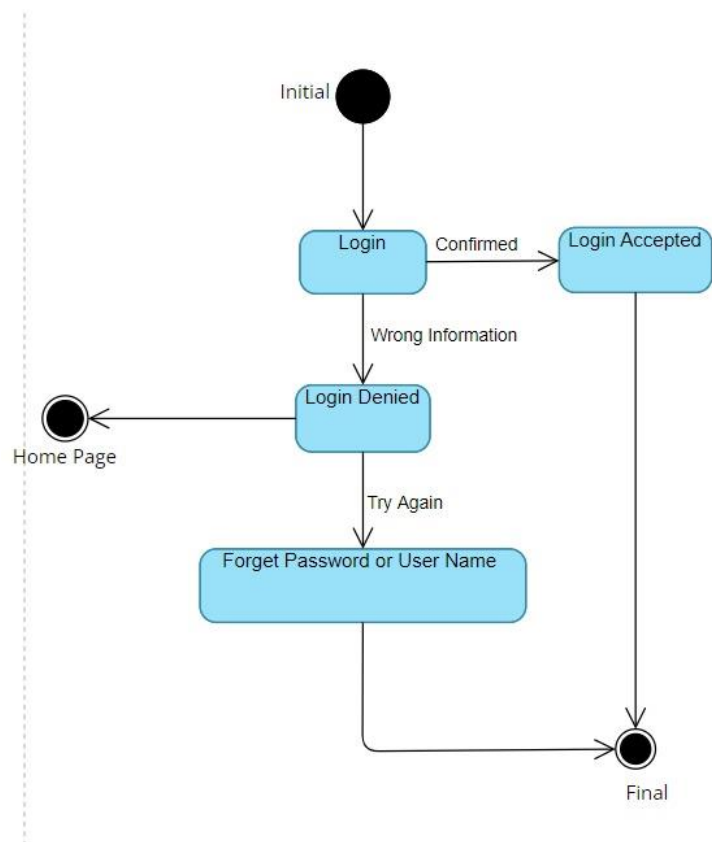
System Action

- 1) Checking that the entered values are wrong try again
- 2) Check the values are true successfully enter the user account
- 3) Displaying the users account page

4.1.3 Functional Requirements

REQ 1) The password and user name received from the customer must be unique for everyone.

REQ 2) If the entered value is wrong, the system should print an error message.

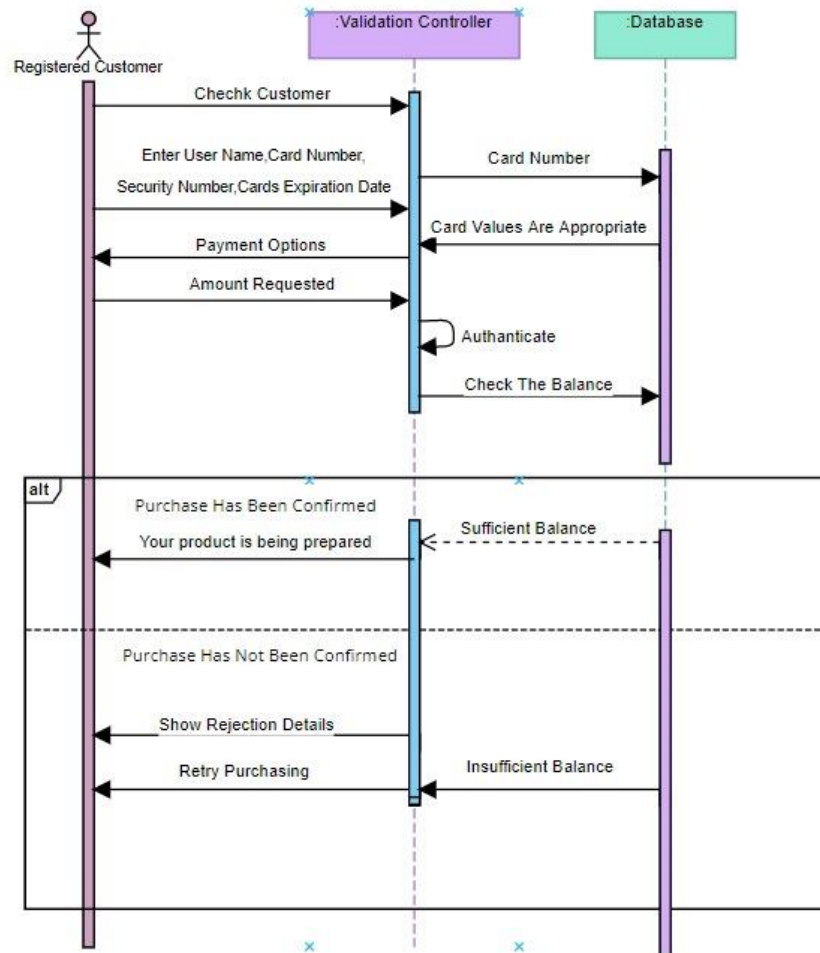


Login-State Diagram

REQ 3) If the entered value is entered incorrectly many times, a security warning should be given in the system.

REQ 4) However, if there is no error and it has been entered into the system properly, the customer's personal account has been logged.

2- Validate Customer-Sequence Diagram



4.1.1 Description and Priority

The main purpose of the Validate Customer is to give the customer the necessary permissions while shopping. The customer's safety is very important while shopping. The shopping is done by entering the card information within the prices of the products we add to the shopping card, entering

the address information and checking the limit. If the purchase is not made, an error is given. As a result, the customer is asked to check the information and balance of his card again.

Utility score(Benefit): 9, because it's a must-have feature. Purchasing system is really one of the most important feature.

Cost: 6, the cost will relatively be high since we are reusing a feature that is already in use. Because Security operations are very important, so a high quality security system code must be used.

Risk: 7, Since very important information of customers is recorded in the system while shopping (For example, card number, cardholder's name, card number security code, card expiration date).

Therefore, the security level should be at the highest level and there should be no leakage to any system.

Penalty:8, in the event of an unexpected situation, the customer has the right to sue, and if he wins, compensation must be paid. For this reason, penalties are applied. Continuity of the confidentiality of the customer's information must be strictly ensured.

4.1.2 Stimulus/Response Sequences

User action

- 1) Entering the customer's wants in the shopping card
- 2) Customer will check their shopping cards
- 3) They will go to the verification part and press the button buy items
- 4) Customers will enter the information's wanted from them like card number, cardholder's name, card number security code, card expiration date and the addresses.

System Action

- 1) After entering the information into the system, the confirm button is pressed and checked by the system.
- 2) If the information is incorrect or there is not enough balance on the card, an error message will be displayed and the information will be rechecked.
- 3) If the information is correct, the system will confirm the received orders, and as a result, a screen will appear stating that your orders have been received.
- 4) Customers can view and track their orders anytime from their account.

4.1.3 Functional Requirements

REQ 1) All information entered into the system must be correct and specific to each individual. Therefore, the information entered the system must be accurate and personal.

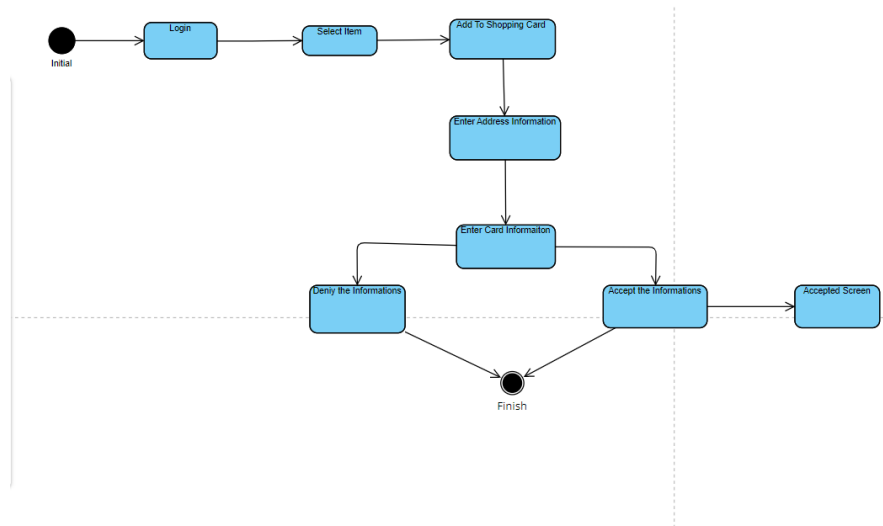
REQ 2) System security should be at the highest level.

REQ 3) If the shopping is confirmed, a text is written on the screen and the cargo tracking screen and the cargo tracking number are displayed on the screen.

REQ 4) After shopping, the customer can save the card information to the system or make changes later. And so you can easily shop.

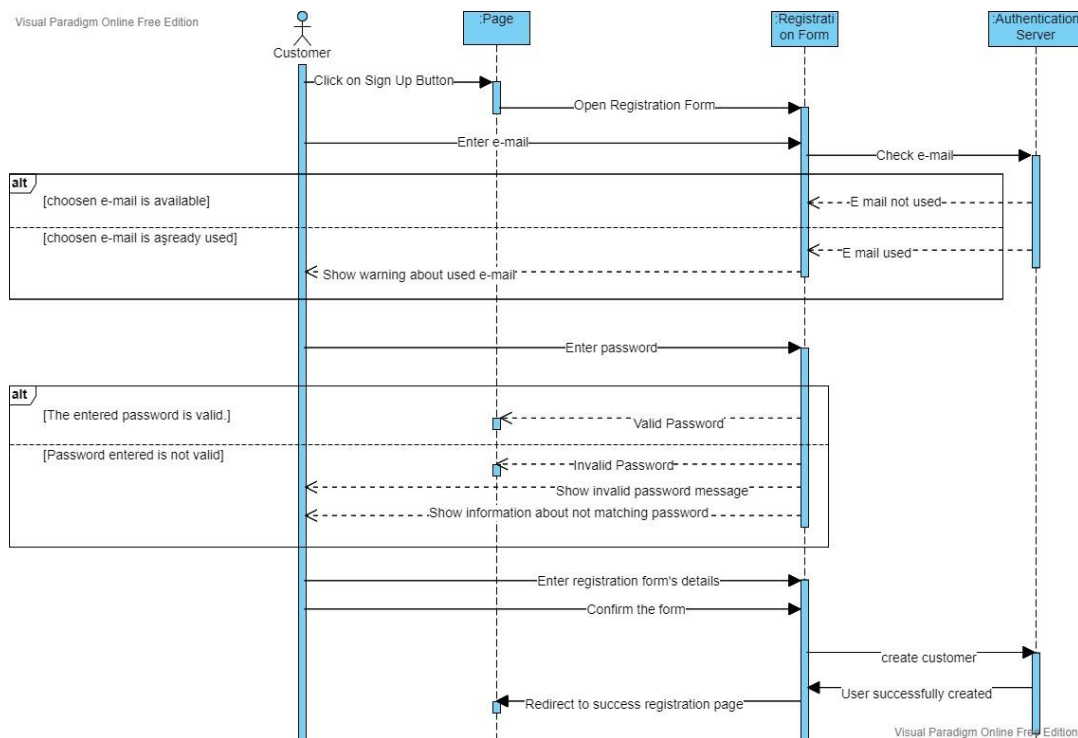
REQ 5) If the customer wishes, they don't have to worry about card, security and privacy by using the money they have in the system by loading money into a special card prepared for them by Boc of Beauty on my site.

REQ 6) Customers are entitled to points accumulated when shopping in advance. With these powers, you can use the points earned and shop.



Validate Customer-State Diagram

3- Register-Sequence Diagram



4.1.1 Description and Priority

The user registers in the system here. First, he enters his e-mail. If the e-mail has been used before or if it is a non-existent account, it receives a warning. If e-mail is available, a password is entered. We ask the user to create a strong password because we will keep the address and credit card information in the system. If the password is not entered in the desired format, a warning is sent to the user. The desired password format is specified (number of characters, capitalization, use of symbols, etc.) Then we request detailed information from the user. This is the form that our site creates to recognize users. When all these conditions are met, member login is provided.

Utility score: 9, because it's a must-have feature.

Cost: 3, the cost will not be high since we are reusing a feature that is already in use.

Risk: 5, we do not keep the user's passwords in text in the database and we ask the user to create a strong password. Therefore, we minimize the risk.

Penalty: 1, we do not lock his account when the user logs in incorrectly several times. We send a link to your e-mail account to reset the password.

4.1.2 Stimulus/Response Sequences

User action

- 1) Entering the customer's e-mail
- 2) User enters password
- 3) Filling the registration form and entering the information.
- 4) Submitting the registration form

System Action

- 1) Checking that the e-mail exists and has not been used to create an account before.
- 2) Checking if the password is strong, if not, sending a warning message
- 3) Creation of the user
- 4) Displaying the user welcome page

4.1.3 Functional Requirements

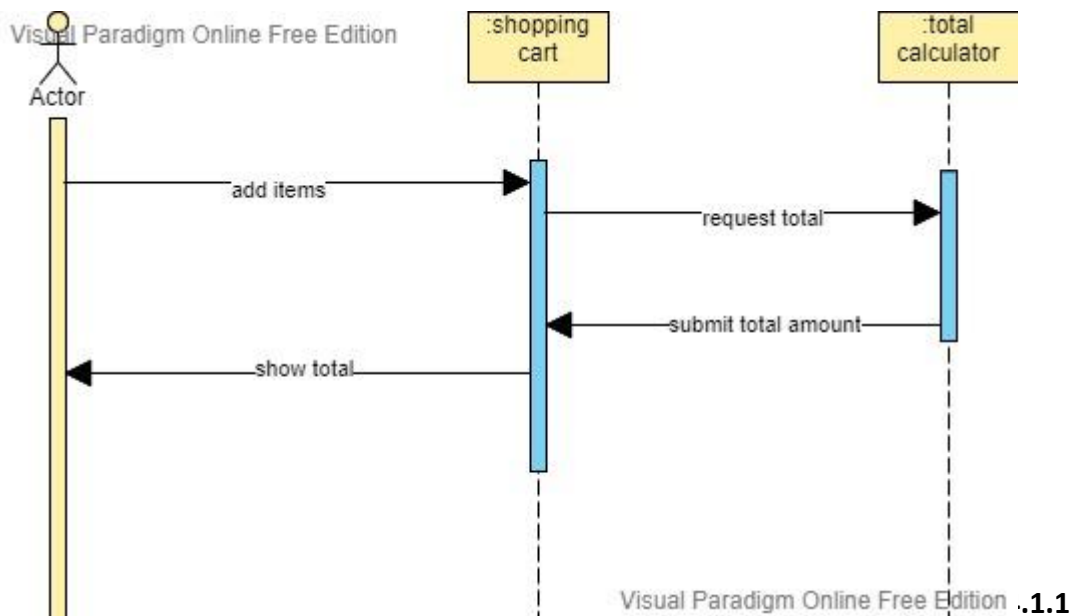
REQ 1) The e-mail received from the user must be unique and not used before.

REQ 2) The password received from the user must contain upper- and lower-case letters, symbols, and numbers. It must be a minimum of 8 characters and a maximum of 15 characters.

REQ 3) If the password is not entered into the system in the desired format, a notification message should be sent to the user.

REQ 4) In case the user registers successfully, the user information should be registered in the system and the user should be directed to the welcome page.

4-Prepare bill- Sequence Diagram



Description and Priority

It is the process of sending an invoice to the user after adding a product to the user card and purchasing the product. When the user adds products to his card, the price of the products is collected and displayed in the shopping cart. When the customer performs the purchasing function, this price information is sent to the customer.

Utility: 5, its materiality comes after registration, login and ordering. However, it must be applied as per the procedure.

Cost: 3, the cost will not be high since we are reusing a code that is already in use.

Risk: 7, in case of an incorrect calculation, a legal crime will be committed, so a complete calculation must be made.

Penalty: 8, in the event of an unexpected situation, the customer has the right to sue, and if he wins, compensation must be paid. For this reason, penalties are applied.

4.1.2 Stimulus/Response Sequences

User Action

- 1) Add product to cart
- 2) Confirm products

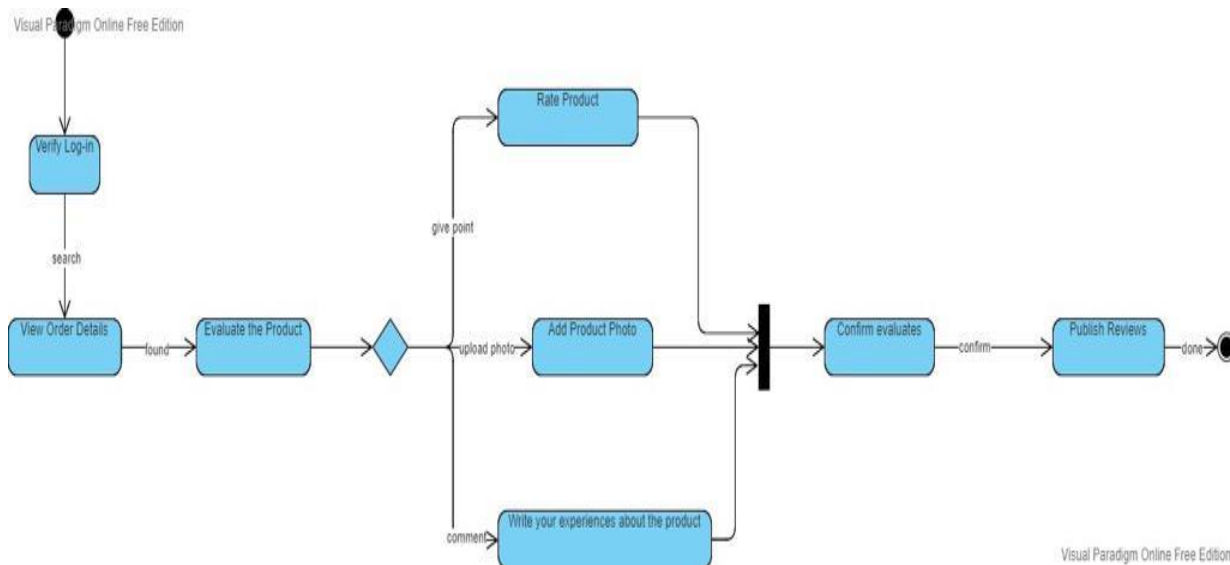
System Action

- 1) Do the total calculation
- 2) Inform the total calculation with details and send it to the user

4.1.3 Functional Requirements

REQ 5) Add the price of the products when the user approves the products in their cart. If applicable, apply the discount prices and shipping prices above the product price.

REQ 6) Document the product price with its details (date, brand, payment method, etc.) and send this document to the user via e-mail.



Comment Feedback- State Diagram

4.1.1 Description and Priority

When the user logs in, they will be able to see the products they have ordered in their account, and they will have a chance to give feedback when they go to the tab of these products. The user will have 2 ways to give feedback. First, it can only score. Second, besides rating, it can add comments and images. Then these comments and photos go to control. It is published on the website after passing the control process.

Utility: 3, Transactions such as registration, logging in, ordering and order notification take priority. But this is also very functional for customers.

Cost: 6, It is necessary to create a bot system for the written comments, but a control team is required for the images. Sharing irrelevant images on the site reduces reliability. The control team can be somewhat costly.

Risk: 2, There is no risky situation with the control and bot team.

Penalty: 1, There is no punishment situation.

4.1.2 Stimulus/Response Sequences

User Action

- 1) Login to the system
- 2) View order details
- 3) Evaluate the product

4) Rate or rate and comment

5) Confirm your review

System Action

1) Check login information

2) Redirect to order page

3) Redirect to product evaluation page

4) If there is a comment, check it with the bot, if there is a photo, send it to the control team

5) Publish the review

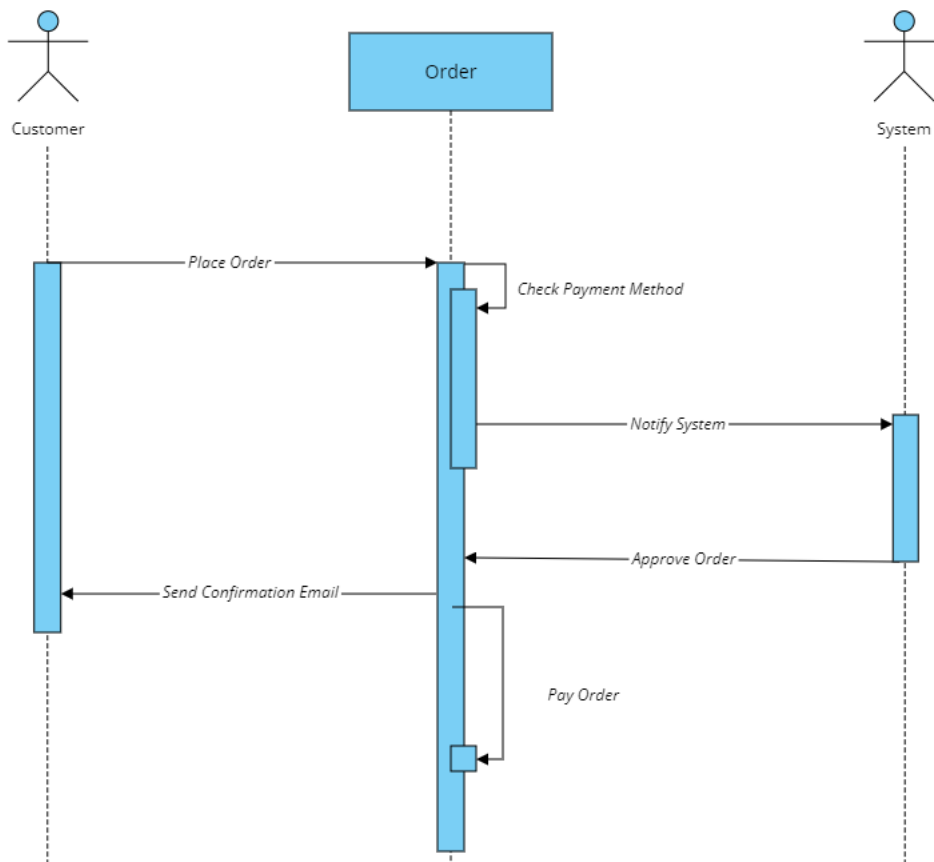
4.1.3 Functional Requirements

REQ 7) Profanity etc. in the user's comment. If a word is found, send a notification e-mail to the user. Ask him to repeat the comment.

REQ 8) Request an increase in customer rating when the user comments.

REQ 9) If the photo is unrelated to the product, send a warning message to the customer.

5-Sequence Diagram of Pay Order



Description and Priority

After an order is placed, the payment method is checked. There are 3 ways of paying the order bill which are listed as a credit card method, gained points, in-door payment. After the customer chooses one of the payment methods the System gets notified and is informed whether there is sufficient balance to complete the order and approves the order accordingly. If the payment method gets approved, the customer pays for its order and receives a confirmation mail about the order by default.

Utility score: 9, critical requirement; required for next release

Cost: 4, requirement complexity, the extent of user interface work required isn't so high

Risk: 2, there's a security check for payments, so the risk is minimized.

Penalty: 9, the customer or our site would suffer if the feature is not included

Stimulus/Response Sequences**User actions**

Places an order.

Pays for an order.

System responses

Checks the payment method.

Approves the order if it gets approved.

Sends a confirmation email by default after each order.

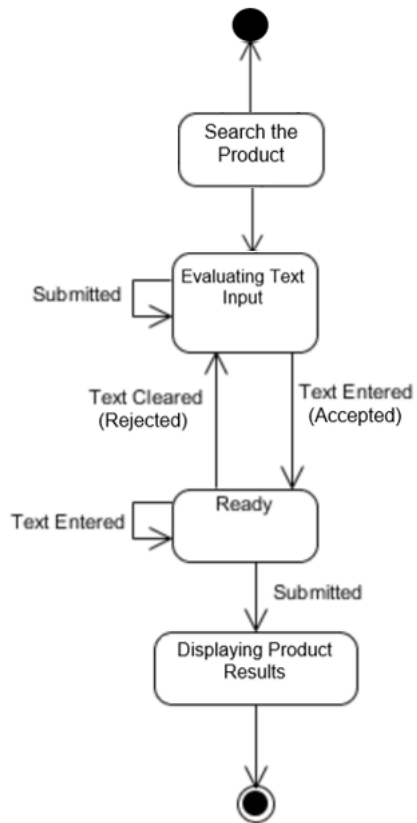
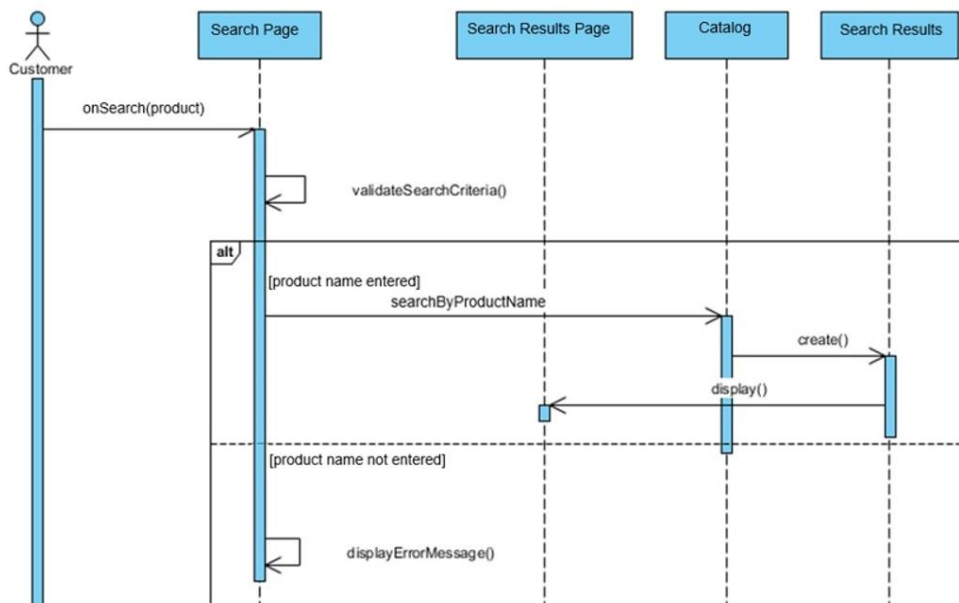
Functional Requirements

The website must accept orders of the customers.

An confirmation e-mail is sent after order is paid by the customer.

The e-mail that will receive the confirmation e-mail must be unique and not used before.

Payment method must be valid and there must be sufficient balance in order to complete the order.

6-State diagram of search**Sequence Diagram For Search**

Description and Priority

Customers can only use our site if they are logged in. After the customer logs in to our site, it can search for the product by its name. After the text is sent by the customer, the system evaluates the text input. If the text input doesn't meet the approval standards then it's rejected and it requests for customers to retype the text again. If it's accepted, the system displays the related products according to what the customer types in.

Utility Score: 5, doesn't necessarily a critical requirement; the customer doesn't have to use the search function every time.

Cost: 3, requirement complexity, the extent of user interface work required isn't so high.

Risk: 2, there's a text validation check for each search, so the risk is minimized.

Penalty: 5, the customer or our site wouldn't suffer if the feature is not included but it's still needed for ease of use.

Stimulus/Response Sequences**User actions**

Search the product.

System responses

Evaluates the submitted text.

Rejects or approves the text input according to default standards.

Displays the products to the customer.

Functional Requirements

The system must support the searching permission of the user.

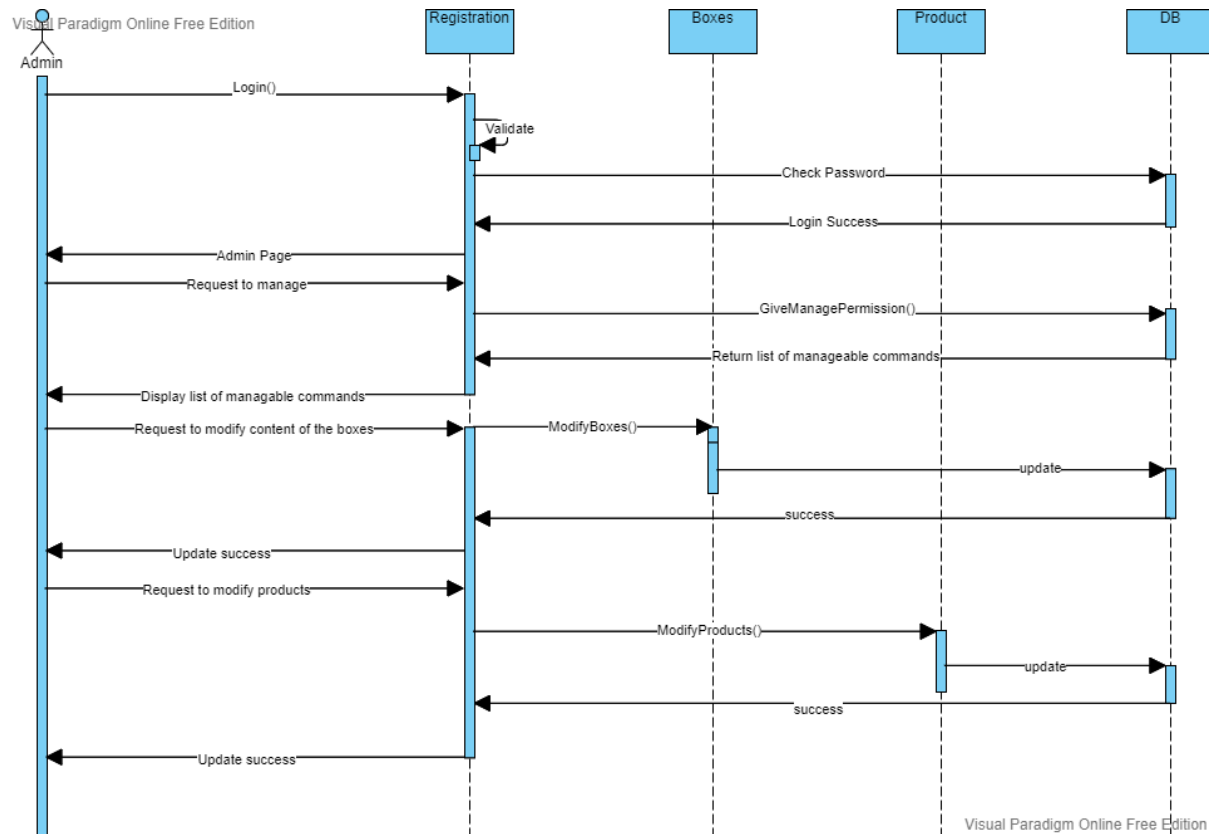
The system must provide the product list for the customer to display.

The system validates text input.

The system has a default text input that should accept.

The system can process the text input and returns one of two results. Either it rejects the text or approves it.

7-Sequence Diagram of Admin Panel



Description and Priority

Admin has to log in to the site with its personal password and username. After the admin logs in to the site, the system checks the password whatever it's correct or not with the comparison of the values of the admin's database. If the password is correct, the admin successfully connects to the site and gets the permissions of the admin page. Admin can request to manage to make configurations about the site. If the admin requests to manage the site it returns with the list of manageable commands that are presented to the admin. One of the assets of our site is the boxes and the admin has permission to modify them. After the admin updates the boxes contents it finalizes with success. Also, the admin can modify the products and everything that is related to products. (eg: categories of the products) Again, after the admin updates the products it finalizes with success.

Utility Score: 9, a critical requirement; admin needs to connect to the DBS and make configurations

Cost: 8, requirement complexity, the extent of user interface work required is high because this time it involves many databases and functions.

Risk: 2, there's a log in validation check for each time the admin tries to log in, so the risk is minimized.

Penalty: 9, the customer or our site wouldn't suffer if the feature is not included because then the site reverts to an un-updated, non-working application if the admin fails to work on site.

Stimulus/Response Sequences

User actions

Admin can log-in.

Admin can request to manage.

Admin can request to modify content of the boxes.

Admin can request to modify products(and everything related with products).

System responses

The system validates the log-in information.

The system gives log-in success to the admin.

The system gives management permission.

The system displays the admin page to the admin.

The system successfully configures the updates after the admin modifies the products.

The system successfully configures the updates after the admin modifies the content of the boxes.

Functional Requirements

Admin must enter username and password to log in.

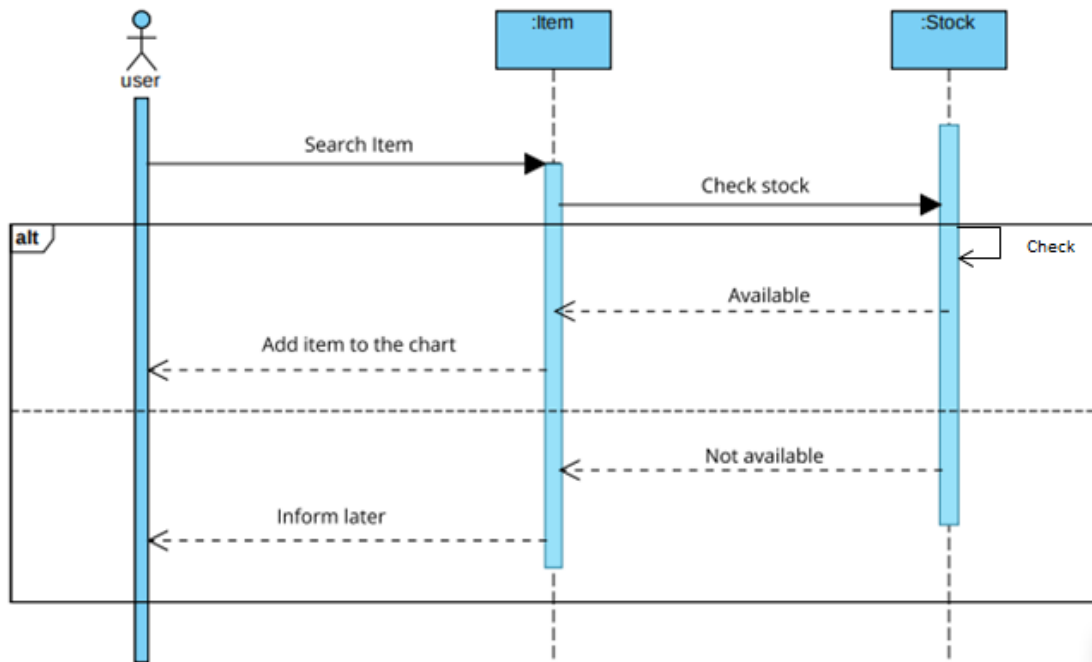
A login success message will be given if the username and password are correct.

The system lists all the manageable commands to the admin.

The system connects the admin to the product & boxes database and it displays all the data to the admin for configuration.

Admin can view each of the databases and modify them in case of need.

8-Buy Items-Sequence Diagram



4.4.1) Description and Priority

This feature allows the user to search for the product and add the product he likes to his cart. Only registered customers can use this feature. First, the stock status of the product that the customer wants to buy is checked. If the product is in stock, the user can add the product to the cart and the product will be ready for invoice payment. If the product is not in stock, the customer is informed when the product is supplied.

Utility score 8, because it is not as important as login or billing, but it is one of the main steps to ensure product purchasing.

Cost 5, because it's a simple process.

Risk 6, because if the database is not updated quickly enough, an out-of-stock product may be added to the customer's cart.

Penalty 5, because a customer who accidentally orders an out-of-stock product can cause problems.

4.1.3 4.4.2 Stimulus/Response Sequences

User Actions

1) The user searches for the desired product and clicks the search button.

2) If the product is available for purchase, that is, if it is in stock, the user adds the product to his cart with add to chart button.

3) User starts account payment transactions.

System Responses

1) The system checks the stock status of the product the user wants to buy.

2) If the product is available, it allows the user to buy the product.

3) If the product is not available, the user is informed.

4.1.4 4.4.3 Functional Requirements

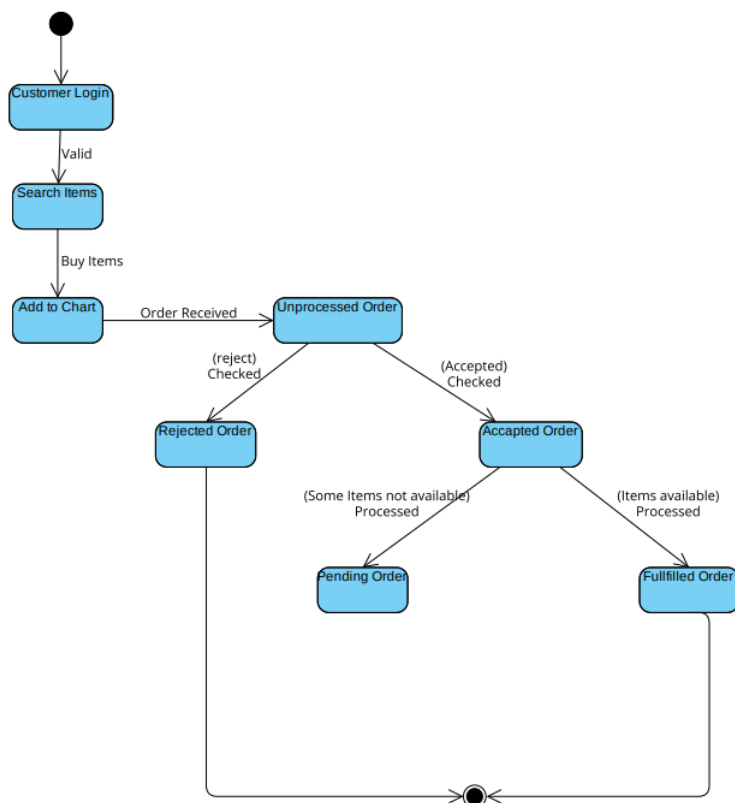
REQ 1) User must be logged in to purchase products.

REQ 2) The system should warn the user for out-of-stock products.

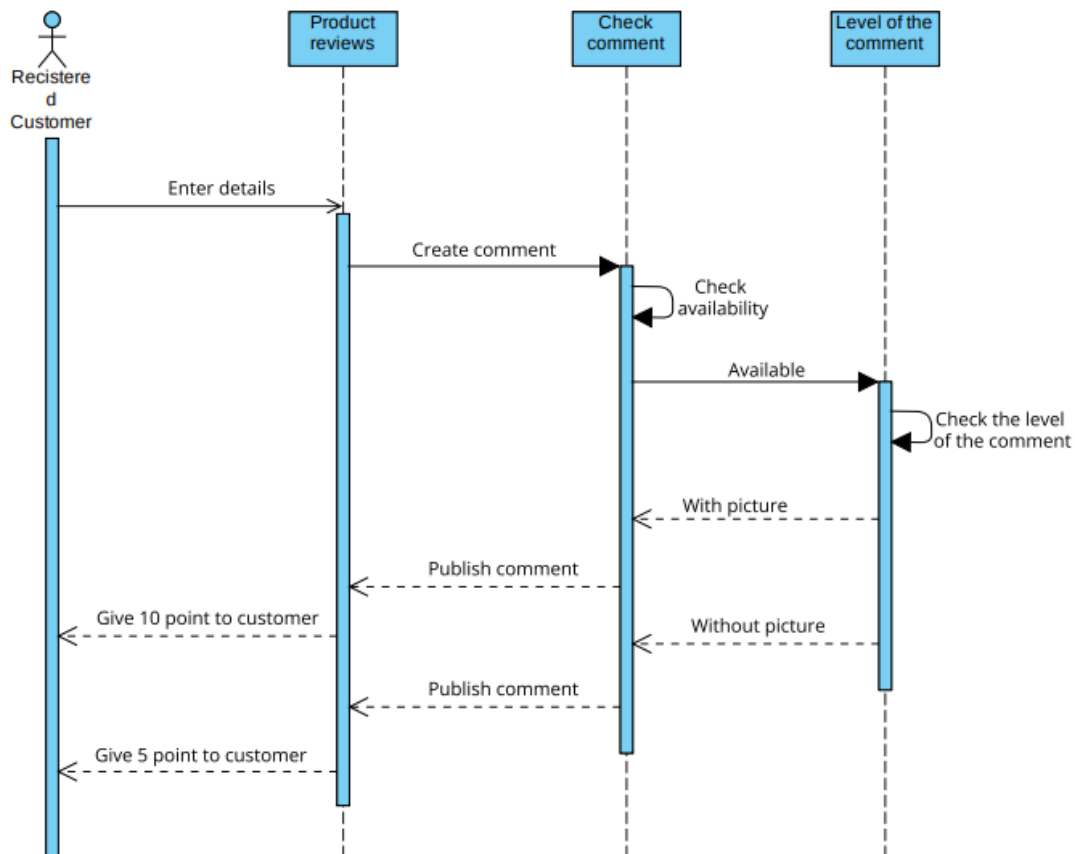
REQ 3) Serch button

REQ 4) Add to chart button

State Diagram for Buy Item



9-User Comments-Sequence Diagram



4.1.1 Description and Priority

Product reviews are of great importance to OSS. In this feature, the user can comment on the product he has purchased. If the comment does not contain any malicious intent, insults or false information, the comment will be published. Comments can be with or without photos. Users who comment with photos receive 10 points, while users who comment normally receive 5 points. Utility score is 8, because the main point of our site is product testing, product reviews, user feedbacks are very important for the site.

Cost 8, because an artificial intelligence is used to check the relevance of the comments.

Risk 4, because there is no other risk than posting an inappropriate comment.

Penalty 1, because there are no sanctions for inappropriate comments.

4.1.2 Stimulus/Response Sequences

User Actions

1) The user goes to the comment section of the product he bought by clicking the product reviews button from her account.

2) Enters a comment for the product he has purchased and clicks the publish comment button.

System Responses

- 1) The suitability of the comment written by the user is checked by the system.
- 2) If the comment is appropriate, the level of the comment is determined by the system.
- 3) Points are assigned to the user's account according to the level of the comment.

4.1.3 Functional Requirements

REQ 1) only registered users can comment.

REQ 2) The system should not publish inappropriate comments.

REQ 3) Comments with and without pictures should be given different points.

REQ 4) Product view button

REQ 5) Publish comment button

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements typically specify how things should perform or the standards they must achieve under a certain set of conditions. Our online shopping system is designed to give the user the fastest, safest, and most cost-effective performance that ensures the interfaces are attractive, simpler, and flexible to use.

System management mainly depends on the number of terminals to be supported, the number of simultaneous users to be supported, and the amount and type of information to be handled which relies on the servers and the database. That's why servers will be designed to handle possible delays of pages and implementations done with PHP will work fast. Data transmissions will be smooth. Servers must handle at least 1000 users connected at the same time. In cases where the extra action is needed to balance the connection overload admins must be able to access the PHP codes and edit them. Also in front-end development the CSS frameworks are designed to be fast and efficient so there will not be any website-sourced problems (such as loading time problems etc.). A website must be able to load in users' browser and must respond to user and in less than 120ms.

5.2 Safety Requirements

If there is a lack of safety and security in the online shopping system, it will cause many problems and put the system data at risk. It will create a hug problem for the system and user. Some safety requirements are applied to ensure our customers are safe while using our online shopping site.

- After an order is placed is provided two-factor authentication by an SMS message to complete an order. If the SMS message is entered incorrectly 2 times, the use of the user's payment information is blocked by the system. This issue can only be resolved by contacting customer service.
- The account is locked after 3 incorrect PIN guesses to prevent usage of private information such as username or password by unknown users while the user is logging into the site. This issue can only be resolved by using the change password link that comes to the user's e-mail.
- Input validation must be processed by the developers to prevent any potential SQL injections that can attackers apply. If such an attack happens by a hacker that's trying to hack our website it leads extraction of private data, such as credit cards, passports, hospital records or it can destroy operations for the entire website.
- Padlock symbol indicates that the web page that's the user is visiting is secure. Our website's security certificate has been verified to ensure that the user's connection and private information are secured by our site.
- Third-party risk is the potential threat presented to organizations' employee and customer data, financial information, and operations from the organization's supply chain and other outside parties that provide products and/or services and have access to privileged systems. Our site uses a mechanism that limits third party risks from accessing a user's account.
- To prevent data losses developers must take frequent backups or the whole system can crash.

5.3 Security Requirements

- Authorization and password management are two important aspects of security.
- We need to reveal the needs of the system for its own security. And thanks to a certain framework, we must ensure its security. Developer, customers and employees, project managers have access influence. The network must have a firewall and using the site must be safe in all respects.
- When there is a breakdown in any system or in case of a dangerous system attack or a disaster, there should be authorizations such as data backup and data recovery, and data

should be recovered. There must be data security for the system. Data security of users must be ensured within the system and a secure environment must be provided.

- Role administration and authorization
- Keeping track of audits and analyzing them.
- Data and network safety.
- Verification and code integrity checking
- Verification and sanitization of information

5.4 Software Quality Attributes

According to *CMMI models*, we aim to have the highest software maturity model. In the most mature model 5, that is, in the stage called optimizing, the software performance is tried to be continuously improved. Risks are minimized. This is the hallmark of quality software.

A quality code should be revealed for the user. The design phase is very important. Design is one of the heart of the system. For this, the necessary system requirements must be met. While designing the Web Site, we took care to have features that will increase the software quality. Here are some of them:

Maintainability: Our website is designed to be easy to maintain and easy to modify. It will be written with certain principles and SOLID software development principles will be applied.

Reliability: One of the most important features of quality software is reliability. To ensure this, every change made by the user will be immediately committed to the database.

Portability: We've designed our site to be reusable in a number of different applications.

Usability: Users can track the product they ordered at every stage of the delivery phase and see the order status.

Flexibility: Our site should be open to development and change. The requirements that arise as time progresses should be easily integrated and a long-lasting project should be provided.

Easy to Use: Our website should be easy and understandable to appeal to users of all ages and levels.

5.5 Business Rules

- User who has not purchased a product cannot comment on that product.
- Only admins can add products to the database.
- Only admins can specify the contents of the boxes.
- Only registered users can make purchases, skin tests, box purchases, comments and add to favorites.
- All registered or unregistered users can search for products and see product and product reviews.

6. Other Requirements

Appendix A: Glossary

OSS: Online Shopping System

HTTPS: Hyper Text Transfer Protocol Secure

CMMI: Capability Maturity Model Integration

DFD(Data Flow Diagram): It maps out the flow of information for any process or system.

DB: Data Base

Functional requirements: Functional Requirements define what a product must do, what its features and functions are.

Nonfunctional requirements: Nonfunctional Requirements describe the general properties of a system. They are also known as quality attributes.

Activity State: An activity represents execution of an action on objects or by objects.

Action Flow: Action flows or Control flows are also referred to as paths and edges.

Utility: scale of critical requirement

Cost: scale of requirement complexity

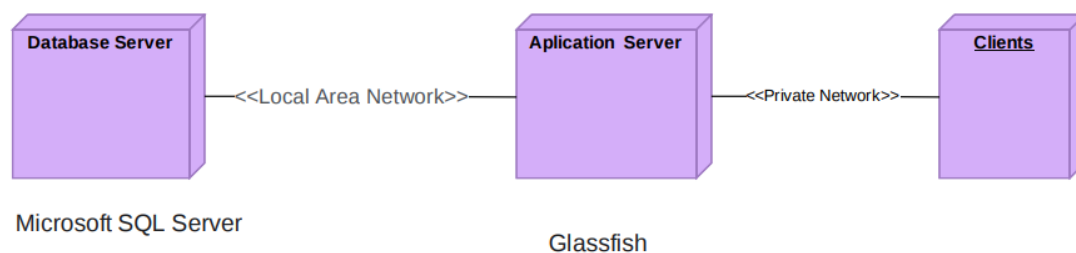
Risk: the probability of occurrence for uncertain events and their potential for loss within an organization

Penalty: Scale of whether the customer needs the feature or not

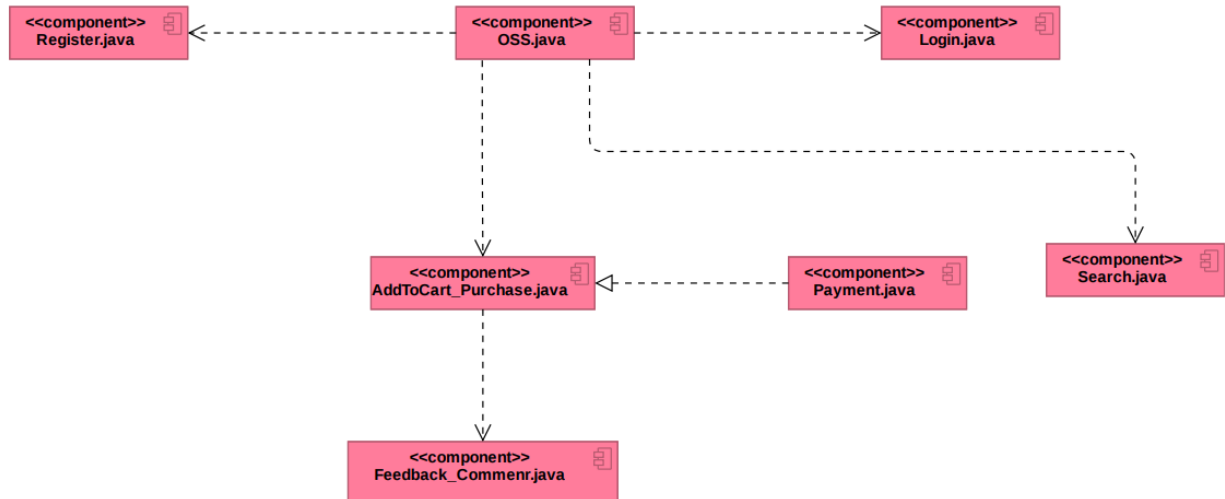
Appendix B: Analysis Models

1-Deployment Diagram

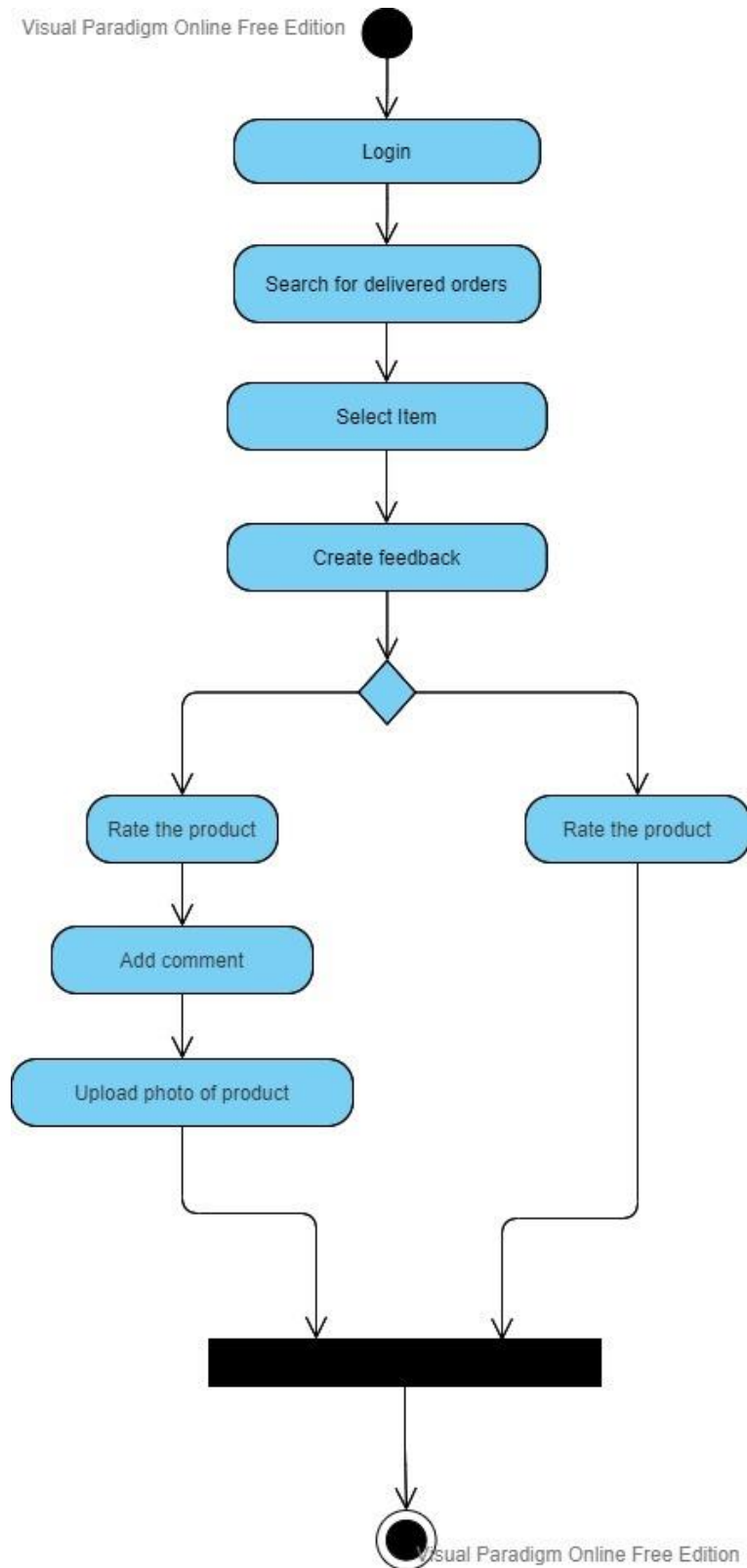
The deployment diagram is one of the structural Unified Modeling Language diagrams used in modeling software and other systems, and it shows a view of the modeled system from a certain a



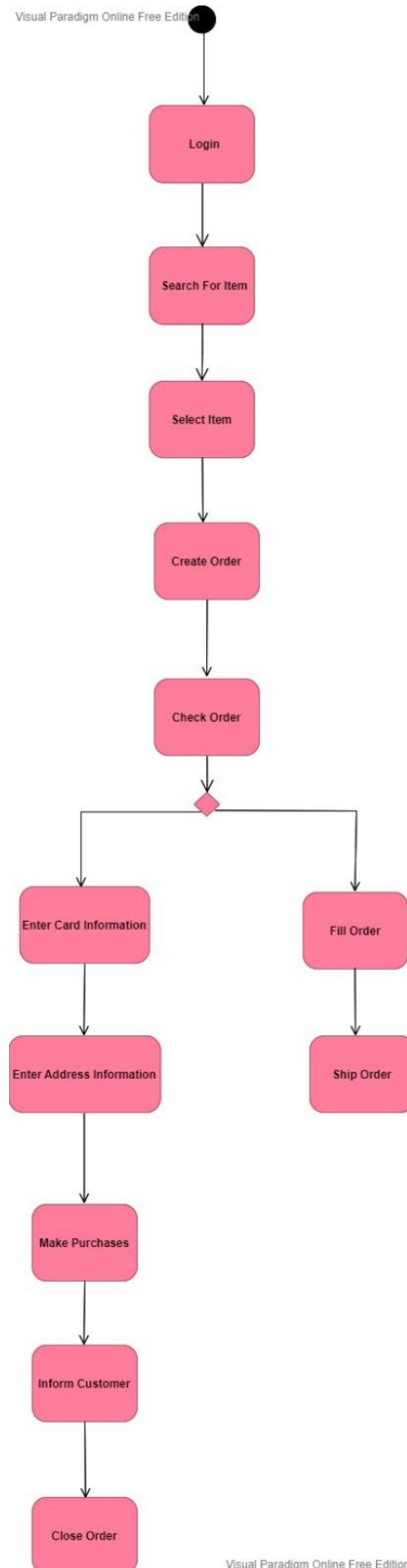
2-Comment Feedback-Component Diagram



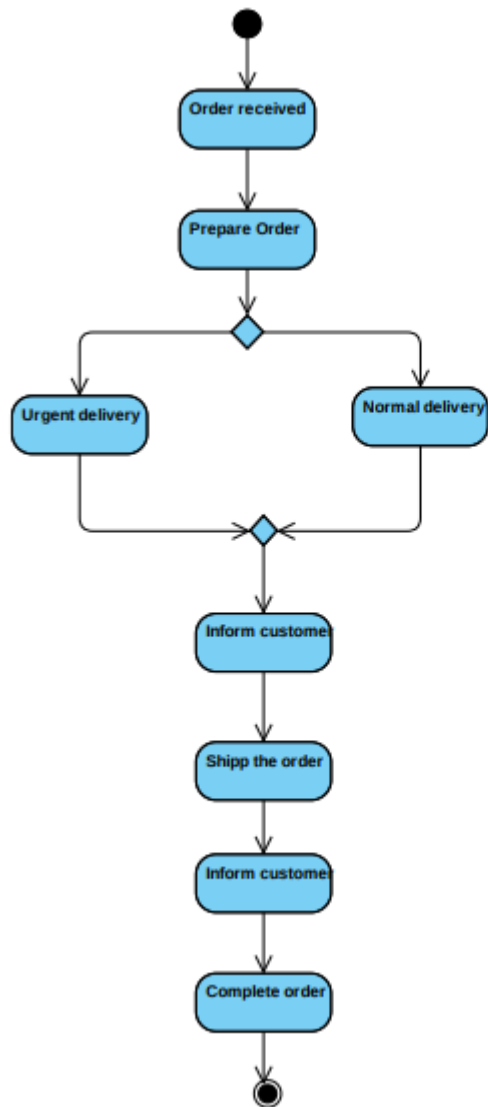
3-Comment Feedback Activity Diagram



4-Purchase Activity Diagram



5-Order Status Activity Diagram



Appendix C: To Be Determined List

User Interface

Figure 1-Users Login Page

Figure 2- 3 phases of using the OSS

Figure 3- Customer page

Figure 4-Comment Page

Figure 5- Comment Page