COMSATS University, Islamabad Pakistan

OnSpot

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Bachelor of Science in Computer Science / Software Engineering (2018-2022)

The candidate confirms that the work submitted is their own and appropriate credit has been given where reference has been made to the work of others.

COMSATS University, Islamabad Pakistan

OnSpot

A project presented to

COMSATS University, Islamabad

In partial fulfillment

of the requirement for the degree of

Bachelors of Science in Computer Science / Software

Engineering (2018-2022)

By

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DECLARATION

We hereby declare that this software, neither whole nor as a part has been copied out from any source. It is further declared that we have developed this software and accompanied report entirely on the basis of our personal efforts. If any part of this project is proved to be copied out from any source or found to be reproduction of some other, we will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

Hafeez Ullah   Muhammad Khobaib

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Application Evaluation History

Comments (by committee) *include the ones given at scope time both in doc and presentation	Action Taken
Deliverable: FYP-I Scope And SRS-Fall 2021: • Mr. Atique Ahmed Zafar: Scope: Students came with same issues which previously highlighted during scope evaluation. SRS:In use case diagram use of extend and include is incorrect. Use cases are incorrectly explored. use case naming are incorrect. Process steps are presented in the use case. Detail use cases processes are not properly explored. Derived functional requirements are incomplete due to weekly defined processes and requirement analysis. Currently Student is lacking in application domain understanding. Use case technique is not appropriate to explore and specify requirements of this project. • Ms. Zahida Walayat: Have no understanding of project idea. How they will implement these features is not clear till this stage of project. Not proper technique used. Knowledge related to the domain is very week. • Ms. Hufsa Mohsin Scope: Students do not have any knowledge on deep learning algorithms that is proposed for the solution. It will be hard to proceed without the domain knowledge. SRS: Missing requirements Event tables for backend functionality are missing.	
Deliverable: SDS and 40% Implementation Fall 2021: • Ms. Hufsa Mohsin SDS: Class diagram contains incorrect use of associations. Architecture diagram does not present the application structure. Sequence diagram needs to be revised Implementation: 2/7 modules are implemented. In login module no checks are applied. • Ms. Zahida Walayat SDS: All diagrams must have caption.	

Application is not presenting Application structure Activity data have syntactical mistakes Sequence diagram s are not mapped with classes. Implementation: 2/7 modules are implemented Poor GUI Checks are not applied	

Deliverable: FYP-II 60% Implementation Spring 2022
    • Mr. Atique Ahmed Zafar 's comments
       Document Comments
       All diagrams must have caption.
       Architecture is not presenting Application structure, it should be developed by mapping application components.
       Activity data have syntactical mistakes
       Sequence diagrams are not mapped with classes.
       Implementation:
       2/7 modules are implemented
       Poor GUI
       Checks are not applied
    • Ms. Hufsa Mohsin
       Document Comments
       All diagrams must have caption.
       Architecture is not presenting Application structure, it should be developed by mapping application components.
       Activity data have syntactical mistakes
       Sequence diagrams are not mapped with classes.
       Implementation:
       2/7 modules are implemented
       Poor GUI
       Checks are not applied
    • Ms. Zahida Walayat
       Document Comments
       All diagrams must have caption.
       Architecture is not presenting Application structure, it should be developed by mapping application components.
       Activity data have syntactical mistakes
       Sequence diagrams are not mapped with classes.
       Implementation:
       2/7 modules are implemented
       Poor GUI
       Checks are not applied	

CERTIFICATE OF APPROVAL

It is to certify that the final year project of BS (CS) **"OnSpot"** was developed by **Hafeez Ullah (CU/FA19-BCS-022)** and **Muhammad Khobaib (CU/SP18-BCS-117)** under the supervision of "**Mam Bushra Naz**" and that in his opinion; it is fully adequate, in scope and quality for the degree of Bachelor of Science in Computer Sciences

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Supervisor

External Examiner

Head of Department
(Department of Computer Science)

Executive Summary

The aim of the project is to launch a platform "OnSpot" that reflects the appearance and behavior of the products. OnSpot is an application that would help people to search items by image anytime, anywhere. It allows the users to input images into our multiplatform dynamic Web application and our system; comprising ML Algorithms compares the features of the image with maximum possible items from the local market and provides the links to online stores on which the item is available with lowest prices.

If user wants to purchase an item through image, our system will search online market and will give best lowest prices and top rating items from local online stores. This will include different Brands and we will scrap data from different websites of different brands. And by using ML Algorithms we will show the user, related products from the selected stores and brands according to which the user uploaded the pic. Providing location of brand outlet on map if user wants to shop by visiting the store. Give links to stores where the searched item is available on sale. User can save favorite items which he wishes to purchase later. If a user will search an image and he wouldn't find the related clothes from our database, then we will display him an option on demand. What does it mean? On Demand means when that user's searched product ever found in brands website, we will send him a push notification and an email regarding that product.

Acknowledgement

All praise is to Almighty Allah who bestowed upon us a minute portion of His boundless knowledge by virtue of which we were able to accomplish this challenging task.

We are greatly indebted to our project supervisor "Mam Bushra Naz". Without their personal supervision, advice and valuable guidance, completion of this project would have been doubtful. We are grateful to them for their encouragement and continual help during this work.

And we are also thankful to our parents and family who have been a constant source of encouragement for us and brought us with the values of honesty & hard work.

Hafeez Ullah   Muhammad Khobaib

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Abbreviations

SRS	Software Requirement Specification
PC	Personal Computer
SDS	Software Design Specification
WS	Web Scraping
IP	Image Processing
AI	Artificial Intelligence

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1 Introduction

The system proposed is related with the idea of search your favorite products(clothing) by image. The existing systems are focusing more on just shopping online and there are Mega platforms available on internet to buy products from shopping stores but our main target to provide a facility to the people to provide them clothes which they have seen wearing other people just by searching a pic of that product(cloths). We are proposing a system OnSpot where user can search through multiple categories according to his needs. After selecting the category, he will be provided with presets or templates related to that category having the basic functions. To search the related product, user will provide picture to our system of that product(cloths) and system will pop up related products in front of the user from the different brands nearby. We will provide location of brands if the user wants to buy products himself from the brands stores.
The part of the project covered till now is user profiling (in which user can interact with other users by following them), web scrapping (In this module, we used web scrapers which scraped data from the selected brand websites which are Gul Ahmad, HSY and J.) and image analysis (system will analyze the scrapped raw data.)
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1.1   Vision Statement

OnSpot is an application that would help people to search items by image anytime, anywhere. It allows the users to input images into our multiplatform dynamic Web and Mobile Application and our system; comprising ML Algorithms compares the features of the image with maximum possible items from the local market and provides the links to online stores on which the item is available with lowest prices. This means discovery is more organic because it is based on what the user sees and intuitively responds to. If they love a coat, they don't have to navigate to coats category on each online shopping site and find that one, they just have to provide an image and shop it instantly. If user wants to purchase an item through image, our system will search online market and will give best lowest prices and top rating items from local online stores. This will include different Brands and we will scrap data from different websites of different brands. And by using ML Algorithms we will show the user, related products from the selected stores and brands according to which the user uploaded the pic. Providing location of brand outlet on map if user wants to shop by visiting the store. Give links to stores where the searched item is available on sale. User can save favorite items which he wishes to purchase later. If a user will search an image and he wouldn't find the related clothes from our database, then we will display him an option on demand. What does it mean? On Demand means when that user's searched product ever found in brands website, we will send him a push notification and an email regarding that product.

1.2 Related System Analysis/Literature Review

Daraz online shopping is gradually pacing up in Pakistan. Hundreds of retailers, from mobiles to clothing and home appliances are turning to the internet to start selling their goods online. With the increased use of clothing and growing internet penetration, the behavior of online shopping customers is changing quickly. **AliExpress** is a very successful platform where different users can buy and sell their products (clothes). It also provides different sales and offs on different categories of clothes. It provides new fashion and up trending designs of clothes.

Table 1: Related System Analysis with Targeted Project Solution.

Application Name	Weakness	Proposed Project Solution
• Daraz.pk	• Provide online shopping and selling of products.	• Our system will provide facility to decorate their wardrobes, searching clothes by picture and personality-based clothing.
• Aliexpress.com	• Provide online buy and sell of new and branded products.	• Our system will provide facility to decorate their wardrobes, searching clothes by picture and personality-based clothing.

1.3 Project Deliverables

Following are the **deliverables** of the **OnSpot:**

- Project proposal
- Scope and SRS (documents and presentation)
- SDS and 40% implementation (documents and presentation)
- 60% implementation (previous documents, 50% test document and presentation)
- 100% implementation and final report (documents and presentation)

1.4 System Limitations/Constraints

- The main limitation of our system is that a user will provide the image of the front view of any dress with clear background and underneath of that dress. Our system will find only those dresses which have clear front image of the dress.
- We will provide only 3-4 Pakistani Brands from where will fetch and show updated to the user.
- If a user will find the brand store using map, we will not show him brands location to the user.
- Internet will be required to use our system.

1.5 Tools and Technologies

My main set of technologies which will be used in constructing this system will be MERN stack. MERN includes MongoDB, Express JS, React JS and Node JS in the bundle. It is a complete package to make a web-based system and it being adopted by many organizations. In designing React Components, I will be using HTML, CSS and Bootstrap in order to design our front end. Express JS and Node JS will be serving as our backend framework. In terms of tools, our system requires MS Visual Studio Code as Code Editor, MongoDB as a database, MS PowerPoint and Word as a documentation tool and Google Chrome as Web browser.

Table 2: Tools and Technologies for the Targeted Project.

	Tools	Version	Rationale
	MS Visual Studio Code	2020	Editor
	MS Word	2016	Documentation
	MS Power Point	2016	Presentation
Tools And Technologies	Adobe XD	32.0.22	Mockups Creation
	Google Chrome	80.0.3987.149	Web Browser
	Technology	**Version**	**Rationale**
	HTML	V5	Markup Language
	CSS	V3	Styling language
	JavaScript	ECMAScript 2020	Programming language
	React JS	V16.13.1	Frontend JS framework
	Node JS	V14.5.0	Backend JS framework
	Bootstrap	4	Styling Framework
	MongoDB	4.2	Database
	Python	3.9.5	Programming Language

1.6 Relevance to Course Modules

We have tried to cover all the domains which lie in our field. Starting with web panel. The Web panel front end is developed with the help of React JS, HTML, CSS, and backend is developed with the help of Node JS, Express, and MongoDB. The User Interface of mobile application is developed with the help of Android Studio (Java).

Following is the list of courses relevant to our project:

1. **Database Systems:** The concepts learned in database systems were used in creating and using the database of the system.
2. **Software Engineering Concepts:** The concepts learned in software engineering concepts were used in documentation of the system. We used the course knowledge to elicit the requirements of our project and document it easily.

3. **Web Engineering:** The concepts of MERN Stack came handy as we used these concepts to develop the front end of the system.

Problem Definition

1.7 Problem Statement

Products that you see on social media, or clothes that your friend owns, or someone wearing something beautiful on the screen, that matters to you is a difficult task to find. People have pictures of their favorite dresses in their gallery, but don't know where to find them easily. Most people do not bother to go outside with an image of their favorite dress to find it from one store/brand to another. Even finding items online will cost too many hours of browsing site to site. There may be the possibility that one can miss the opportunity to buy the specific product that was also available on sale.

1.8 Problem Solution

To the above problem as I stated earlier, this is where technology comes into the field to provide a solution to this problem. OnSpot is an application that would help people to search items by image anytime, anywhere. It allows the users to input images into our multiplatform dynamic Web and Mobile Application and our system; comprising ML Algorithms compares the features of the image with maximum possible items from the local market and provides the links to online stores on which the item is available with lowest prices.

This means discovery is more organic because it is based on what the user sees and intuitively responds to. If they love a coat, they don't have to navigate to coats category on each online shopping site and find that one, they just have to provide an image and shop it instantly.

1.9 Objectives of the Proposed System

- The aim of the project is to launch a platform "OnSpot" that reflects the appearance and behavior of the products.
- OnSpot is an application that would help people to search items by image anytime, anywhere.
- It allows the users to input images into our multiplatform dynamic web Application.

1.10 Scope

User will provide an image of latest fashion trends he wants to follow, and our system will identify all products in image and will provide the recommendations according to the fashion sense adopted in the image. User will choose specific occasion/event from the provided options, and our system will check the latest trends followed in the region and will give suggestions what a user should wear. User will be recommended with cloths based on his/her wardrobe collection, analyzing his sense of dressing. If user wants to purchase an item through image, our system will

search online market and will give best lowest prices and top rating items from local online stores. This will include different Brands and we will scrap data from different websites of different brands. And by using ML Algorithms we will show the user, related products from the selected stores and brands according to which the user uploaded the pic. Providing location of brand outlet on map if user wants to shop by visiting the store. Give links to stores where the searched item is available on sale. User can save favorite items which he wishes to purchase later.

1.11 Modules

1.11.1 Module 1: User Profile Management:
• This module will handle all the features related to user registration, login, his dashboard, and his profile management.
• If user is currently not member on our system, he can quickly register himself by filling a form asking for basic credentials.
• If a user is already registered, he can access the features by entering his username and password.
• In his profile, he can change his password, edit his name, age etc.
• When the user will modify any data in the template, that customization will be modified in his node created by this module in the database.

1.11.2 Module 2: Data Scrapping:
In this module, we will use web scrapers which will scrape data from the selected brand websites which are Gul Ahmad, HSY and J. etc. Scrapers will store that data in our database. The Scrapped would include the title, price, image link etc.

1.11.3 Module 3: Image Analysis:

In this module, system will analyze the scrapped raw data. System will filter this raw data into a well formation. After that system will store this well-formed data into our data base. Then system will fetch the features of every clothe stored in our data base.

1.11.4 Module 4: User Data Pre-process:

In this module, when user will upload an image to find the related products on our system then system will preprocess that image. Preprocess means system will fetch the features of the clothe image like fabric, color, designs etc., uploaded by the user.

1.11.5 Module 5: Comparison of the Features/Patterns Recognition:

In this module, system will compare the features of both, the image uploaded by the user and images stored in our database. If the features or pattern of the user image matches to any of

the image's features or patterns, then we will show the user that images which would be related to the uploaded image, or it can be the exact product whom the user was searching for.

1.11.6 Module 6: Wishlist:

User will provide an image to our system then our system will provide related products to the user if he/her wishes to buy the product other than the desired product. He can add that product in the Wishlist where he can buy the products later whenever he wanted to buy.

1.11.7 Module 7: Recommendation System:

User will be recommended with clothes based on his/her wardrobe collection, analyzing his sense of dressing. User will provide an image to our system and our system will search related clothes from different brand stores and it will recommend users the related and similar clothes to the user.

1.11.8 Module 8: Providing Location of Brand Outlet:

If user wanted to buy the products itself except online shopping, then we will also provide the location of that specific brand that he wanted to visit itself.

1.11.9 Module 9: Chatbot and Help:

- Chat bot will be giving an instant replay of user Queries.
- Chat bot will also be providing information on Brands.
- Chat bot will be available 24/7.
- Chat bot will contain suggestions and frequently asked questions.
- User can also ask chat bot about OnSpot.
- Use can view guide about privacy and settings.
- Help and guidance for chatbot usage.
- Contact us and about us.
- In settings user can deactivate his account or enable or disable notifications.

2 Requirement Analysis

The Software requirements software SRS document will show how our application will work. It provides accurate and detailed information about requirements, designs implementation and use cases of our application. It contains all the functional and nonfunctional requirements related to our project and as it will be a web application (Admin panel), this document will help to understand core idea of this project.

2.1 User classes and characteristics

Users	Description
Admin	Admin has the biggest role in this web Application. Admin will control the user panel. He can add, remove and block the user based on the interaction of the user from our web Application. Admin will update the features of the web App time by time. He will also handle the bugs and issues that will during the runtime of the web application. If any user has any issue and he want to contact the admin he will be there to answer question and queries of the user.
User	A user can perform multiple functionalities at a time on this website. He will register yourself to our system to perform his purpose on our website. After on time registration user will direct login to our system. He will upload image on OnSpot to find the related clothes whom he was searching for. When he will find his desired product from our system, he can find the location of that store on the map but if the store lay in the radius of almost 10kms according to the location of the user. User will also view the other clothes that system will recommend the user to buy based on the sales on the particular brand stores. We also recommend the user to buy clothes from the particular brand. User can also take help, about us, setting of his profile and he can also contact the admin using chatbot, help, guidelines and about us etc.

2.2 Requirement Identifying Technique

Techniques we have used are;
- **Brainstorming** because this is a group project and we as a group brainstormed to understand the requirements so this was the appropriate technique.
- **Document Analysis** as we analyzed the scope document to understand requirements more precisely.
- **Observation** as we observed other system like this and then decided what our system actually requires.

2.2.1 Use Cases Diagram(s)

2.2.1.1 User:
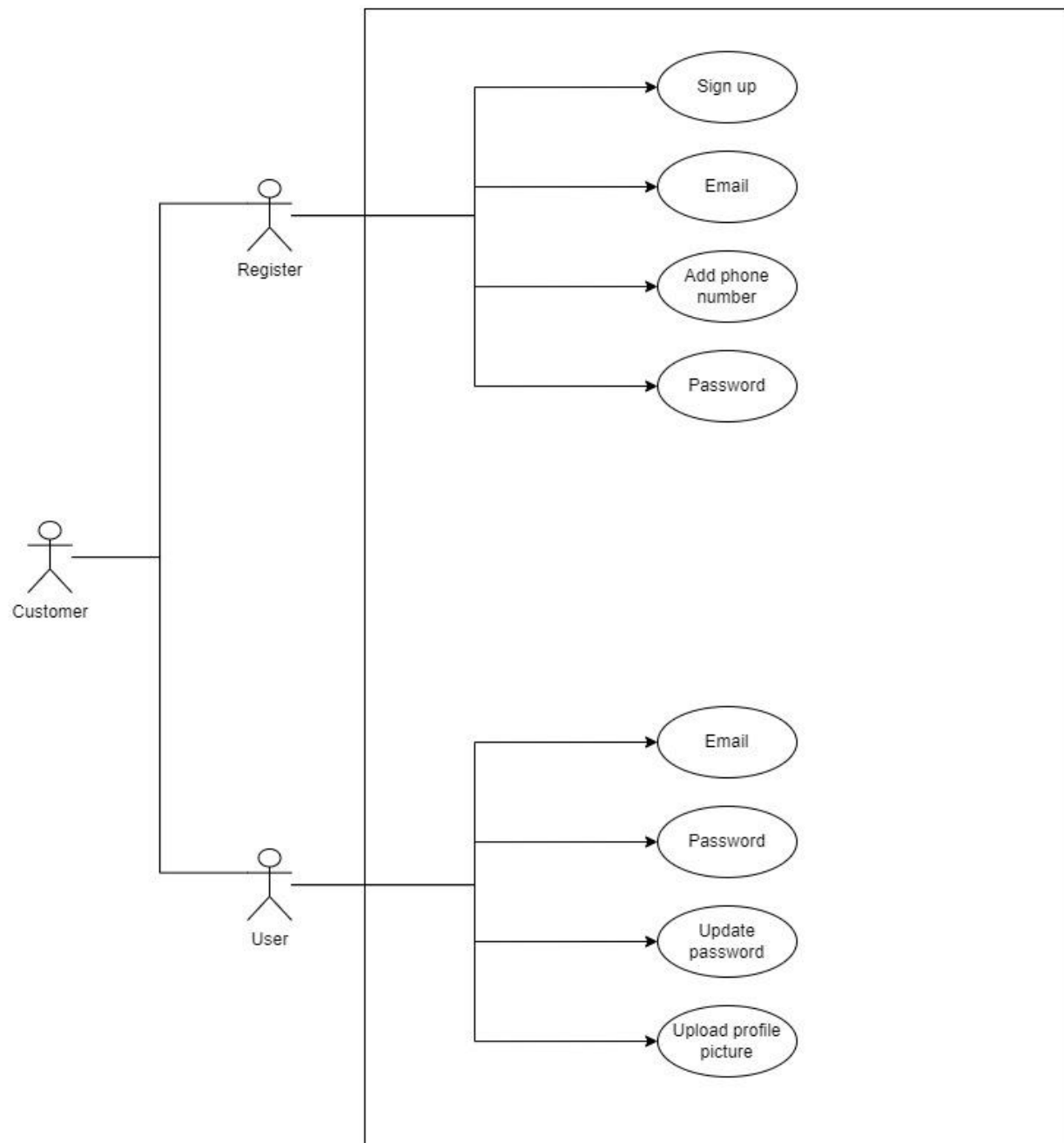
Figure 1: Use case Diagram for User

2.2.1.2 Admin:
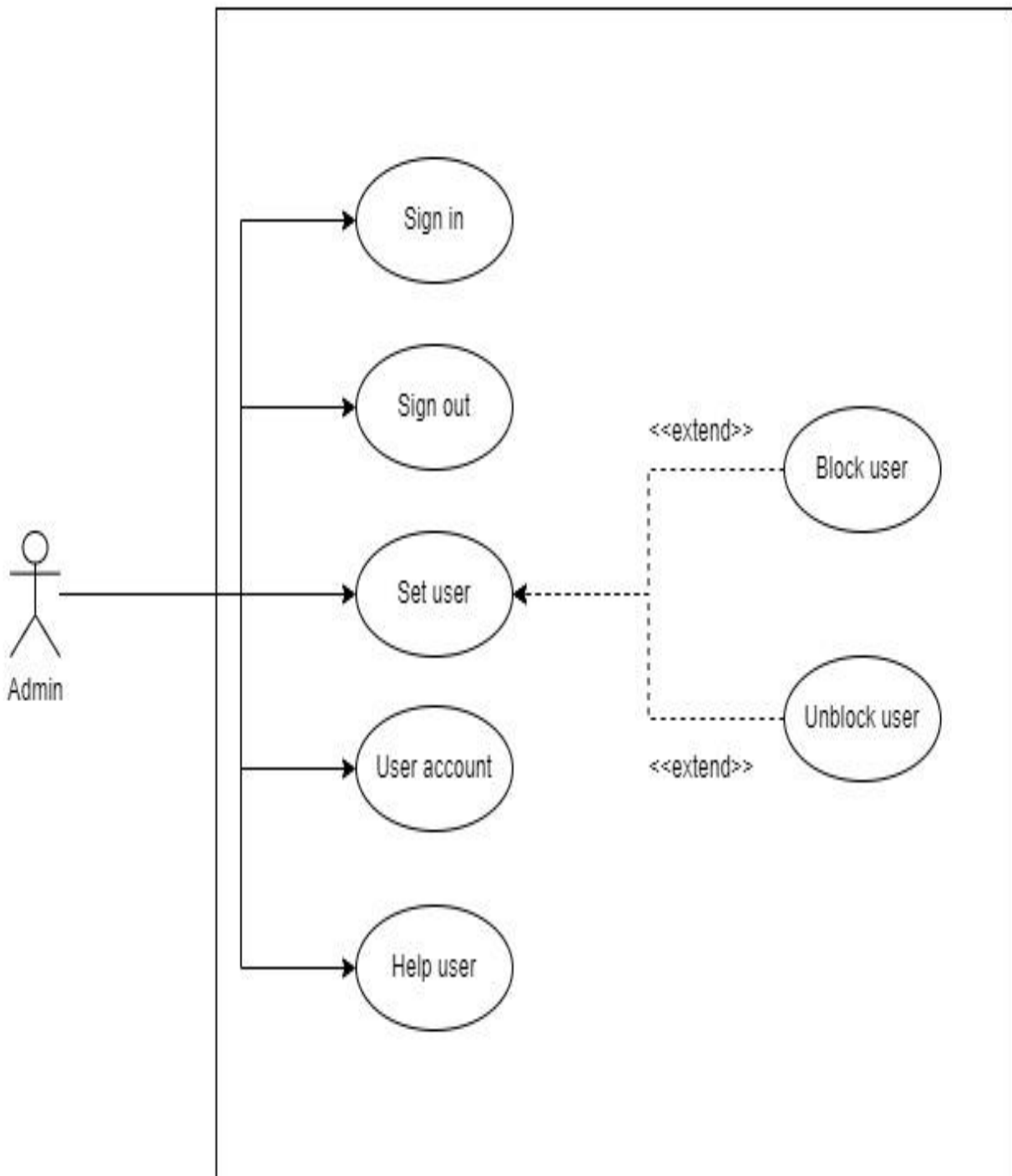
Figure 2: Use case Diagram for Admin

2.2.1.3   Image Search:
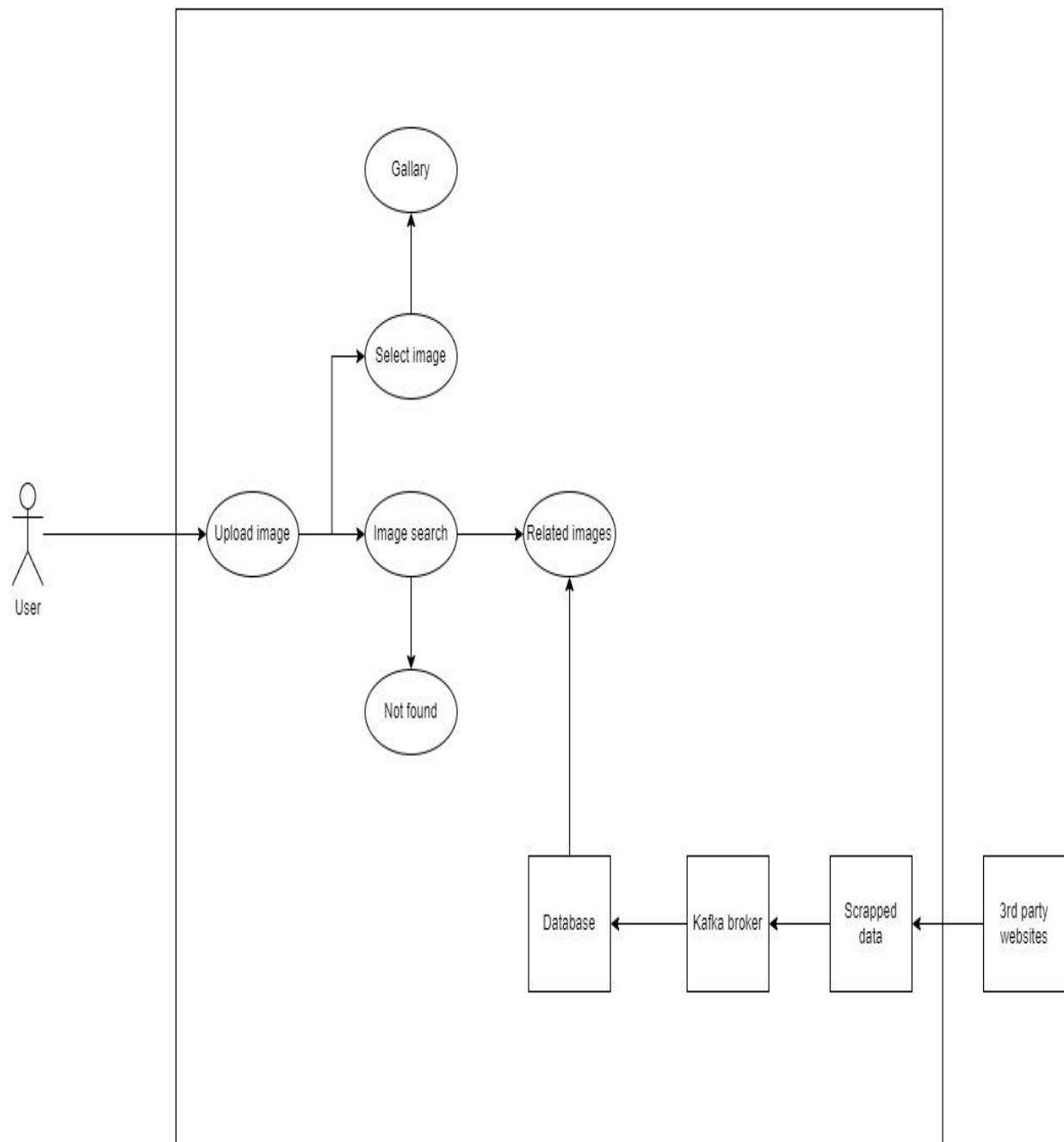
Figure 3: Use case Diagram of Image Search

2.2.1.4 Categories:
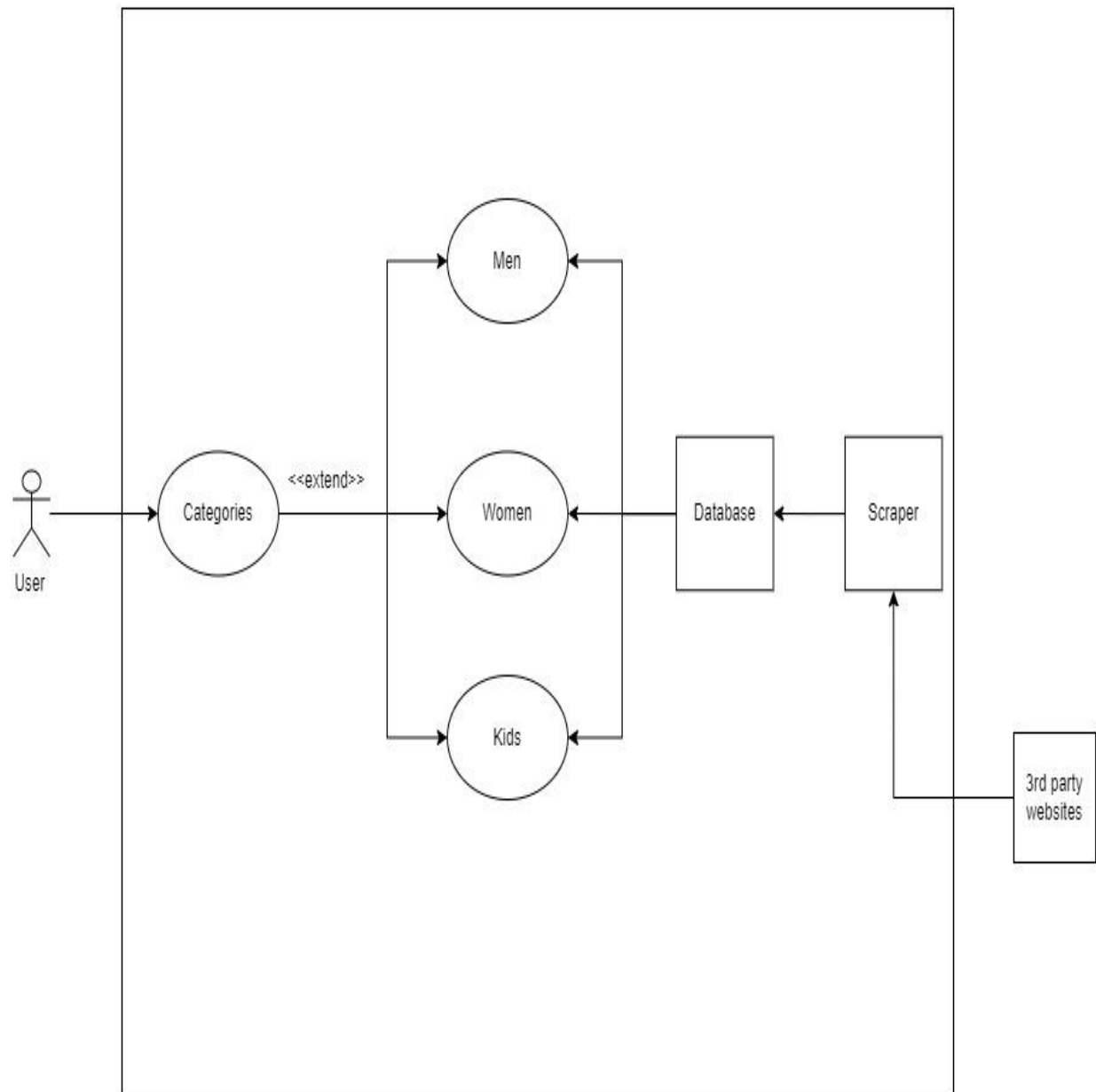
Figure 4: Use Case Diagram of Categories

2.2.1.5   *Chatbot:*
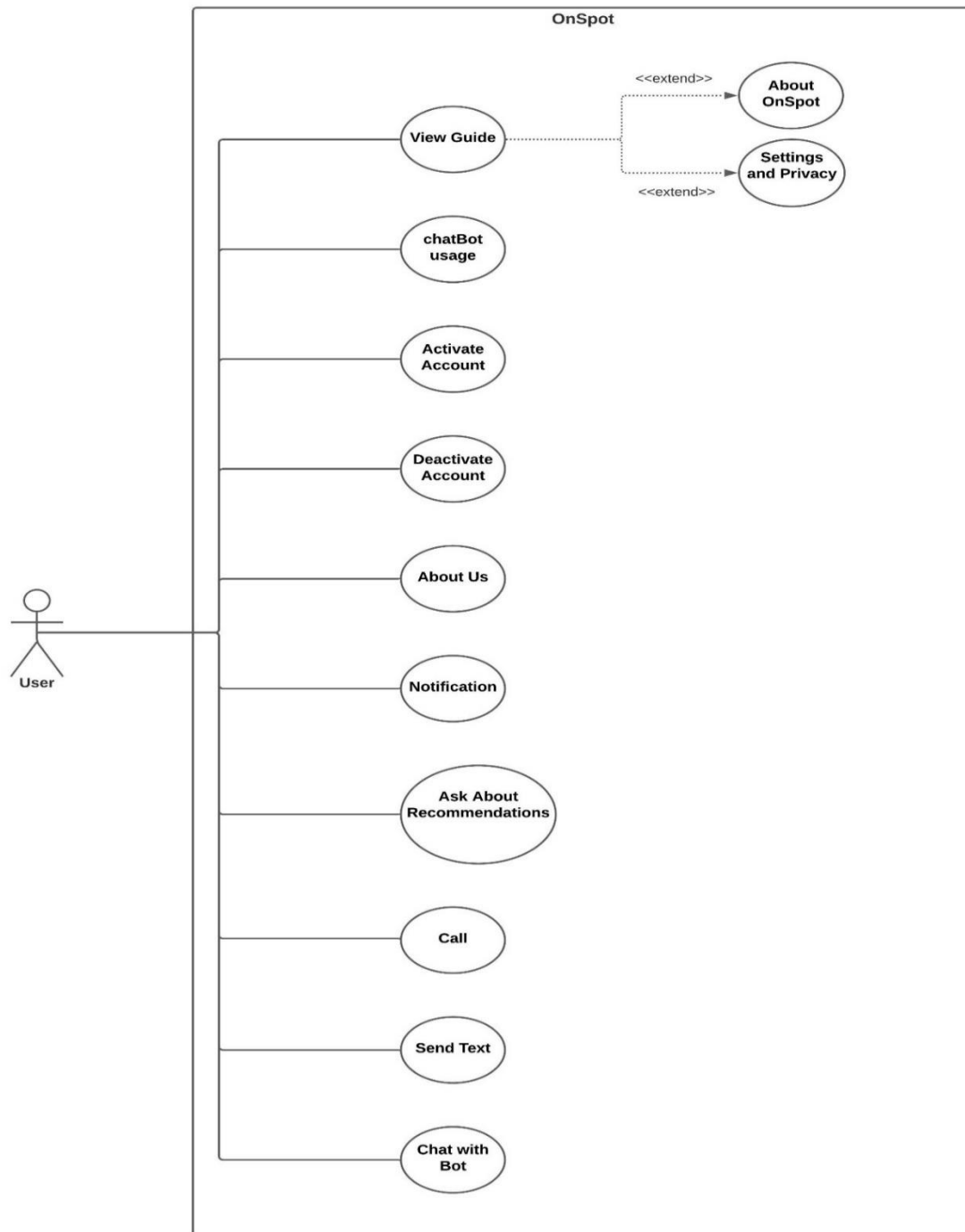
Figure 5: Us Case Diagram of Chatbot

2.2.2 Detailed Use Case

2.2.2.1 Module 1: User Profile Management:

Table 1: User sign up

Use Case ID:	UC-1.1
Use Case Name:	Sign up
Actors:	User
Description:	User can sign up.
Trigger:	Click on sign up button.
Level:	High
Preconditions:	1. Must have an internet connection. 2. Must have a valid username.
Normal Flow:	1. Click on the sign-up button. 2. Enter the details. 3. Click on sign-up.
Alternative Flows: [Alternative Flow 1 – Not in Network]	User can also sign up by using their social media accounts.
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If the username is not valid, a message **'invalid username'** will be shown on screen.
Postconditions:	User will be signed up and will get a notification on email.
Business Rules	N/A
Assumptions:	N/A

Table 2: Sign out

Use Case ID:	UC-1.2
Use Case Name:	Sign out
Actors:	user
Description:	User can sign out from application.
Trigger:	Click on the sign out option.
Level:	High
Preconditions:	1. Must have an internet connection 2. Must be logged in.
Normal Flow:	1. Sign-in into account. 2. Click on the menu

	3. Click on the sign out option
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	User will get sign out.
Business Rules	N/A
Assumptions:	N/A

Table 3: Verify Email

Use Case ID:	UC-1.3
Use Case Name:	Verify Email
Actors:	User
Description:	User can verify the email.
Trigger:	Click on the verify email button on verify notification email.
Level:	High
Preconditions:	1. Must have an internet connection. 2. Must have a valid email address.
Normal Flow:	1. Complete sign-up process 2. Go to your mail. 3. Click on the verify email button in email. 4. A message will appear 'email verified successfully'
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	Email will be verified. User will get a notification of it.
Business Rules	N/A
Assumptions:	N/A

Table 4: Forgot Password

Use Case ID:	UC-1.4
Use Case Name:	Forgot Password
Actors:	User
Description:	This UC is used to regain forgotten password.
Trigger:	Click on the forgot password button.
Level:	High

Preconditions:	1. Must have an internet connection. 2. Must have an active email that is registered with our system 3. Must know the email address
Normal Flow:	1. Click on the forgot password 2. Enter the email address 3. A forgot pass link will be sent to that email 4. Click on that link and reset your password.
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If the email is not valid a message will appear 'In Valid Email'
Postconditions:	User's pass will be reset, and user will get an email with detail.
Business Rules	N/A
Assumptions:	N/A

Table 5: Change Password

Use Case ID:	UC-1.5
Use Case Name:	Change password
Actors:	user
Description:	User can change their password.
Trigger:	Click on change password in settings.
Level:	Hight
Preconditions:	1. Must have an internet connection. 2. Must be logged in.
Normal Flow:	1. Sign-in to account 2. Click on setting and then change password 3. Enter the current pass and then enter the new pass 4. Enter again new pass to verify 5. Click on save button.
Alternative Flows: [Alternative Flow 1 – Not in Network]	User can also change the password by using forgot password option.
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If user forgot current pass a message will appear 'invalid pass'.
Postconditions:	Password is changed and an email will be sent to user.
Business Rules	N/A
Assumptions:	N/A

Table6: Change Profile Picture.

Use Case ID:	UC-1.6
Use Case Name:	Change Profile Picture
Actors:	user
Description:	User can change their profile picture.
Trigger:	Click on change profile picture button in setting.
Level:	High
Preconditions:	1. Must have an internet connection. 2. Must be logged in 3. There must be a picture to change
Normal Flow:	1. Click on the change profile picture button 2. Select an image from gallery 3. Click on upload 4. Click on save.
Alternative Flows: [Alternative Flow 1 – Not in Network]	User can also change profile picture using the camera.
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	Profile picture will be changed.
Business Rules	N/A
Assumptions:	N/A

Table 7: Search users

Use Case ID:	UC-1.7
Use Case Name:	Search user
Actors:	user
Description:	User can search products of clothing.
Trigger:	User want to search some products to buy from different brands websites
Level:	High
Normal Flow:	1.Click on the search button 2.Select an image from gallery 3.Click on upload
Postcondition	Search by user
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Business rule	N/A
Assumption	N/A

Table 8: User can view profile

Use Case ID:	UC-1.8
Use Case Name:	view profile
Actors:	User
Description:	User can view their profile.
Trigger:	Click on view profile button.
Level:	Medium
Preconditions:	1. Internet connection is necessary 2. Must be logged in
Normal Flow:	1. Signed in the account. 2. Click on the menu button 3. Click on view profile
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	User will see their profile
Business Rules	N/A
Assumptions:	N/A

Table 9: User can add phone number

Use Case ID:	UC-1.9
Use Case Name:	add phone number
Actors:	User
Description:	User can add a phone number in profile.
Trigger:	Click on add phone number.
Level:	Medium
Preconditions:	1. Must have an internet connection 2. Must be logged in
Normal Flow:	1. Sign-in the account 2. Click on setting and then privacy 3. Click on add number 4. Enter the phone number a verification code will be sent to that number 5. Enter the code in the field and click ok 6. Click save.
Alternative Flows:	User can also add number during sign-up process.

[Alternative Flow 1 – Not in Network]	
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If number is not valid or code is late a message will appear 'invalid phone number'
Postconditions:	Phone number will be added in profile and an email will be sent to user.
Business Rules	N/A
Assumptions:	N/A

Table 10: User can edit phone number

Use Case ID:	UC-1.10
Use Case Name:	edit phone number
Actors:	User
Description:	User can edit phone number
Trigger:	Click on edit phone number
Level:	High
Preconditions:	1. Must have an internet connection 2. Must be logged in 3. Current number must be active and new number also
Normal Flow:	1. Sign-in to account 2. Click on setting and privacy 3. Click on edit profile and enter the new number 4. A verification code will be sent to the old number put that code in the field and then enter the new number.
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If number is not valid or code is late a message will appear 'invalid phone number'
Postconditions:	Phone number is edited and a notification is sent to user email.
Business Rules	N/A
Assumptions:	N/A

2.2.2.2 Module 2: Admin Panel:

Table 1: Admin sign up

Use Case ID:	UC-2.1
Use Case Name:	Sign up
Actors:	Admin
Description:	Admin can sign up.
Trigger:	Click on sign up button.
Level:	High
Preconditions:	3. Must have an internet connection. 4. Must have a valid username.
Normal Flow:	4. Click on the sign-up button. 5. Enter the details. 6. Click on sign-up.
Alternative Flows: [Alternative Flow 1 – Not in Network]	Admin can also sign up by using their social media accounts.
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If the username is not valid, a message **'invalid username'** will be shown on screen.
Postconditions:	Admin will be signed up and will get a notification on email.
Business Rules	N/A
Assumptions:	N/A

Table 2: Sign out

Use Case ID:	UC-2.2
Use Case Name:	Sign out
Actors:	Admin
Description:	Admin can sign out from application.
Trigger:	Click on the sign out option.
Level:	High
Preconditions:	3. Must have an internet connection 4. Must be logged in.
Normal Flow:	4. Sign-in into account. 5. Click on the menu 6. Click on the sign out option
Alternative Flows: [Alternative	N/A

Flow 1 – Not in Network]	
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	Admin will get sign out.
Business Rules	N/A
Assumptions:	N/A

Table 3: Verify Email

Use Case ID:	UC-2.3
Use Case Name:	Verify Email
Actors:	Admin
Description:	Admin can verify the email.
Trigger:	Click on the verify email button on verify notification email.
Level:	High
Preconditions:	3. Must have an internet connection. 4. Must have a valid email address.
Normal Flow:	5. Complete sign-up process 6. Go to your mail. 7. Click on the verify email button in email. 8. A message will appear 'email verified successfully'
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	Email will be verified. User will get a notification of it.
Business Rules	N/A
Assumptions:	N/A

Table 4: Forgot Password

Use Case ID:	UC-2.4
Use Case Name:	Forgot Password
Actors:	Admin
Description:	This UC is used to regain forgotten password.
Trigger:	Click on the forgot password button.
Level:	High
Preconditions:	4. Must have an internet connection. 5. Must have an active email that is registered with our system 6. Must know the email address

Normal Flow:	5. Click on the forgot password 6. Enter the email address 7. A forgot pass link will be sent to that email 8. Click on that link and reset your password.
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If the email is not valid a message will appear 'In Valid Email'
Postconditions:	User's pass will be reset, and user will get an email with detail.
Business Rules	N/A
Assumptions:	N/A

Table 5: Change Password

Use Case ID:	UC-2.5
Use Case Name:	Change password
Actors:	Admin
Description:	Admin can change their password.
Trigger:	Click on change password in settings.
Level:	Hight
Preconditions:	3. Must have an internet connection. 4. Must be logged in.
Normal Flow:	6. Sign-in to account 7. Click on setting and then change password 8. Enter the current pass and then enter the new pass 9. Enter again new pass to verify 10. Click on save button.
Alternative Flows: [Alternative Flow 1 – Not in Network]	Admin can also change the password by using forgot password option.
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.** If user forgot current pass a message will appear 'invalid pass'.
Postconditions:	Password is changed and an email will be sent to user.
Business Rules	N/A
Assumptions:	N/A

Table 6: Change Profile Picture.

Use Case ID:	UC-2.6
Use Case Name:	Change Profile Picture
Actors:	user
Description:	Admin can change their profile picture.
Trigger:	Click on change profile picture button in setting.
Level:	High
Preconditions:	4. Must have an internet connection. 5. Must be logged in 6. There must be a picture to change
Normal Flow:	5. Click on the change profile picture button 6. Select an image from gallery 7. Click on upload 8. Click on save.
Alternative Flows: [Alternative Flow 1 – Not in Network]	Admin can also change profile picture using the camera.
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	Profile picture will be changed.
Business Rules	N/A
Assumptions:	N/A

Table 7: Search users

Use Case ID:	UC-2.7
Use Case Name:	Search user
Actors:	Admin
Description:	Admin can search user.
Trigger:	Admin want to search user
Level:	High
Normal Flow:	1.Click on the search button 2.Select an image from gallery 3.Click on upload
Postcondition	Search by user
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.**
Business rule	N/A
Assumption	N/A

Table 8: Admin can view profile

Use Case ID:	UC-2.8
Use Case Name:	view profile
Actors:	Admin
Description:	Admin can view their profile.
Trigger:	Click on view profile button.
Level:	Medium
Preconditions:	3. Internet connection is necessary 4. Must be logged in
Normal Flow:	4. Signed in the account. 5. Click on the menu button 6. Click on view profile
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.**
Postconditions:	User will see their profile
Business Rules	N/A
Assumptions:	N/A

Table 9: User can add phone number

Use Case ID:	UC-2.9
Use Case Name:	add phone number
Actors:	Admin
Description:	Admin can add a phone number in profile.
Trigger:	Click on add phone number.
Level:	Medium
Preconditions:	3. Must have an internet connection 4. Must be logged in
Normal Flow:	7. Sign-in the account 8. Click on setting and then privacy 9. Click on add number 10. Enter the phone number a verification code will be sent to that number 11. Enter the code in the field and click ok 12. Click save.
Alternative Flows:	Admin can also add number during sign-up process.

[Alternative Flow 1 – Not in Network]	
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.** If number is not valid or code is late a message will appear 'invalid phone number'
Postconditions:	Phone number will be added in profile and an email will be sent to Admin.
Business Rules	N/A
Assumptions:	N/A

Table 10: Admin can edit phone number

Use Case ID:	UC-2.10
Use Case Name:	edit phone number
Actors:	Admin
Description:	Admin can edit phone number
Trigger:	Click on edit phone number
Level:	High
Preconditions:	4. Must have an internet connection 5. Must be logged in 6. Current number must be active and new number also
Normal Flow:	5. Sign-in to account 6. Click on setting and privacy 7. Click on edit profile and enter the new number 8. A verification code will be sent to the old number put that code in the field and then enter the new number.
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.** If number is not valid or code is late a message will appear 'invalid phone number'
Postconditions:	Phone number is edited and a notification is sent to user email.
Business Rules	N/A
Assumptions:	N/A

Table 11: Admin can disable user account

Use Case ID:	UC-2.11
Use Case Name:	Admin can disable user account
Actors:	Admin
Description:	Admin would be able to disable user account
Trigger:	Click on disable user account

Level:	High
Preconditions:	7. Must have an internet connection 8. Must be logged in 9. Current number must be active and new number also
Normal Flow:	9. Sign-in to account 10. Click on setting and privacy 11. Click on disable account
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If Admin lost an internet connection a message will appear **'no internet connection'.** If number is not valid or code is late a message will appear 'invalid phone number'
Postconditions:	Admin disable user account
Business Rules	N/A
Assumptions:	N/A

2.2.2.3 Module 3: Image search:

Table 1: Image search

Use Case ID:	UC-3.1
Use Case Name:	Image search
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet**

	connection'. If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 2: Image search by category

Use Case ID:	UC-3.2
Use Case Name:	Image search by category
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 3: Image search by kids' category

Use Case ID:	UC-3.3
Use Case Name:	Image search by kids' category
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.

Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 4: Image search by men's category

Use Case ID:	UC-3.4
Use Case Name:	Image search by men's category
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 5: Image search by women's category

Use Case ID:	UC-3.5
Use Case Name:	Image search by women's category
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

2.2.2.4 Module 4: Search filter:

Table 1: Search filter

Use Case ID:	UC-4.1
Use Case Name:	Search filter
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.

Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 2: Search filter Name wise

Use Case ID:	UC-4.2
Use Case Name:	Search filter Name wise
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 3: Search filter Brand wise

Use Case ID:	UC-4.3
Use Case Name:	Search filter Brand wise
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 4: Search filter Price wise

Use Case ID:	UC-4.4
Use Case Name:	Search filter price wise
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative	N/A

Flow 1 – Not in Network]	
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 5: Search filter Category wise

Use Case ID:	UC-4.5
Use Case Name:	Search filter Category wise
Actors:	User
Description:	User will upload picture of the clothes and search for related products
Trigger:	By clicking the "image search" button to view related products
Level:	Heigh
Preconditions:	1.Must have an internet connection. 2.User must be logged in by his/her account.
Includes:	N/A
Normal Flow:	1. Log into user panel by user account. 2. Click view details of search products
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'.** If username and pass is not correct a message **'invalid user'** will be shown on screen.
Postconditions:	User will have details of sale and purchase of clothes products
Business Rules	N/A
Assumptions:	N/A

Table 6: User can search clothes by brands.

Use Case ID:	UC-4.6
Use Case Name:	Search by brands
Actors:	user
Description:	User can search clothes by brands
Trigger:	Click on search filter
Level:	Medium

Preconditions:	1. internet is needed
Includes:	N/A
Normal Flow:	1. Click on search filter 2. Select city
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	Clothes according brands will be shown
Business Rules	N/A
Assumptions:	N/A

2.2.2.5 Module 5: Chatbot

Table 1: Chat bot will first send greetings to the user

Use Case ID:	UC-5.1
Use Case Name:	Send Greetings
Actors:	Primary: System Secondary: User
Description:	Chat bot will send greetings like 'Welcome' to the user.
Trigger:	When users click on Chat Bot.
Level:	High
Preconditions:	1. Must have an internet connection
Normal Flow:	1. User enters home page. 2. Click on chat bot. 3. A message will appear 'welcome'
Includes	N/A
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A

Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	User will receive greetings.
Business Rules	N/A
Assumptions:	N/A

Table 2: User can send a text message to the bot

Use Case ID:	UC-5.2
Use Case Name:	Send Text Message
Actors:	Primary: User Secondary: System
Description:	User can also send text messages to system, which are respond able.
Trigger:	By simply typing on chat bot
Level:	High
Preconditions:	1. Must have an internet connection
Includes:	N/A
Normal Flow:	1. Click on the chat bot to open it 2. Click on typing area to type text 3. Chat bot will ten responses accordingly
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will response.
Business Rules	N/A
Assumptions:	N/A

Table 3: User can ask for details on the Cloths.

Use Case ID:	UC-5.3
Use Case Name:	Ask for Cloths information.
Actors:	Primary: user Secondary: system
Description:	User can ask in chat bot about cloths information.

Trigger:	By Selecting 'cloths information' one of options that comes on first screen
Level:	High
Preconditions:	1. Must have an internet connection
Normal Flow:	1. Enter in chat bot screen 2. Select an option 'cloths information'
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will then give info about cloths.
Business Rules	N/A
Assumptions:	N/A

Table 4: User can also choose frequently asked questions if it solves the query.

Use Case ID:	UC-5.4
Use Case Name:	Frequently asked questions
Actors:	user
Description:	User can also select frequently asked question from chat bot.
Trigger:	By selecting 'frequently ask question' from main screen
Level:	High
Preconditions:	1. Must have an internet connection 2. Chat bot must be opened
Normal Flow:	1. Open chat bot there will be some options 2. Select 'frequently ask question'
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will show questions.
Business Rules	N/A
Assumptions:	N/A

Table 5: Chat bot will also be suggesting extra information.

Use Case ID:	UC-5.5
Use Case Name:	Suggestions by chat bot
Actors:	Primary: chat bot Secondary: user
Description:	Chat bot will also be giving you suggestions about cloths.
Trigger:	By selecting 'suggesting' option from main screen
Level:	High
Preconditions:	1. Must have an internet connection
Includes:	N/A
Normal Flow:	1. Click on chat bot 2. Select 'suggestion' from main screen
Alternative Flows: **[Alternative Flow 1 – Not in Network]**	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will be giving suggestions.
Business Rules	N/A
Assumptions:	N/A

Table 6: Chat bot will also be providing information about clothes.

Use Case ID:	UC-5.6
Use Case Name:	Info about Clothes
Actors:	Primary: user Secondary: system
Description:	Chat bot can give information about clothes to user.
Trigger:	User can ask about clothes from chat bot
Level:	High
Preconditions:	1. Internet must be available
Includes:	
Normal Flow:	1. Open chat bot 2. Select 'about Clothes' option on chat bot screen

Alternative Flows: **[Alternative Flow 1 – Not in Network]**	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will then be showing about clothes
Business Rules	N/A
Assumptions:	N/A

Table 7: End conversation.

Use Case ID:	UC-5.7
Use Case Name:	End Conversation
Actors:	Primary: user Secondary: System
Description:	User can end conversation after having answers of queries.
Trigger:	When user enters 'good bye!' or close the chat bot
Level:	High
Preconditions:	1. Internet is needed 2. Chat bot must be open to close
Includes:	N/A
Normal Flow:	1. Open chat bot 2. Type 'good bye!'
Alternative Flows: **[Alternative Flow 1 – Not in Network]**	User can also end by clicking on close button
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	System will end the conversation/
Business Rules	N/A
Assumptions:	N/A

Table 8: User can view the guide about privacy and settings.

Use Case ID:	UC-5.8
Use Case Name:	Guide about privacy and settings
Actors:	user
Description:	User can view guide about privacy and settings.
Trigger:	Click on privacy and setting guide
Level:	Low
Preconditions:	1. Must have an internet access
Includes:	
Normal Flow:	1. Click on guide from main menu 2. Click on privacy and setting guide
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	N/A
Business Rules	N/A
Assumptions:	N/A

Table 9: User can view demo videos for functionality.

Use Case ID:	UC-5.9
Use Case Name:	Demo video of functionality
Actors:	user
Description:	User can watch a demo video how all of functions works
Trigger:	Click on demo
Level:	Low
Preconditions:	1. Internet is need to available
Includes:	N/A
Normal Flow:	1. Click on guide from main menu 2. Select demo video
Alternative Flows:	N/A

[Alternative Flow 1 – Not in Network]	
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	N/A
Business Rules	N/A
Assumptions:	N/A

Table10: chatbot usage

Use Case ID:	UC-5.10
Use Case Name:	Guide for chat bot usage
Actors:	user
Description:	User can also view guide foe chat bot usage
Trigger:	Click on chat bot guide
Level:	Low
Preconditions:	1. Internet is needed
Includes:	N/A
Normal Flow:	1. Click on the guide option from menu 2. Click on chat bot guide
Alternative Flows: **[Alternative Flow 1 – Not in Network]**	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	Chat bot usage guide will be shown on screen
Business Rules	N/A
Assumptions:	N/A

Table 11: User can contact us.

Use Case ID:	UC-5.11
Use Case Name:	Contact us
Actors:	User
Description:	User can easily contact us (admin)
Trigger:	Click on contact us

Level:	Low
Preconditions:	1. Internet is needed
Includes:	N/A
Normal Flow:	1. Click on Contact us option from menu 4. Click on Submit query
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**
Postconditions:	A contact us form will open.
Business Rules	N/A
Assumptions:	N/A

Table 12: About us.

Use Case ID:	UC-5.12
Use Case Name:	About us
Actors:	Users
Description:	User can view all the details about OnSpot.
Trigger:	Click on About us
Level:	Low
Preconditions:	1. Internet is needed
Includes:	N/A
Normal Flow:	1. Click on About us option from menu
Alternative Flows: [Alternative Flow 1 – Not in Network]	N/A
Exceptions:	If user lost an internet connection a message will appear **'no internet connection'**

Postconditions:	About us page will be opened
Business Rules	N/A
Assumptions:	N/A

2.3 Functional Requirements

2.3.1 Module1: User Profile management

Table 1: Description of FR-1: Login

Identifier	FR-3.3.1.1
Title	Login
Requirement	System shall allow admin and customer to login
Source	Admin and Customer
Rationale	Admin can enter into admin panel and customer can buy products.
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 2: Description of FR-2: Username

Identifier	FR-3.3.1.2
Title	Username
Requirement	Valid username is required
Source	User

Rationale	Login and signup purpose
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 3: Description of FR-3: Password

Identifier	FR-3.3.1.3
Title	Password
Requirement	Valid password is required
Source	User
Rationale	Login and signup purpose
Business Rule (if required)	N/A
Dependencies	Depends on valid username entered (3.3.1.3)
Priority	High

Table 4: Description of FR-4: Confirm Password

Identifier	FR-3.3.1.4
Title	Confirm Password
Requirement	System will require confirming the password from user.
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 5: Description of FR-5: User Address

Identifier	FR-3.3.1.5
Title	User Address
Requirement	Valid Address is required for creating an account.
Source	User

Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	NA
Priority	High

Table 6: Description of FR-6: Contact number

Identifier	FR-3.3.1.6
Title	Contact number
Requirement	Valid phone number is required for creating an account
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	NA
Priority	High

Table 7: Description of FR-7: Remember Password

Identifier	FR-3.3.1.7
Title	Remember Password
Requirement	System will require remembering the password from user.
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 8: Description of FR-8: Change Password

Identifier	FR-3.3.1.8
Title	Change Password

Requirement	System will require to change the password from user.
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 9: Description of FR-9: Forgot Password

Identifier	FR-3.3.1.9
Title	Forgot Password
Requirement	System will send a new password to replace the other one
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 10: Description of FR-10: Sign in using Email Address

Identifier	FR-3.3.1.10
Title	Email Address
Requirement	System will require email address of user for signup.
Source	User
Rationale	Login and Signup purpose
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 11: Description of FR-11: Verification by Email

Identifier	FR-3.3.1.11
Title	Verification by Email
Requirement	System will require email address of user for sign in..
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on Email ID provision (3.3.1.10)
Priority	High

Table 12: Description of FR-13: Verification code

Identifier	FR-3.3.1.12
Title	Verification code
Requirement	Application will send a verification code to the given email ID; the user should enter that code to proceed.
Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on Email ID provision (3.3.1.10)
Priority	High

Table 13: Description of FR-15: Username

Identifier	FR-3.3.1.13
Title	Username
Requirement	Valid username is required for Edit Username
Source	User
Rationale	Changing username
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 14: Description of FR-16: Password

Identifier	FR-3.3.1.14
Title	Password
Requirement	Valid password is required for Edit password
Source	User
Rationale	Changing password
Business Rule (if required)	N/A
Dependencies	Depends on valid username entered (3.3.1.3)
Priority	High

2.3.2 Module2: Admin Panel

Table 1: Description of FR-1: Login

Identifier	FR-3.3.2.1
Title	Login
Requirement	System shall allow admin and customer to login
Source	Admin and Customer
Rationale	Admin can enter into admin panel and customer can buy products.
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 2: Description of FR-2: Name

Identifier	FR-3.3.2.2
Title	name
Requirement	Valid name is required
Source	Admin
Rationale	Login and signup purpose
Business Rule	N/A

(if required)	
Dependencies	N/A
Priority	High

Table 3: Description of FR-3: Password

Identifier	FR-3.3.2.3
Title	Password
Requirement	Valid password is required
Source	Admin
Rationale	Login and signup purpose
Business Rule (if required)	N/A
Dependencies	Depends on valid username entered (3.3.1.3)
Priority	High

Table 4: Description of FR-4: Confirm Password

Identifier	FR-3.3.2.4
Title	Confirm Password
Requirement	System will require confirming the password from user.
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 5: Description of FR-5: Admin Address

Identifier	FR-3.3.2.5
Title	Admin Address
Requirement	Valid Address is required for creating an account.
Source	Admin
Rationale	Signup Credentials

Business Rule (if required)	N/A
Dependencies	NA
Priority	High

Table 6: Description of FR-6: Contact number

Identifier	FR-3.3.2.6
Title	Contact number
Requirement	Valid phone number is required for creating an account
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	NA
Priority	High

Table 7: Description of FR-7: Remember Password

Identifier	FR-3.3.2.7
Title	Remember Password
Requirement	System will require remembering the password from admin.
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 8: Description of FR-8: Change Password

Identifier	FR-3.3.2.8
Title	Change Password
Requirement	System will require to change the password from user.

Source	User
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 9: Description of FR-9: Forgot Password

Identifier	FR-3.3.2.9
Title	Forgot Password
Requirement	System will send a new password to replace the other one
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on password entered before (3.3.1.3)
Priority	High

Table 10: Description of FR-10: Sign in using Email Address

Identifier	FR-3.3.2.10
Title	Email Address
Requirement	System will require email address of admin for signup.
Source	Admin
Rationale	Login and Signup purpose
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 11: Description of FR-11: Verification by Email

Identifier	FR-3.3.2.11
Title	Verification by Email
Requirement	System will require email address of Admin for sign in..
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on Email ID provision (3.3.1.13)
Priority	High

Table 12: Description of FR-12: Verification code

Identifier	FR-3.3.2.12
Title	Verification code
Requirement	Application will send a verification code to the given email ID; the admin should enter that code to proceed.
Source	Admin
Rationale	Signup Credentials
Business Rule (if required)	N/A
Dependencies	Depends on Email ID provision (3.3.1.13)
Priority	High

Table 13: Description of FR-13: Name

Identifier	FR-3.3.2.13
Title	Admin name
Requirement	Valid admin name is required for Edit admin name
Source	Admin
Rationale	Changing name
Business Rule (if required)	N/A
Dependencies	N/A
Priority	High

Table 14: Description of FR-14: Password

Identifier	FR-3.3.2.14
Title	Password
Requirement	Valid password is required for Edit password
Source	Admin
Rationale	Changing password
Business Rule (if required)	N/A
Dependencies	Depends on valid username entered (3.3.1.15)
Priority	High

2.3.3 Module3: Image Search

Table 1: Description of FR-1 Search to compare

Identifier	FR-3.3.3.1
Title	Search to compare
Requirement	Click to "search" button to compare images
Source	user
Rationale	
Business Rule (if required)	N/A
Dependencies	Exist in database
Priority	High

Table 2: Description of FR-2 Image search

Identifier	FR-3.3.3.2
Title	Image search
Requirement	1.Select image to upload. 2.Click to "search image" button.
Source	User
Dependencies	Images exist in database for search

Rationale	User should search image for buy the clothes from different brands
Business Rule (if required)	N/A
Priority	High

Table 3: Description of FR-3 Image links

Identifier	FR-3.3.3.3
Title	Image links
Requirement	Click to "image link" for search images in different brands websites
Source	admin
Rationale	Links of Websites brands
Business Rule (if required)	N/A
Dependencies	Image details should match and Valid image URL
Priority	High

Table 4: Description of FR-4 Brands websites links

Identifier	FR-3.3.3.4
Title	Brands websites links
Requirement	Click to "Brands websites links" for search in different brands websites
Source	admin
Rationale	Links of Websites brands
Business Rule (if required)	N/A
Dependencies	Valid image URL
Priority	High

Table 5: Description of FR-5 image select

Identifier	FR-3.3.3.5
Title	Image selects

Requirement	Click to "select image" button from gallery
Source	user
Rationale	Links of Websites brands
Business Rule (if required)	N/A
Dependencies	Valid image format
Priority	High

2.3.4   Module 4: Categories

Table 1: Description of FR-1 Party wear

Identifier	FR-3.3.4.1
Title	Party wear
Requirement	Click the "party wear" button to show party wear dresses
Source	User
Rationale	Products party wear recommendation
Business Rule (if required)	N/A
Dependencies	If party wear clothes available or not
Priority	Medium

Table 2: Description of FR-2 Casual wear

Identifier	FR-3.3.4.2
Title	Casual wear
Requirement	Click the "casual" button to show casual wear dresses
Source	User
Rationale	Products casual wear recommendation
Business Rule (if required)	N/A
Dependencies	If casual wear clothes available or not
Priority	Medium

Table 3: Description of FR-3 Formal wear

Identifier	FR-3.3.4.3
Title	Formal wear
Requirement	Click the "Formal wear" button to show formal wear dresses
Source	User
Rationale	Products formal wear recommendation
Business Rule (if required)	N/A
Dependencies	Products formal wear clothes available or not
Priority	Medium

Table 4: Description of FR-4 Bride wear

Identifier	FR-3.3.4.4
Title	Bride wear
Requirement	Click the "Bride wear" button to show Bride wear dresses
Source	User
Rationale	Products bride wear recommendation
Business Rule (if required)	N/A
Dependencies	Products bride wear clothes available or not
Priority	Medium

Table 5: Description of FR-5 Shalwar Kameez

Identifier	FR-3.3.4.5
Title	Shalwar kameez
Requirement	Click on the "Shalwar kameez" button to show shalwar kameez dresses
Source	User
Rationale	Products shalwar kameez recommendation
Business Rule (if required)	N/A
Dependencies	Products Shalwar kameez clothes available or not
Priority	Medium

Table 6: Description of FR-6 Kurta

Identifier	FR-3.3.4.6
Title	Kurta
Requirement	Click the "Kurta" button to show Kurta dresses
Source	User
Rationale	Products Kurta dresses recommendation
Business Rule (if required)	N/A
Dependencies	Products kurta clothes available or not
Priority	Medium

Table 7: Description of FR-7 Trousers

Identifier	FR-3.3.4.7
Title	Trousers wear
Requirement	Click the "Trouser wear" button to show Trouser wear dresses
Source	User
Rationale	Products Trousers wear recommendation
Business Rule (if required)	N/A
Dependencies	Products Trouser wear clothes available or not
Priority	Medium

Table 8: Description of FR-8 Sports wear

Identifier	FR-3.3.4.8
Title	Sports wear
Requirement	Click the "Sportswear" button to show Sports wear dresses
Source	User
Rationale	Products sportswear recommendation
Business Rule (if required)	N/A
Dependencies	Products Sports wear clothes available or not
Priority	Medium

Table 9: Description of FR-9 Coats

Identifier	FR-3.3.4.9
Title	Coats
Requirement	Click the "Coats" button to show Coats.
Source	User
Rationale	Products of Coats recommendation
Business Rule (if required)	N/A
Dependencies	Products of Coats available or not
Priority	Medium

Table 10: Description of FR-10 Waist Coats

Identifier	FR-3.3.4.10
Title	Waist Coats
Requirement	Click the "Waist Coats" button to show Waist Coats
Source	User
Rationale	Products of Waist Coats recommendation
Business Rule (if required)	N/A
Dependencies	Products of Waist Coats available or not
Priority	Medium

2.3.5 Module 5: Chatbot, Help and Feedback:

Table 1: Description of FR-1 Answer FAQ'S

Identifier	FR-3.3.5.1
Title	Answer FAQ'S
Requirement	System will answer the Customer query.
Source	Customer
Rationale	Customer asks a FAQ.
Business Rule	N/A

(if required)	
Dependencies	None
Priority	high

Table 2: Description of FR-2: Drop Email

Identifier	FR-3.3.5.2
Title	Drop Email
Requirement	System will send customer query to the administration.
Source	Customer
Rationale	N/A
Business Rule (if required)	N/A
Dependencies	None
Priority	high

Table 3: Description of FR-3 Click on View chatbots usage

Identifier	FR-3.3.5.3
Title	Click on View chatbots usage
Requirement	User will be able to click on "View Guide about chatbots usage" from the help menu in their profile.
Source	Team member.
Rationale	To view the guide for usage of the chatbots
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

Table 4: Description of FR-4 Help

Identifier	FR-3.3.5.4
Title	Click on "Help"
Requirement	User will be able to click on "Help" from the help menu in their profile.
Source	Team member.
Rationale	To view the guide for usage of the chatbots
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

Table 5: Description of FR-5 Feedback

Identifier	FR-3.3.5.5
Title	Click on "Feedback"
Requirement	User will be able to click on "Feedback" give feedback of platform.
Source	Team member.
Rationale	To view the guide for usage of the chatbots
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

Table 6: Description of FR-6 Rating

Identifier	FR-3.3.5.6
Title	Click on "Rating"
Requirement	User will be able to click on "Rating" and give rating.
Source	Team member.
Rationale	To view the guide for usage of the chatbots
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

2.3.6 Module 6: Location of Brand Outlet:

Table 1: Description of FR-1 Location

Identifier	FR-3.3.6.1
Title	Click on "Brand Location"
Requirement	User will be able to click on "Brand Location" and view outlet.
Source	User.
Rationale	To view the location of specific Brand.
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

Table 2: Description of FR-2 Search Location

Identifier	FR-3.3.6.2
Title	Write the name of specific Brand.
Requirement	User will be able to search the location and view map.
Source	User.
Rationale	To search the location of specific Brand.
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

Table 3: Description of FR-3 Brand Location Link

Identifier	FR-3.3.6.3
Title	Click the link given of the searched Brand.
Requirement	User will be able to click the link given of the brand and directions will be provided to the user in the new tab.
Source	User.
Rationale	To navigate the location of specific Brand.
Business Rule (if required)	N/A.
Dependencies	N/A.
Priority	High

2.4 Non-Functional Requirements

Following are the Non-Functional Requirements for OnSpot.

2.4.1 Reliability

2.4.1.1 Scrapper Reliability:
The rate of failure occurrence per search query will be 1/100: Failure means system failed to fetch any results with any query applied. System must be restarted to correct the failure.

2.4.1.2 Updating roll back:
Updating an ad will roll back all updated details when an update fails to commit.

2.4.1.3 Fetched Results accuracy:
The accuracy of the fetched results for the scrapped data is at least 90%.

2.4.2 Usability

2.4.2.1 Interactive design:
The interactive and simple design will make it easy to use and will be soothing for eyes. The system will be made as minimalist as possible so it is easy for users to understand and learn

2.4.2.2 Use of font and colors:
The font and colors combination of the website will be relaxing for eyes.

2.4.3 Performance

2.4.3.1 Scrapping website:
On the peak load of 500 users, system will scrap one website in maximum 60 seconds against one query.

2.4.3.2 Chat bot query response time:

Chatbot must respond to the queries of after 5 seconds of user typing their query and pressing enter.

2.4.3.3 Node.js:

The system uses Node.js for building the server and handling most operations. Node.js is fast and efficient in multitasking, doesn't weigh down the server, and works on Chrome V8, the fastest JavaScript engine available.
- Response time navigation: 1-2 seconds based on internet connection
- Uploading time: 3-8 seconds based on internet connection

2.4.4 Security

Our system provides high level security so all the customer's and admin's data will be secured and it will be difficult to hack the system. Also, every customer data will be private and all the accounts will be protected with a strong password

2.4.4.1 Controlled Access:

Databases also allows only controlled access so that to maintain a privacy of the user and provide them security and integrity of data.

2.4.4.2 SQL injection prevention:

SQL injection is more common these days, that's why we are using Mongo dB isn't vulnerable to SQL injections.

2.4.4.3 Password hashing:

The system will perform hashing of password to protect against unauthorized access.

2.5 External Interface Requirements

This section provides information to ensure that **OnSpot** will communicate properly with users and with external hardware or software elements.

2.5.1 User Interfaces Requirements

Every application should follow some standard guidelines so that the user experience can be as smooth as possible, just like that **OnSpot** focuses on the ease of the user by providing them with

friendly and easy to navigate UI in which they do not feel like that they are stuck at using some feature.

Few of the guidelines in this regard that needs to be followed are:

- The interface should be intuitive.
- The icons used should be self-explanatory that by looking at the icon the user can judge what they would do, so standard icons that are used in the other application should be used.
- The font size, color, and family should not be too overwhelming.
- The UI should be consistent throughout the application.
- The color scheme should match the dark theme of the application.
- The user must feel in control of the environment around.

OnSpot comes with a built-in dark mode so to cause less strain on the user's eyes, the future updates may include the light mode as well, and right now our aim is to fit with the trends of the moving world that is going towards the dark mode of the application to preserve the eyes of the users.

2.5.2 Software interfaces

The Application communicates with the node server. The node server then communicates with the mongo DB for reading and writing data.

- The application will also be using Google location API.

2.5.3 Hardware interfaces

This is an online application so all hardware should connect to the internet modem.

2.5.4 Communications interfaces

Application will use the HTTP protocol to communicate with the node server.

3 Design and Architecture

3.1 Architectural Design

We will be using 3-tier architecture to design our website application. In tier 1, we are using React JS application through which user will be interacting with the system for the front end (client) with an effective way. In Tier 2 we are using Node JS server which will handle the requests from React front end application and respond with corresponding JSON (JavaScript Object Notation) data, which comes in our backend (server). In the third tier which is our database layer, we will be using MongoDB as our database service from which our server will interact to store and retrieve data. This how all our architectural design will work.
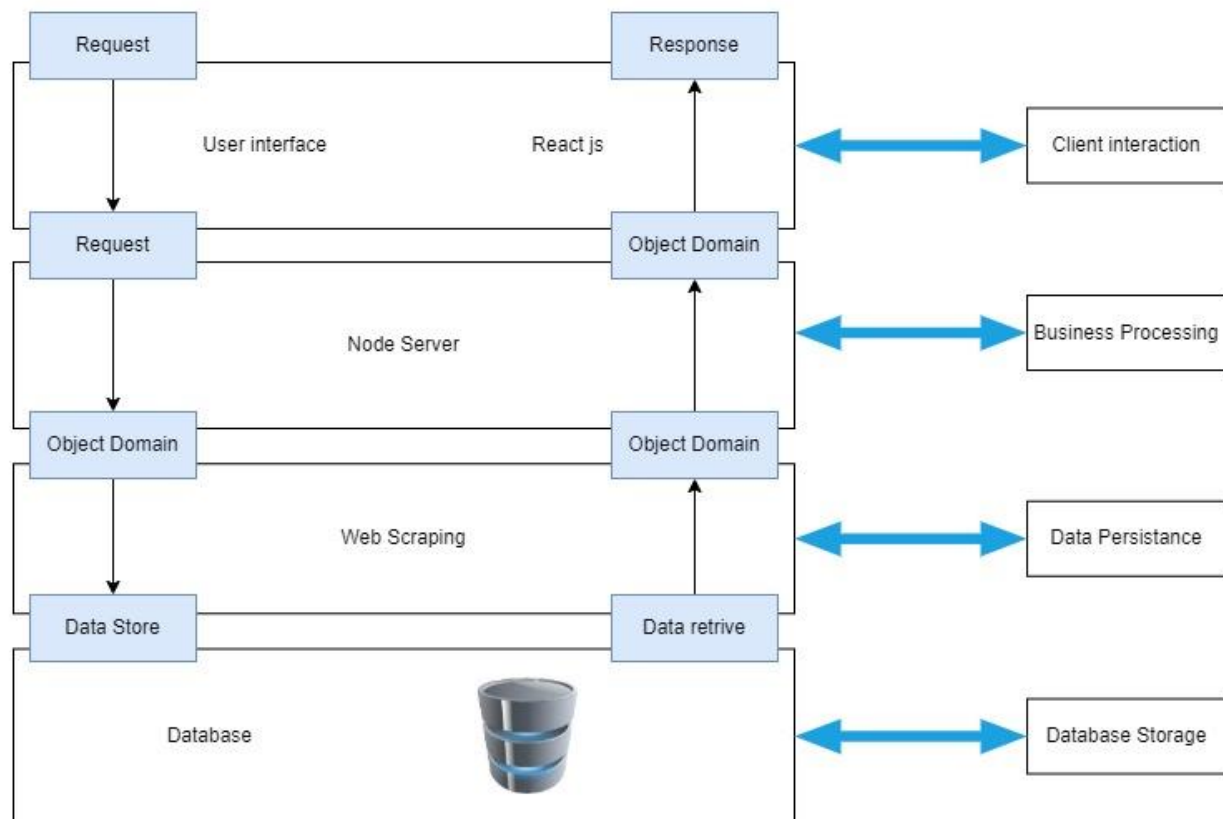
Figure 6:Architectural Diagram of OnSpot

3.2 Design Models

3.2.1 Activity Diagram
There are some activity diagrams representing major process of OnSpot in module wise

3.2.1.1 Login
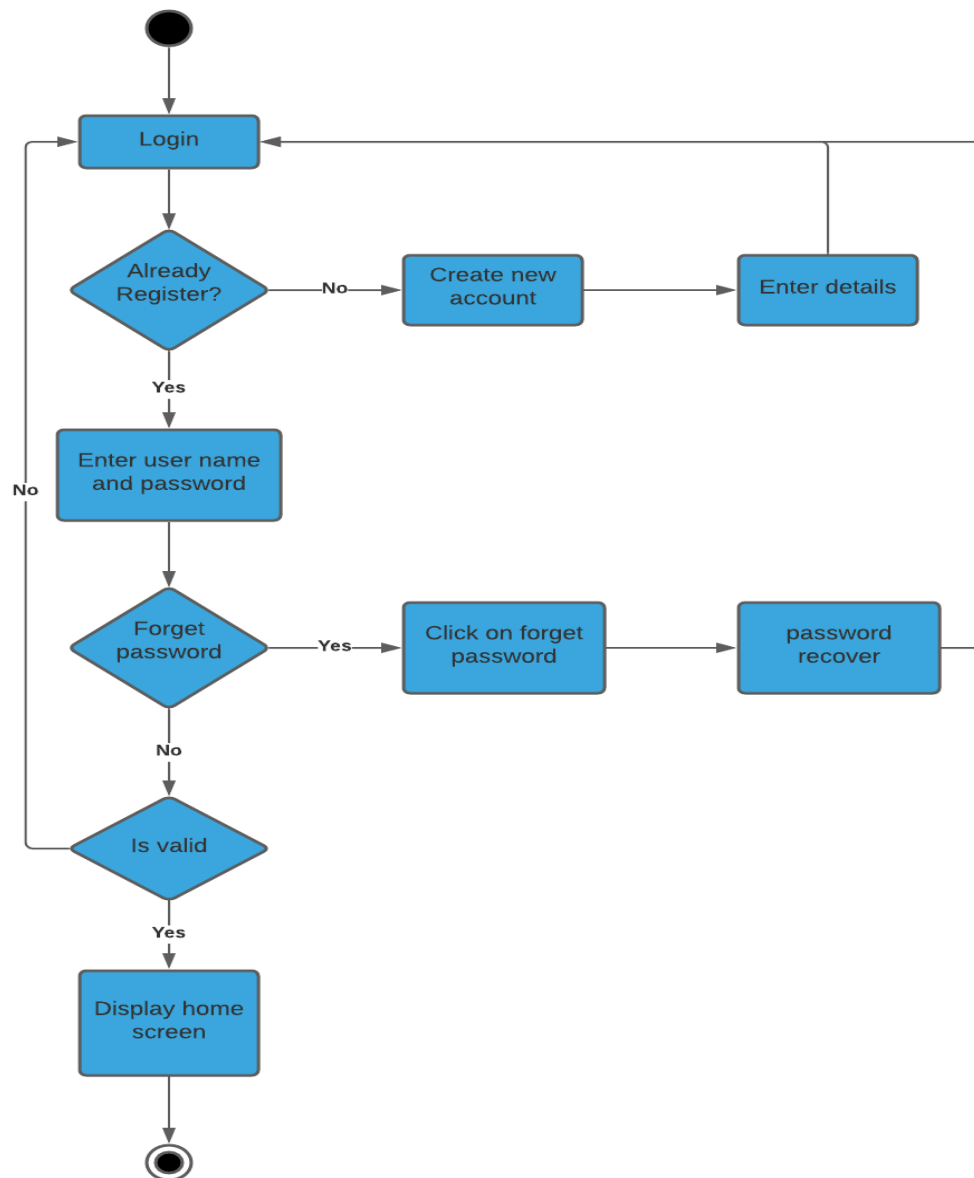
Figure 7:Activity Diagram of Login

3.2.1.2 User
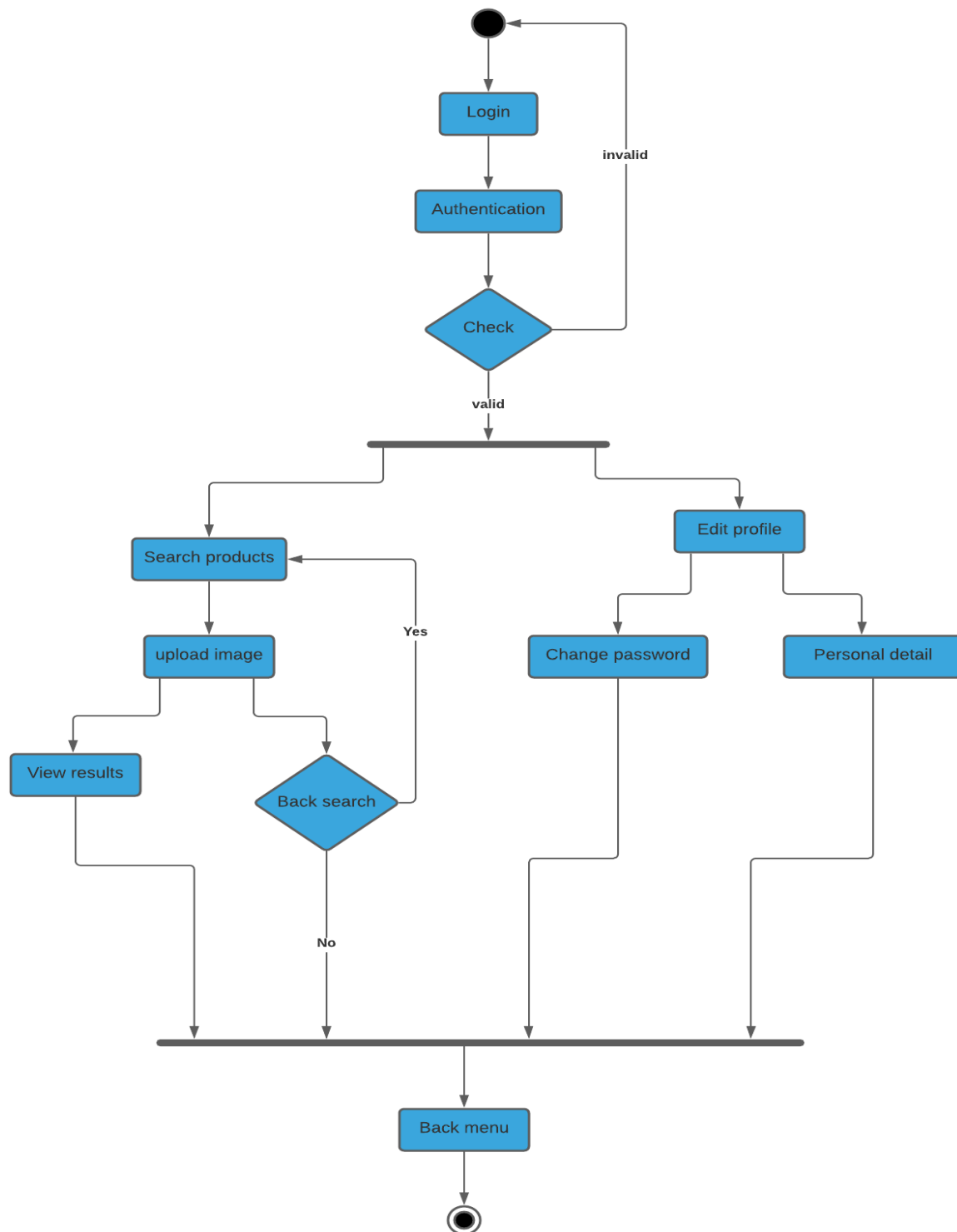
Figure 8:Activity Diagram of User

3.2.1.3 Admin
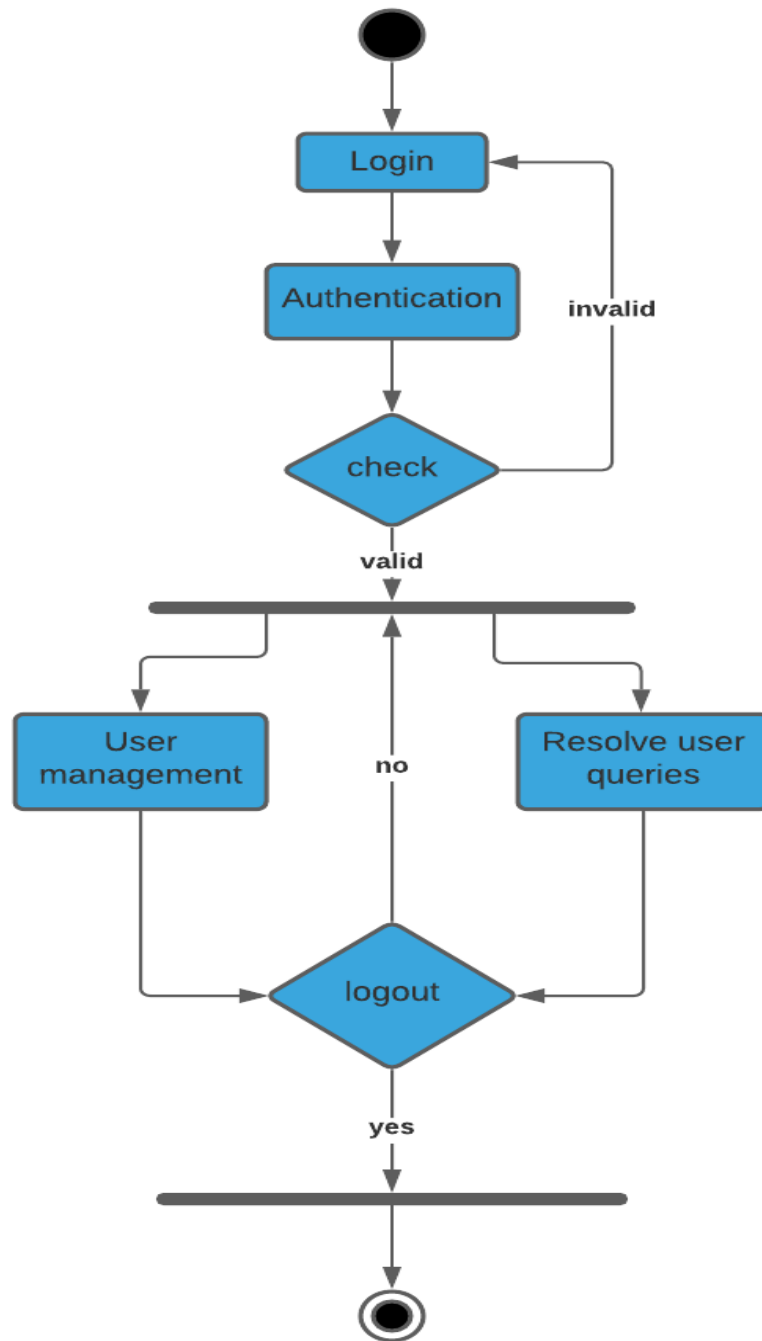
Figure 9:Activity Diagram of Admin

3.2.1.4 Web Scraping
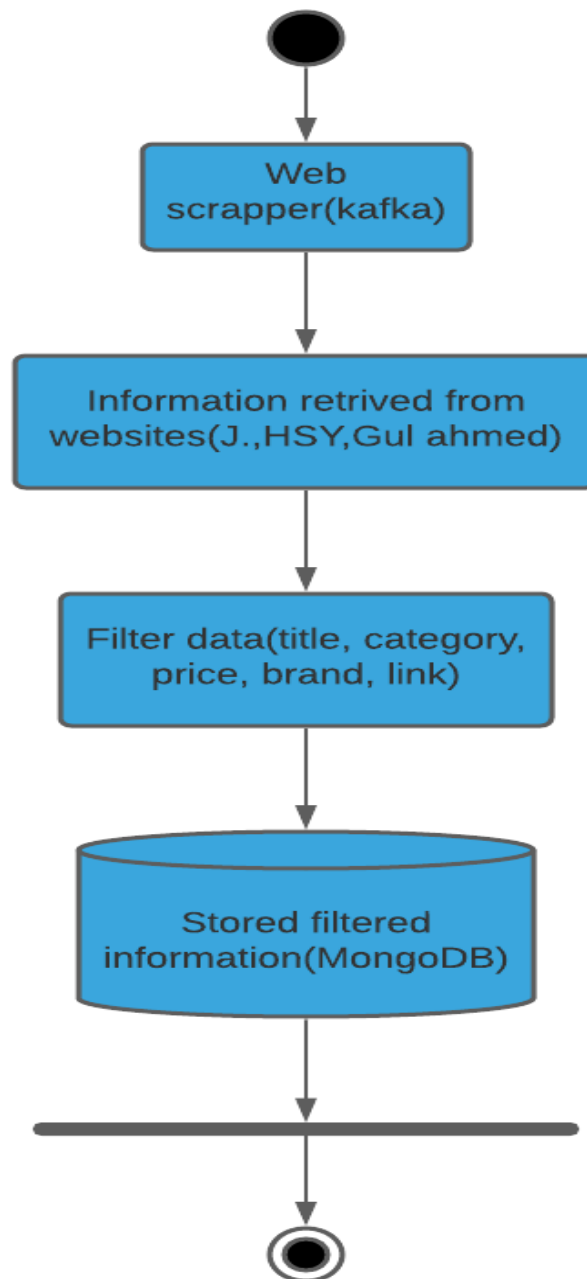
Figure 10:Activity Diagram of Web scraping

3.2.1.5 Image search
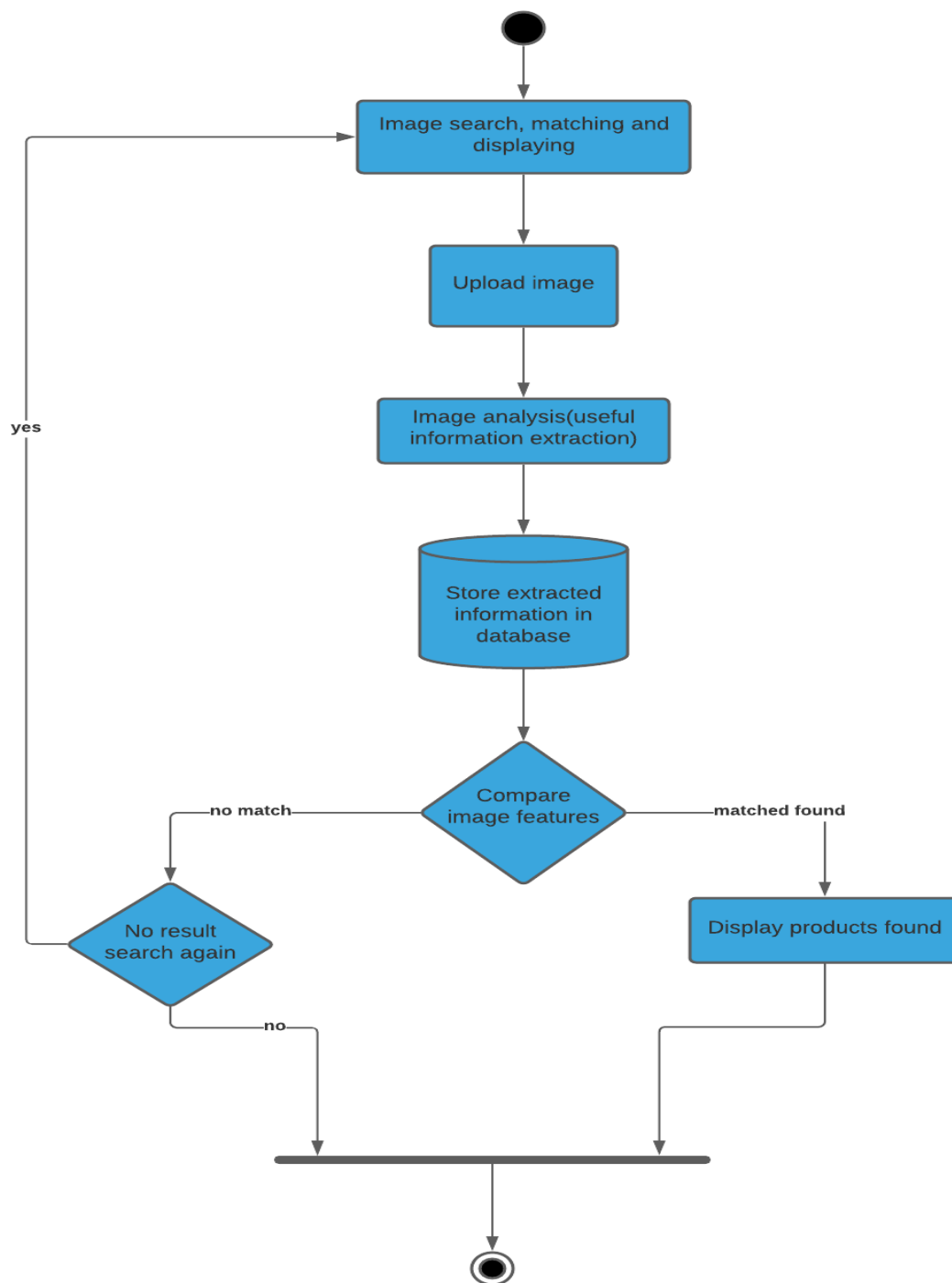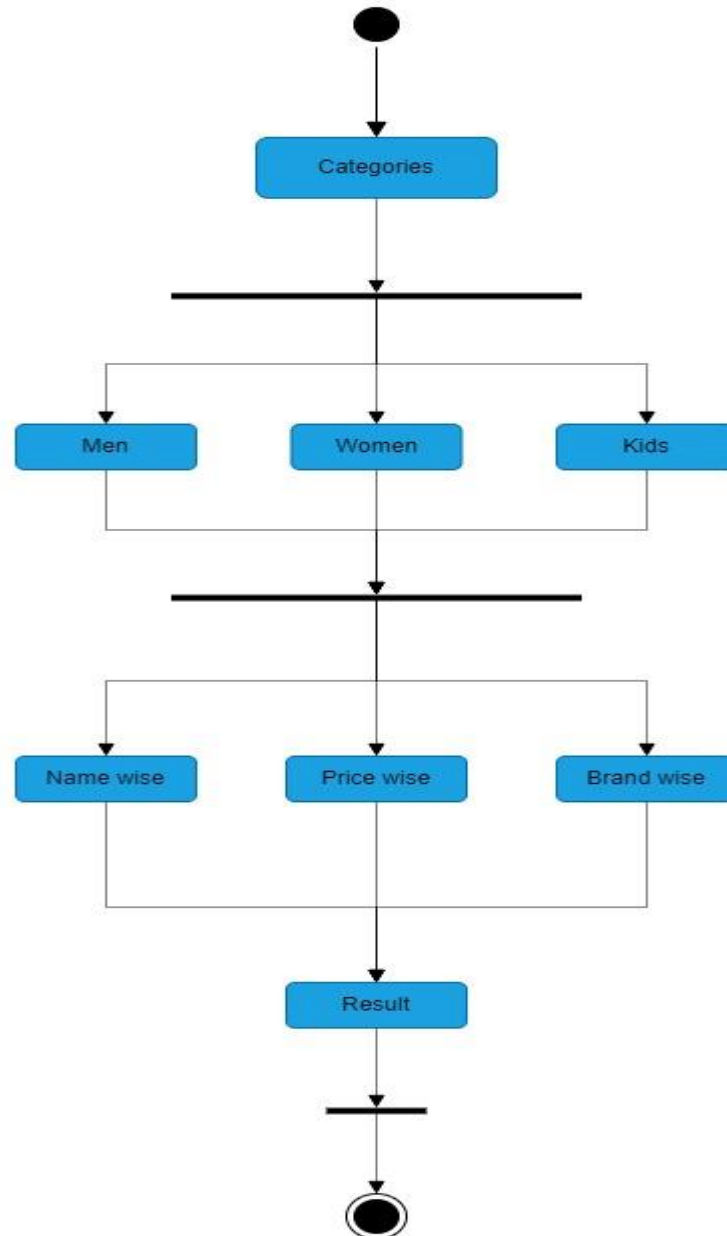

Figure 11:Activity Diagram of Image search

3.2.1.6 Categories

Figure 12:Activity Diagram of Search filter

3.2.1.7 Chatbot
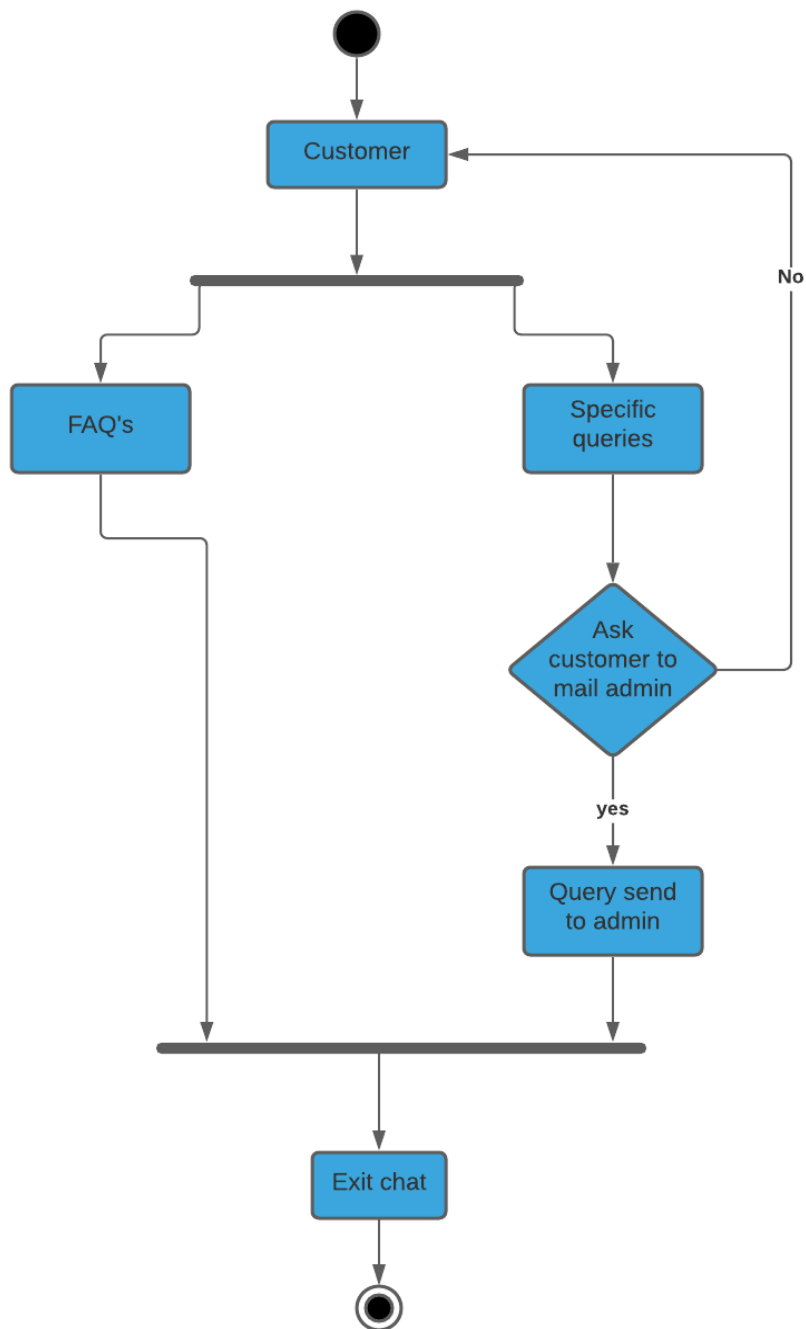
Figure 13: Activity Diagram of Chatbot

3.2.1.8 Help, feedback and rating
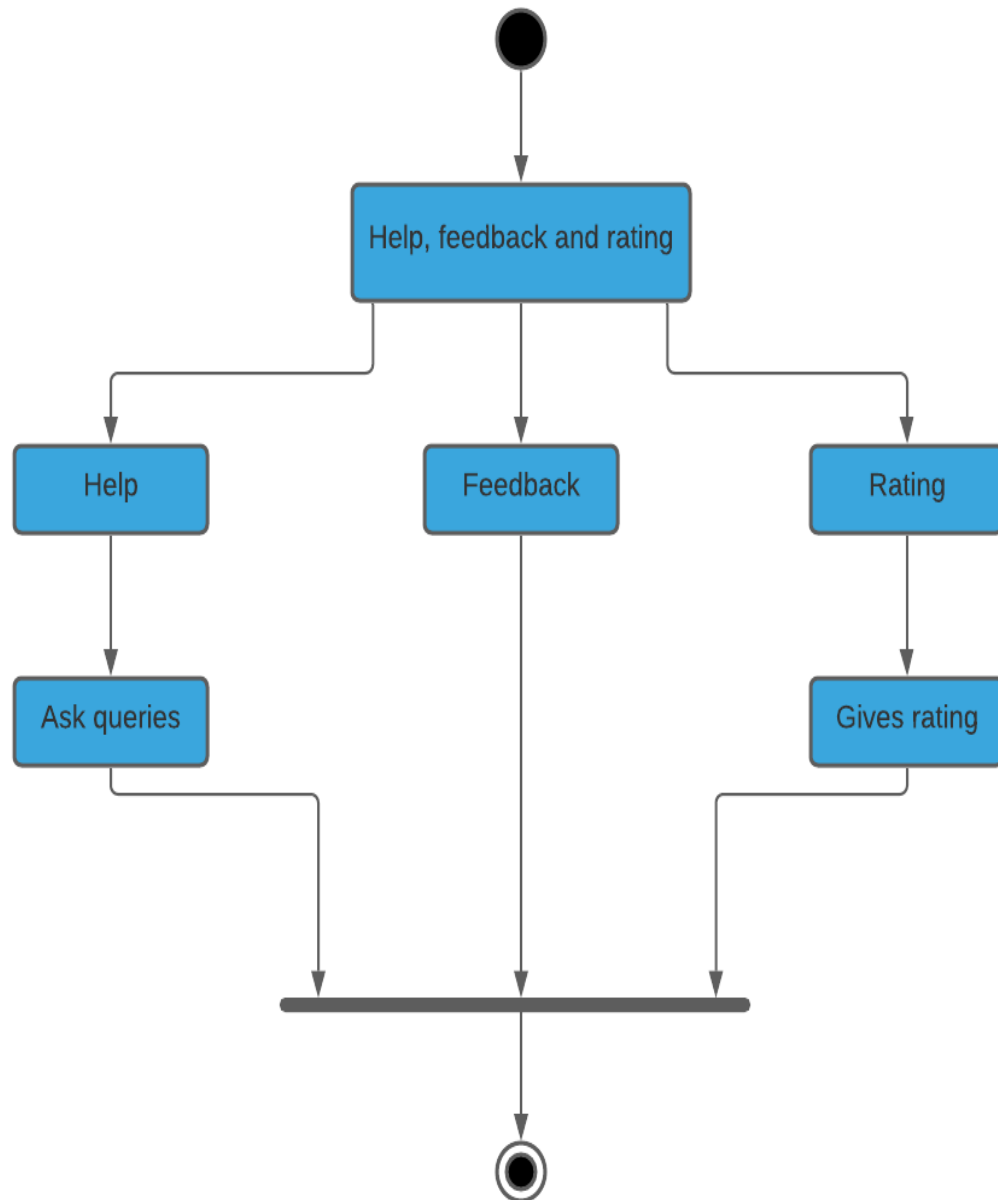
Figure 14: Activity Diagram of Help, feedback, and rating

3.2.2   Class Diagram
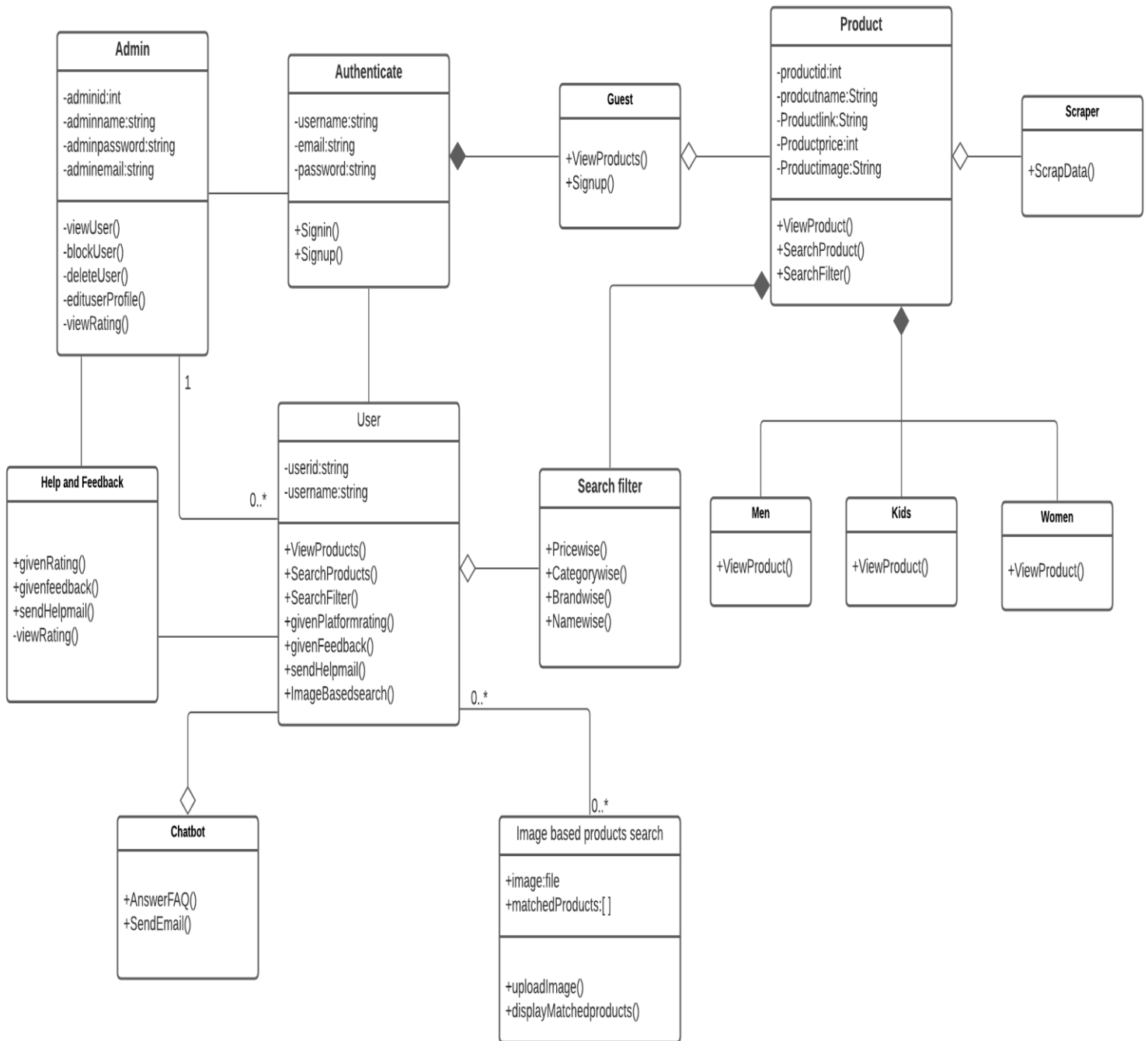
Figure 15:Class diagram of OnSpot
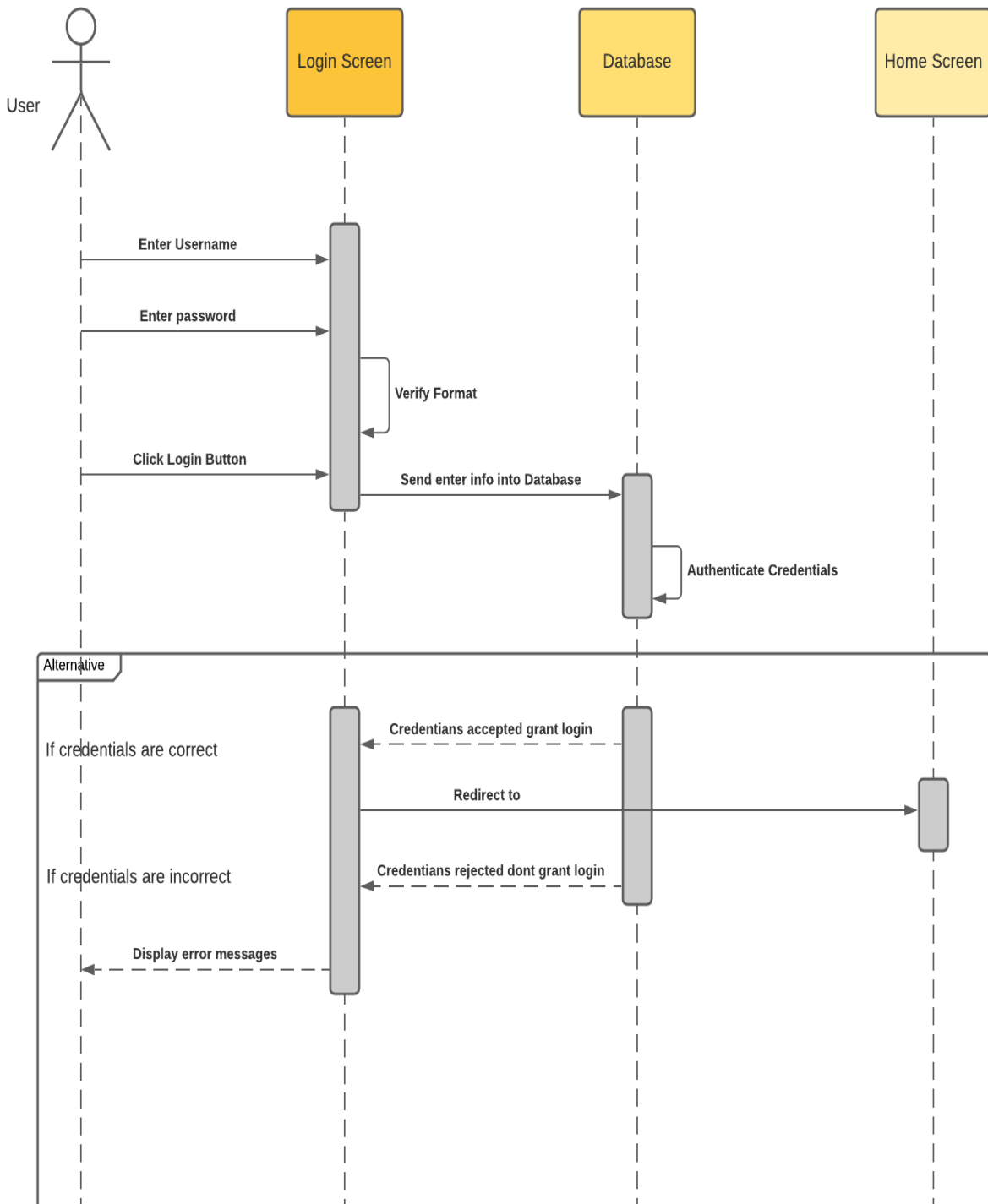
3.2.3   Sequence Diagram

3.2.3.1   Login

Figure 16: Sequence Diagram of Login
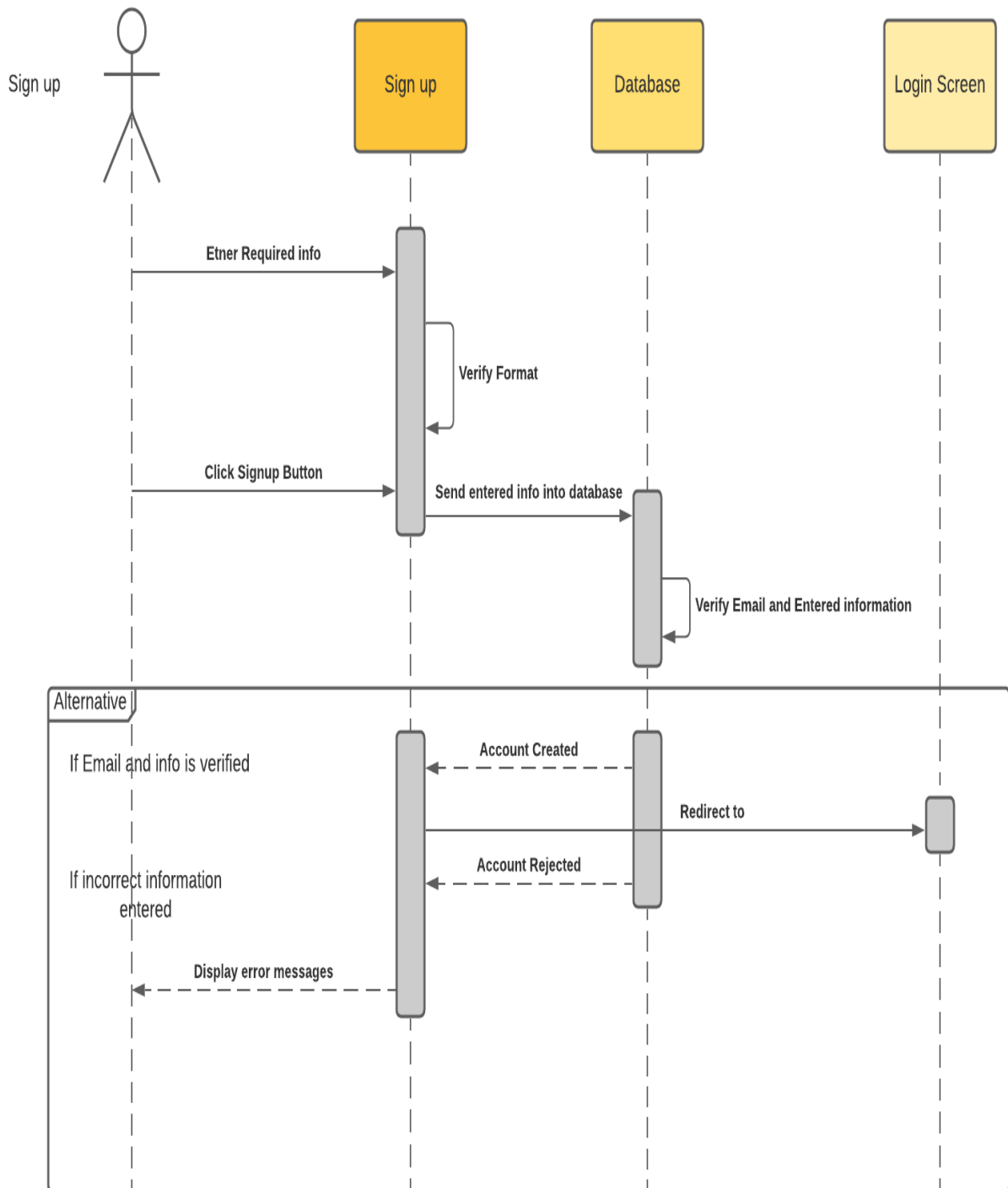
3.2.3.2 Signup

Figure 17:Sequence Diagram of Signup
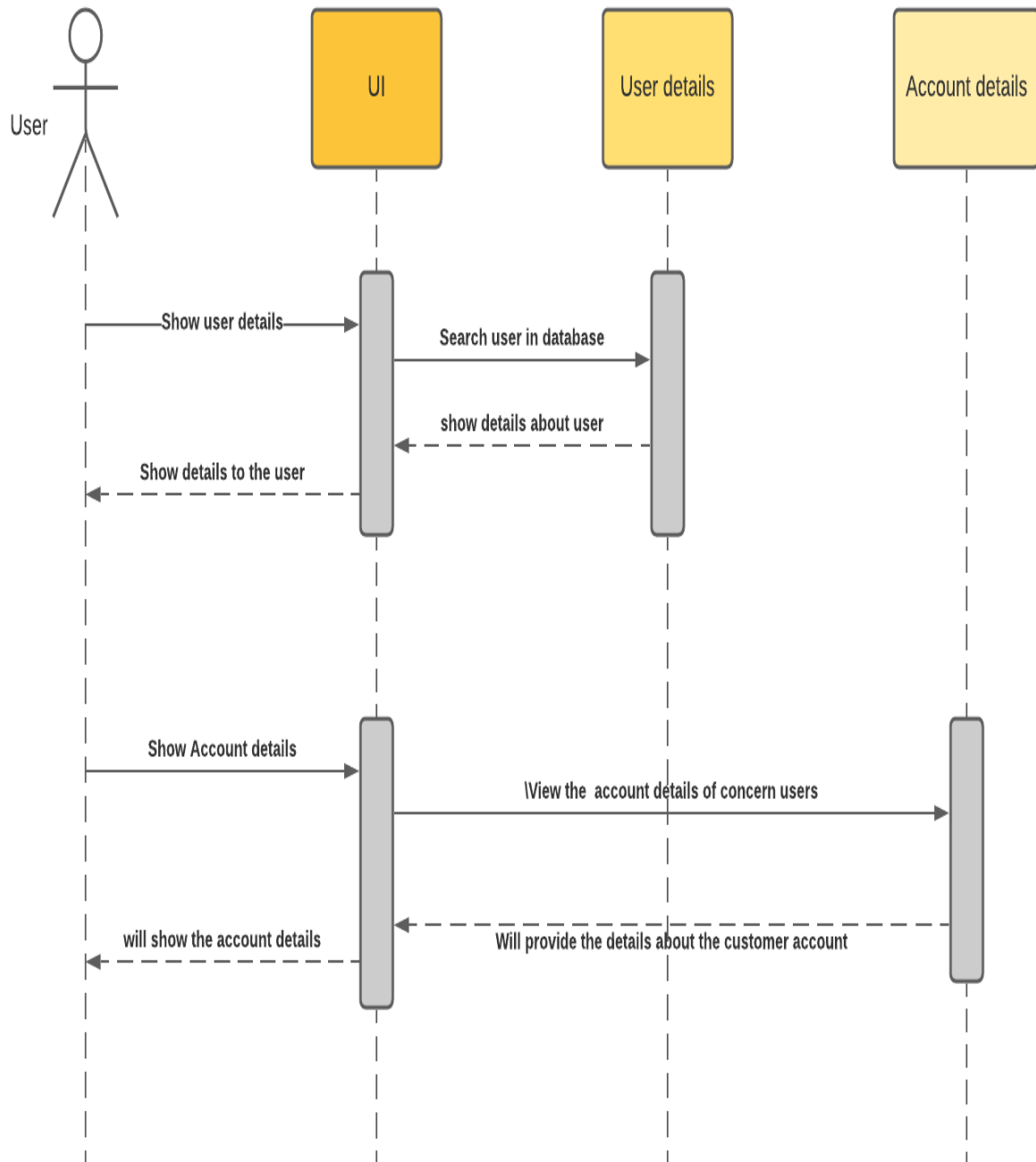
3.2.3.3 User Account

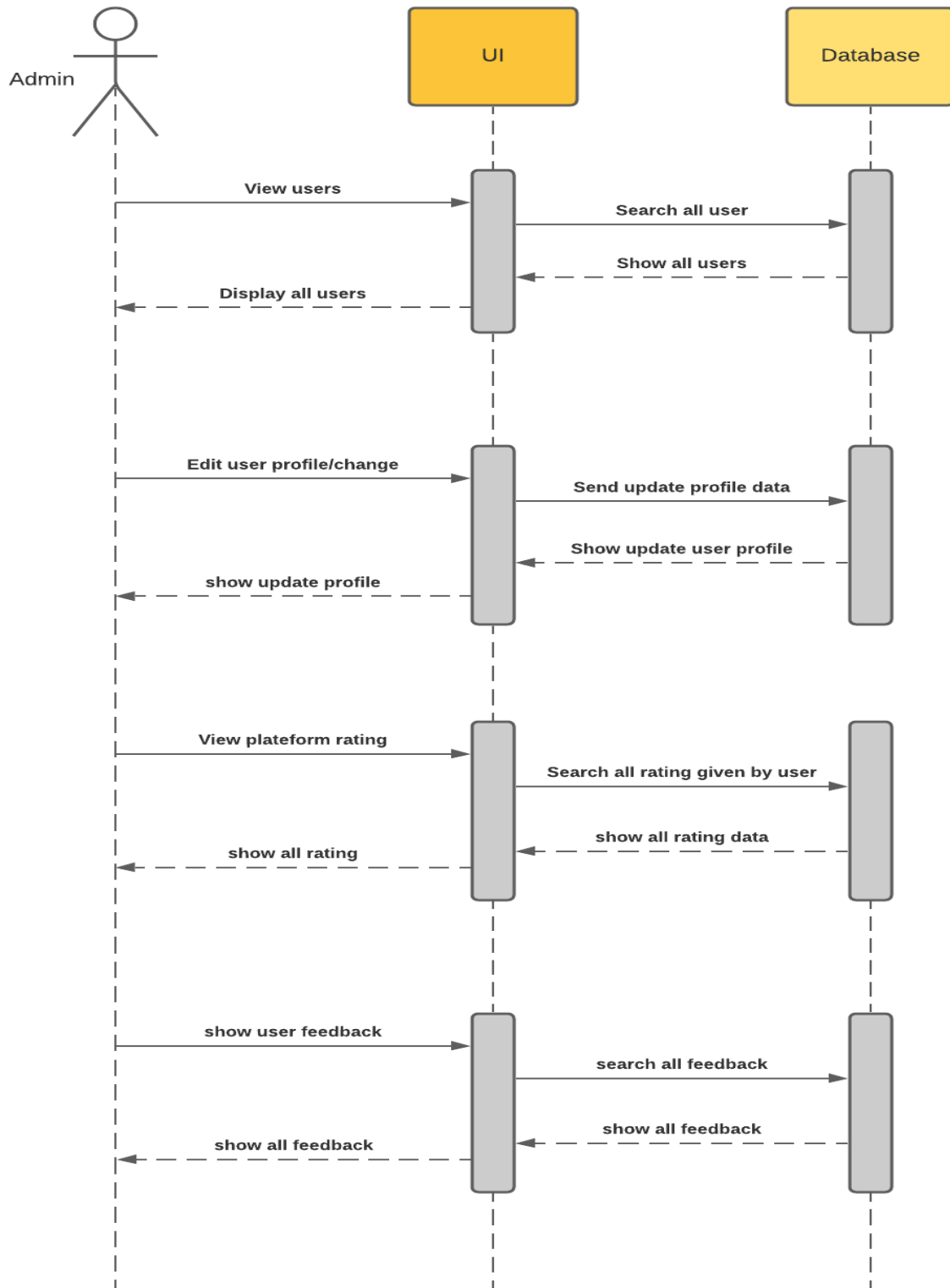**Figure 18:Sequence Diagram of user account**

3.2.3.4 Admin Account

Figure 19:Sequence Diagram of Admin account

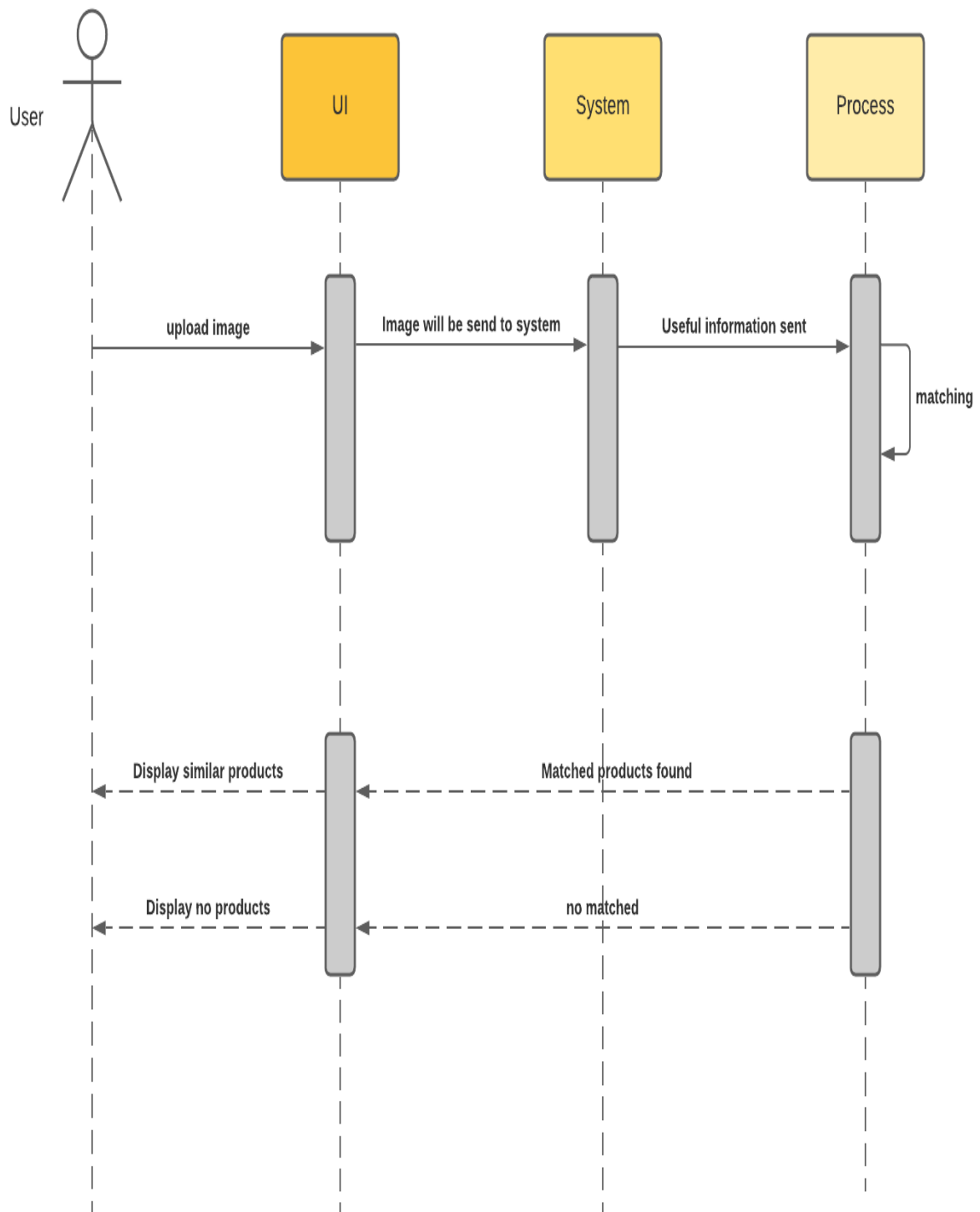### 3.2.3.5 Image search, matching and displaying

Figure 20:Sequence Diagram of Image search
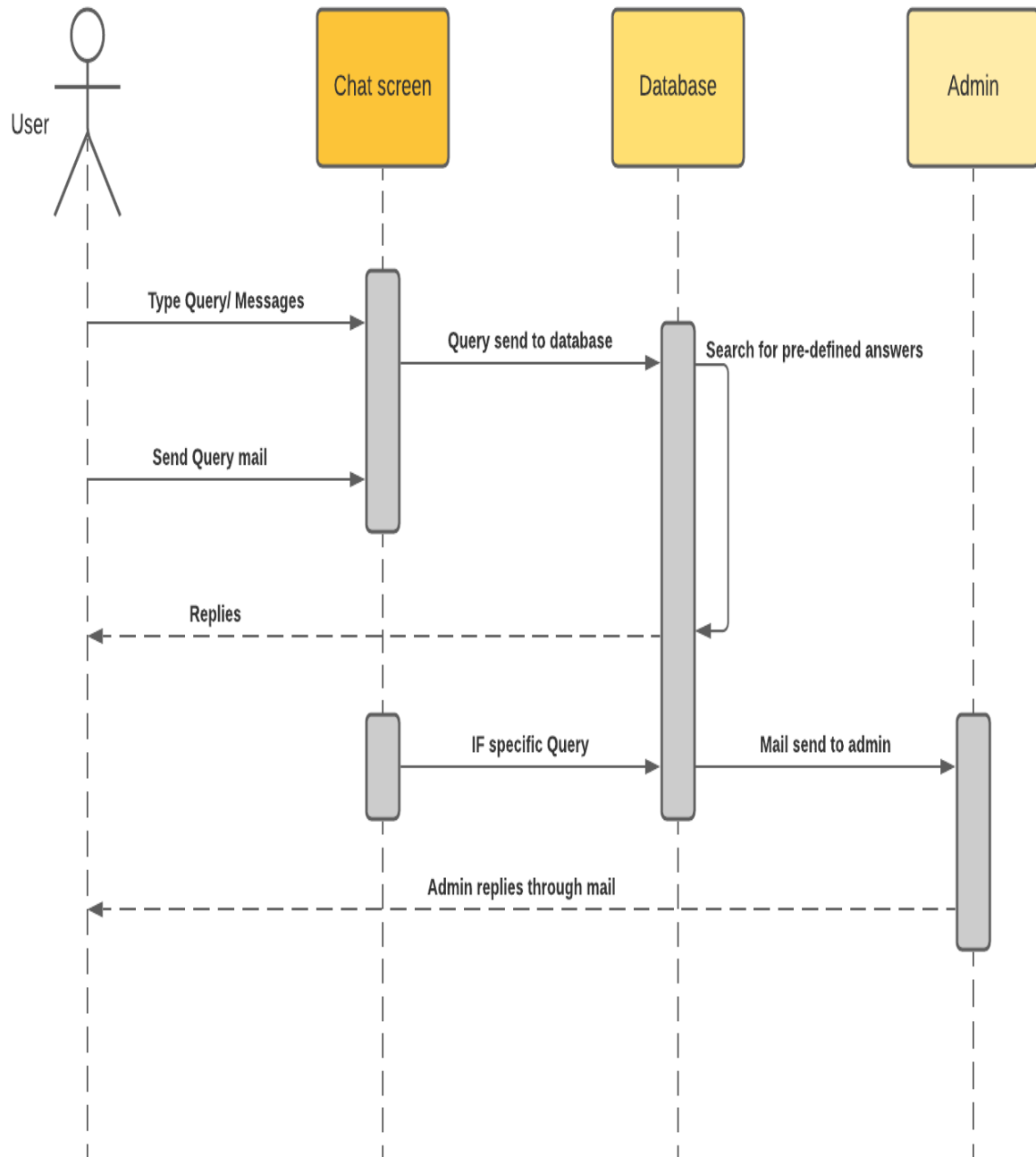
3.2.3.6 Chatbot

Figure 21:Sequence Diagram of Chatbot

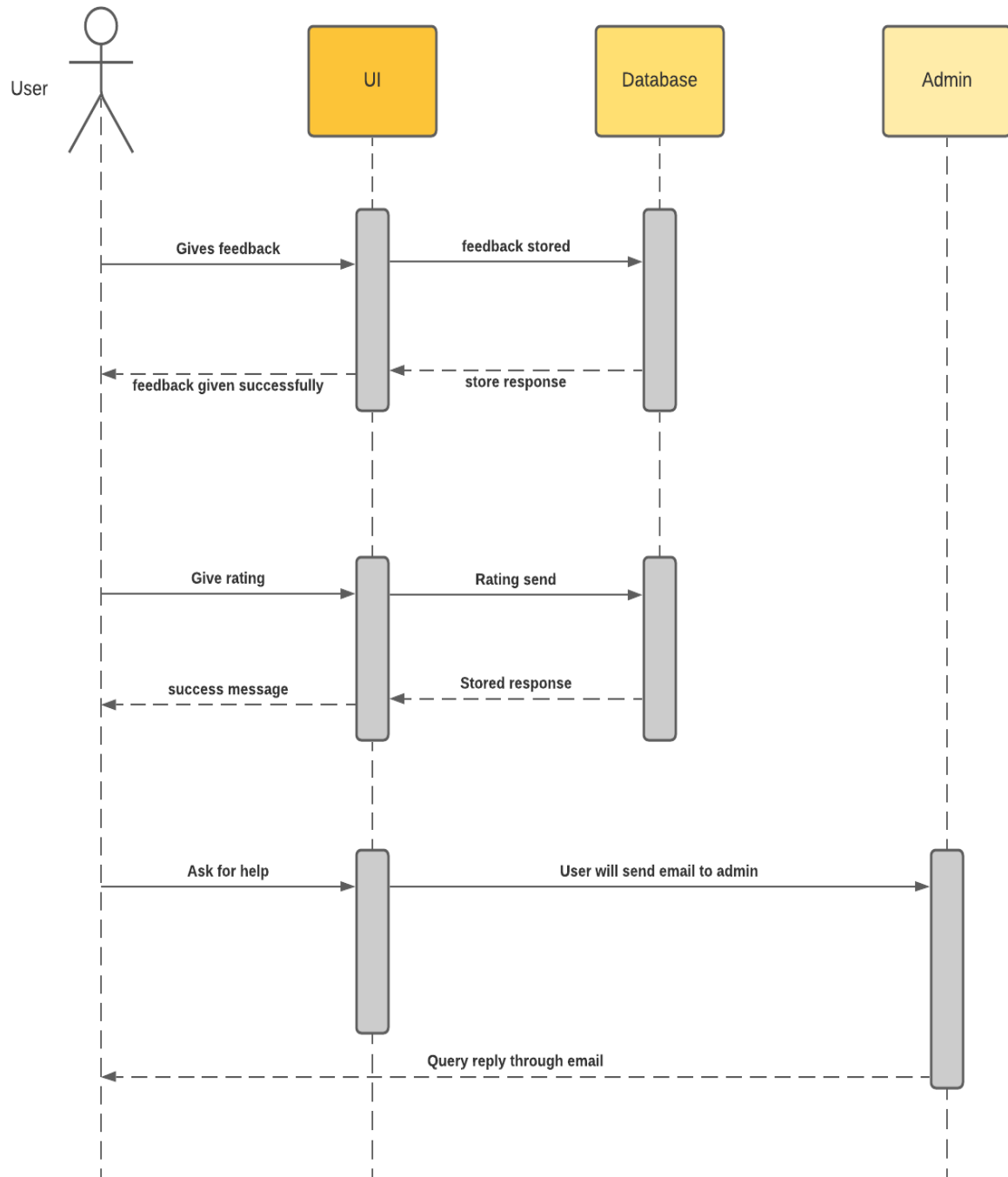### 3.2.3.7 Help, feedback and rating

Figure 22:Sequence Diagram of Help, feedback and rating

3.3 Data Design

3.3.1 Mongoose Schema

We are using MongoDB, which stores data in the form of documents. The document consists of JSON objects in which the data is stored. Following are the JSON Schemas for our Project.

User schema:
```
const userSchema = mongoose.Schema({
    firstName: {
      type: String,
      required: true,
      trim: true,
      min: 3,
      max: 20,
    },
    lastName: {
      type: String,
      required: true,
      trim: true,
      min: 3,
      max: 20,
    },
    username: {
      type: String,
      required: true,
      unique: true,
      index: true,
      lowercase: true,
    },
    email: {
      type: String,
      required: true,
      unique: true,
      trim: true,
      lowercase: true,
    },
    hash_password: {
      type: String,
      required: true,
    },
  },
  { timestamps: true }
);
```

Product Schema:

```
const productSchema = new mongoose.Schema(
  {
    title: {
      type: String,
      required: true,
      trim: true,
    },
    imageLink: {
      type: String,
      required: true,
      unique: true,
    },
    productLink: {
      type: String,
      required: true,
      unique: true,
    },
    price: {
      type: String,
      required: true,
    },
    brand: {
      type: String,
      required: true,
    },
    category:{
      type: mongoose.Schema.Types.ObjectId, ref:'Categories'
    },
    event:{
      type: mongoose.Schema.Types.ObjectId, ref:'Events'
    }
  },
```

Admin Schema:

```
const mongoose = require('mongoose');

const adminSchema = new mongoose.Schema({

  name: {type: String, required: true},
  userName: {type: String, unique: true ,required:true},
  password: {type: String, required: true},
```

```
    email:{type: String, required: true},
    createdDate: {type: Date, default: new Date()},

});

module.exports = mongoose.model('Admin',adminSchema);
```

Category schema:

```
const mongoose = require('mongoose');

const categorySchema = new mongoose.Schema({

    categoryName: {type: String, required: true},
    createdDate: {type: Date, default: new Date()},

});

module.exports = mongoose.model('Category',categorySchema);
```

Feedback schema:

```
const mongoose = require('mongoose');

const feedBackSchema = new mongoose.Schema({

    userId: {type: String, required: true},
    userName: {type: String, required: true},
    feedback: {type: String, required:true},
    createdDate: {type: Date, default: new Date()},

});

module.exports = mongoose.model('Feedback',feedBackSchema);
```

Rating schema:

```
const mongoose = require('mongoose');

const ratingSchema = new mongoose.Schema({

    userId: {type: String, required: true},
    userName: {type: String, required: true},
    rating :{type: Number, required:true},
```

```
    createdDate: {type: Date, default: new Date()},

});

module.exports = mongoose.model('Rating',ratingSchema);
```

3.3.2 Data Dictionary

Collections	Property	Data Type	Description
User	Full name	string	Name of the user
User	email	string	Email of user
User	Phone	string	Phone number of user
User	Password	string	Password of user
User	city	string	City of user
User	Country	string	Country of user
User	dob	string	Date of birth of user
User	Gender	string	Gender of user
User	Photo	String	Profile of user
Admin	Full name	String	Full name of admin
Admin	Email	String	Email of admin
Admin	Phone	String	phone of admin
Admin	Password	String	Password of admin
Admin	city	String	City of admin

Admin	Country	String	Country of admin
Admin	Dob	String	Dob of admin
Admin	Gender	String	Gender of admin
Admin	photo	String	Photo of admin
Feedback	Feedback content	String	Feedback message user will write
Scrape	scraper	string	Scraper scrape data

3.4   Human Interface Design

OnSpot provide easy to use interface for customers so that they can utilize maximum features with ease. It provides an interface with facilitates complete freedom regarding the use of application. It maintains consistency as all the concepts on screens are interrelated. In addition, it also provides visibility, learnability and satisfaction to the customer.
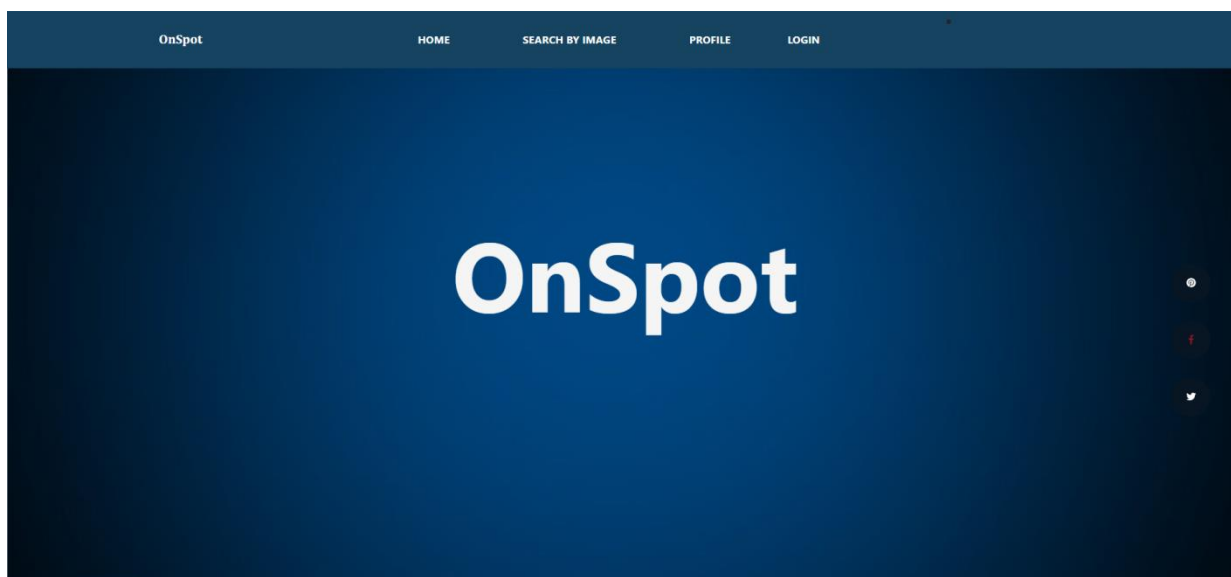
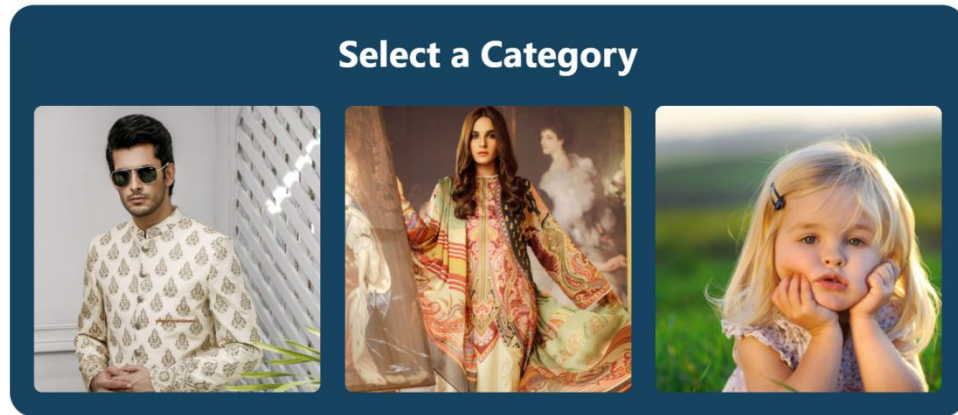### 3.4.1   Screen Images

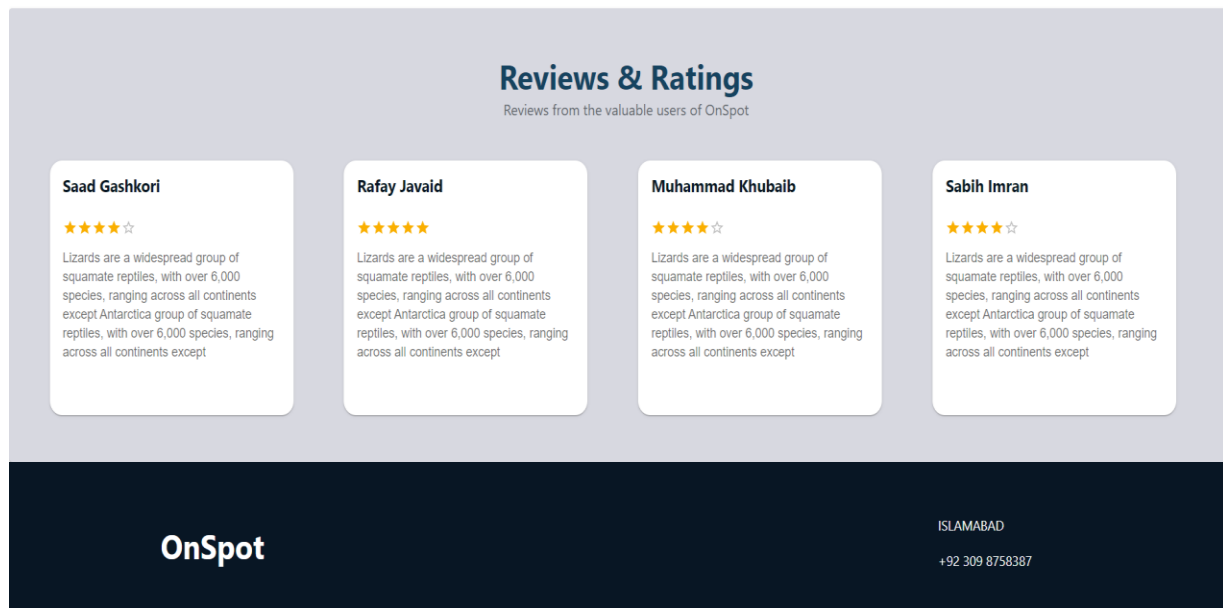**Figure 23: Home Screen**

Figure 24: Category Screen

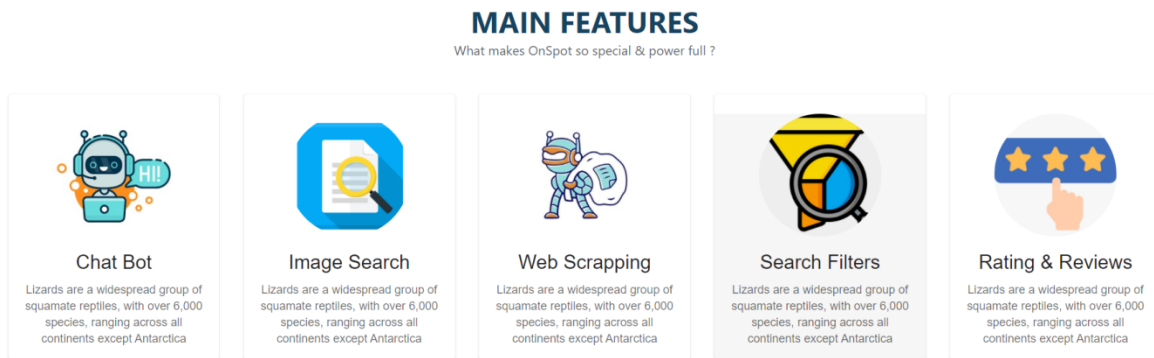**Figure 25:Feedback and Rating Screen**

MAIN FEATURES

What makes OnSpot so special & power full ?

Chat Bot
Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

Image Search
Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

Web Scrapping
Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

Search Filters
Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

Rating & Reviews
Lizards are a widespread group of squamate reptiles, with over 6,000 species, ranging across all continents except Antarctica

Figure 26: Main features

OnSpot   HOME   SEARCH BY IMAGE   PROFILE   LOGIN

Search By Image

UPLOAD

About Image Search

Image Based search provides you a great ease.You just need to upload the image of product we and we will suggest you the products most similar to it

Figure 27:Image search Screen

Figure 28: Edit Profile Screen

OnSpot   HOME   SEARCH BY IMAGE   PROFILE   LOGIN

Sign in to OnSpot

khubaibKhan@gmail.com

....

Forgot your password?

Sign in

Hi, Friend!

Enter your personal details and
start your journey with us.

SIGN UP

Figure 29: Sign in Screen

Welcome!

To keep connected with us
please login your personal info

SIGN IN

Create Account

FirstName

LastName

Email

Password

SIGN UP

Figure 30: Signup Screen

3.4.2 Screen Objects and Actions

Screen1: This screen shows UI of our App OnSpot
Screen 2: User will write email, password and confirm Password to Sign Up.
Screen 3: User can explore and view offers on home screen and can Log in.
Screen 4: User can view all Fashion fade in our app
Screen5: User will select category

4 Implementation

4.1 Algorithm

Algorithm 1: Login/ Sign up

Step 1: The user would install the application on their mobile devices.
Step 2: The user would be prompted to sign up if their account does not exist already, basic information would be gathered and the data would be forwarded to the database for safekeeping and later use, the user would be redirected to the login page after that.
Step 3: After verification from the database the user would be able to see and use the services offered by **OnSpot.**

Algorithm 2: Search Products on the platform

Step 1: The query is retrieved from the search bar from the application.
Step 2: It would be forwarded to the database.
Step 3: The database would return the relevant data against the required results.
Step 4: The data would be displayed to the screen for the user.

Algorithm 3: Filtering the results

Step 1: The user-selected filter would be fetched through the selection menu.
Step 2: The required filters would be applied to the records by the use of a real-time database function call.
Step 3: The results would be returned and shown on the screen.

Algorithm 4: Chabot

Step 1: The AI based Chabot will assist and handle the customer services.
Step 2: This Chabot will help the customers in shopping by providing products information which will help customers and will provide great ease to them.
Step 3: The Chabot will also have a voice-command based which will answer the customers FAQ's using the Artificial intelligence and in case of a more specific question the boat will send a mail to the administration to notify them.

Algorithm 5: Feedback
Step 1: The user will give the feedback by typing down his/her feedback in comment box
Step 2: Feedback will be saved in database as soon as user press give feedback button.

Algorithm 6: Rating
Step 1: User gives rating by giving stars on rating bar
Step 2: Rating give as user press rating button
Step 3: Confirmation message will be shown

Algorithm 7: Query
Step 1: User will type on the query
Step 2: Query will be sent to admin
Step 3: When send button press confirmation message will pop up will be shown on screen

Algorithm 8: Image search
Step 1: User upload image by the pressing image upload button
Step 2: User press search button
Step 3: Image search API is called and after processing data is featured from database
Step 4: Image related products are displayed to user on screen
Step 5: User select the products from search result
Step 6: User will be navigated products original sites

Algorithm 9: Web Scraper
Step 1: KAFKA broker will scrap the data from the Gul Ahmed, J. and HSY after every 24 hours.
Step 2: Scrapped data will be filtered
Step 3: Filtered data will be stored in database.

4.2 User Interface

Following are few examples of User Interfaces:

4.2.1 Home Screen
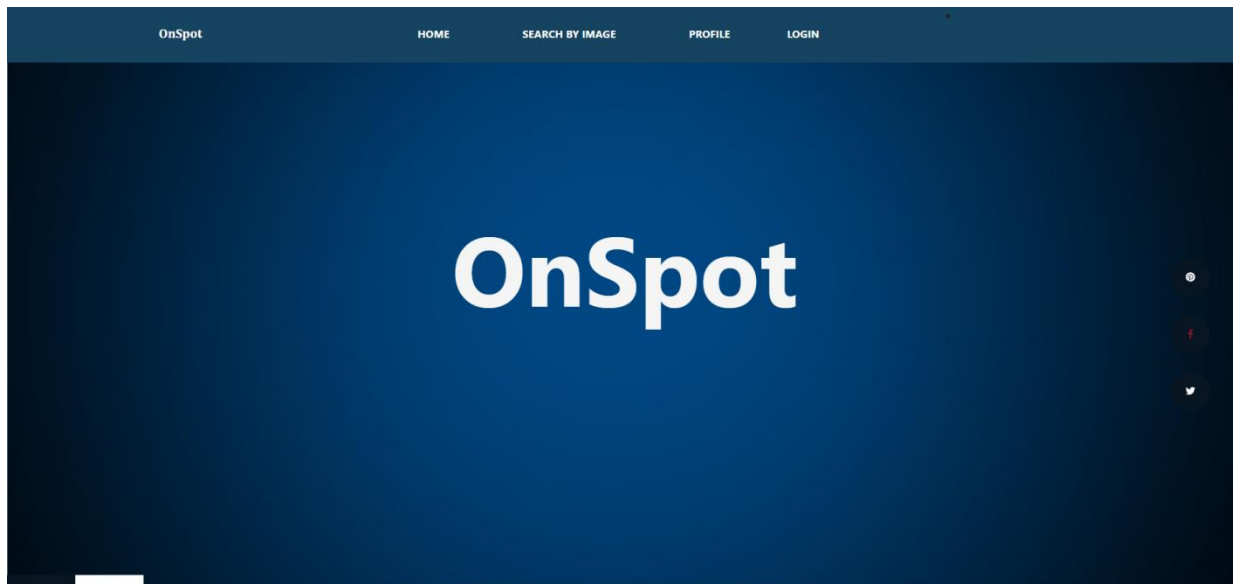
Figure 31: Home Screen

4.2.2 Signup Screen
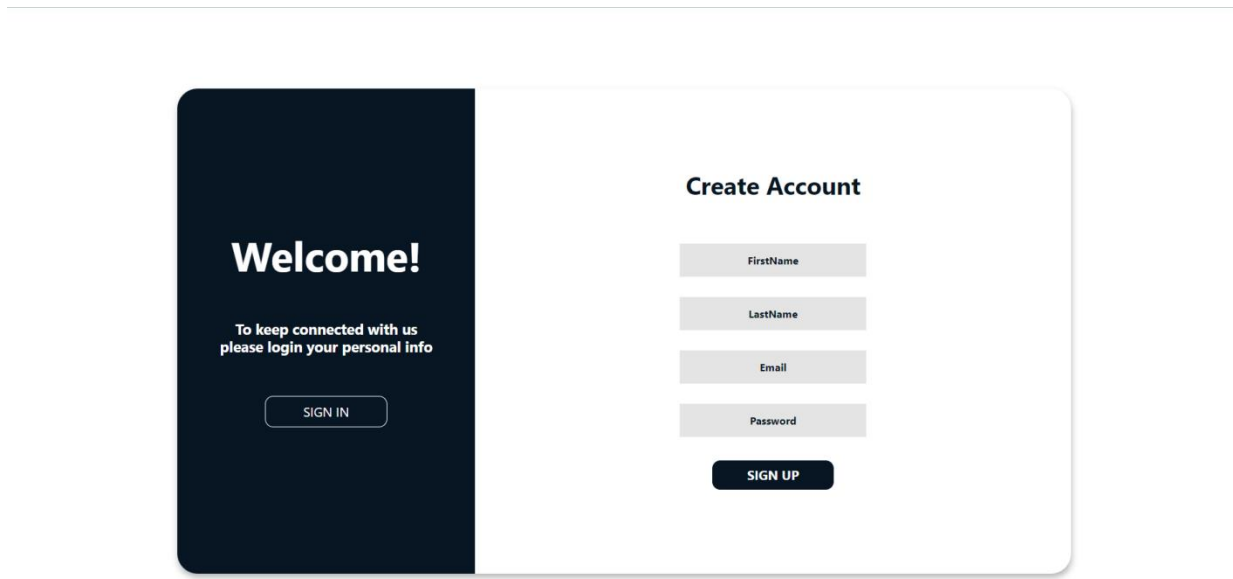
Figure 32: Signup Screen

4.2.3   Login Screen
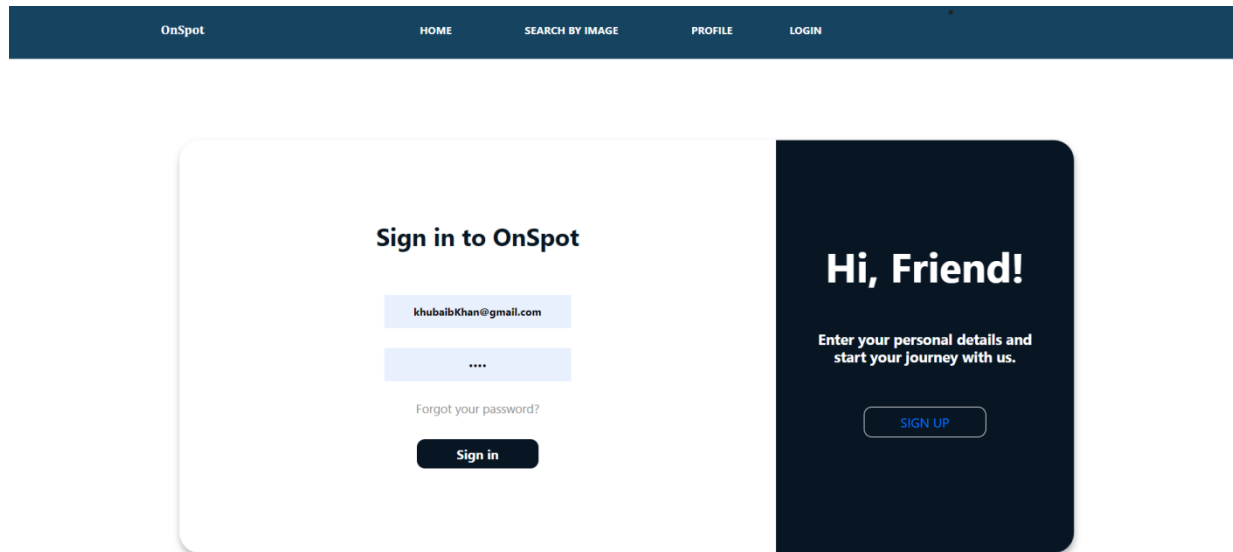
Figure 33: Login Screen

4.2.4   Category Screen
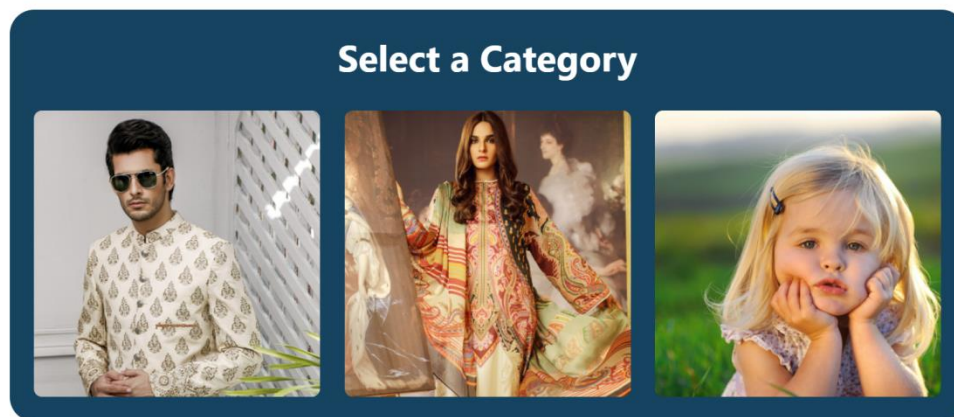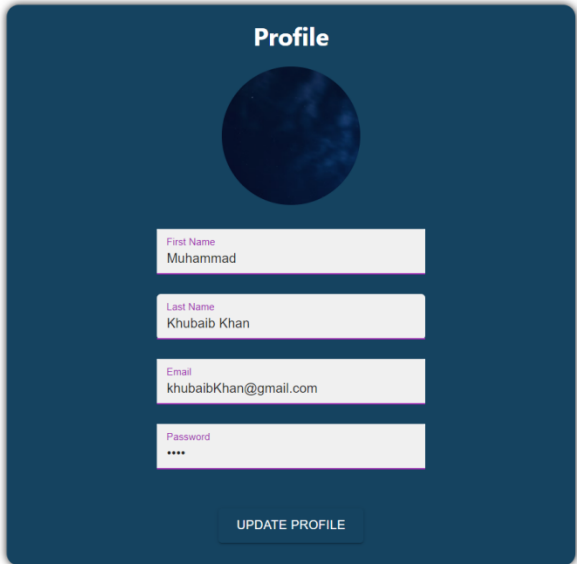
Figure 34: Category Screen
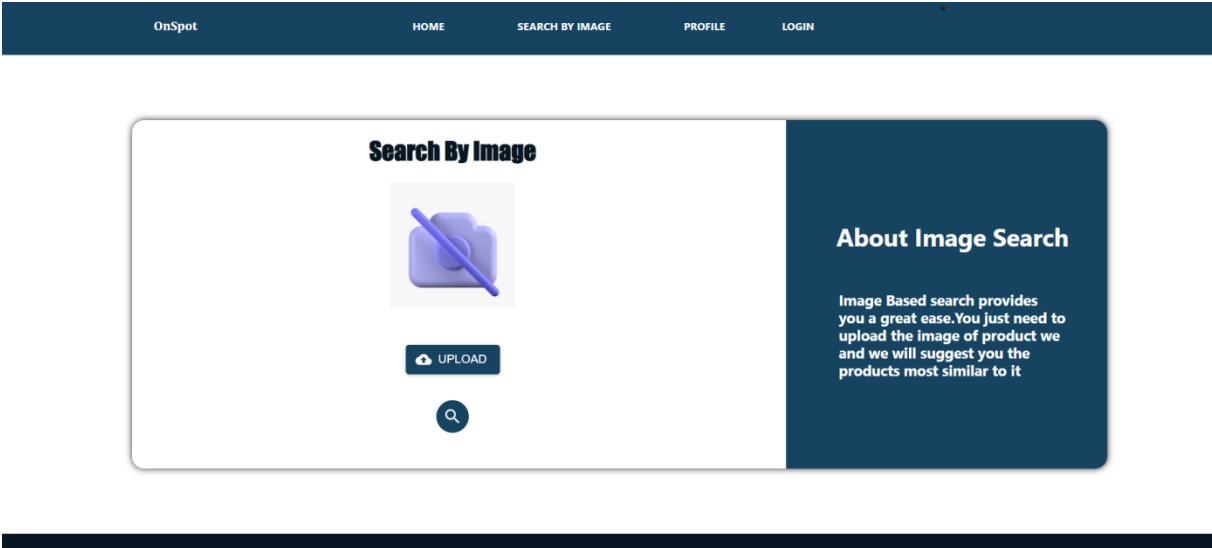
4.2.5   Update Profile Screen

Figure 35:Update Profile Screen

4.2.6   Image Search Screen

Figure 36:Image Search Screen

4.2.7 Main Features Screen

Figure 37:Main Features Screen

4.2.8 Review and Rating Screen

Figure 38:Review and Rating Screen

4.3 Deployment

OnSpot will be deployed on the window operating systems. The project will need strong internet connection to run this application. The Image based search functionality of the project is tested internally. Once the project is deployed, we will thoroughly run the application to test the functionality of the project.

5 Testing and Evaluation

5.1 Unit Testing

This chapter will include testing methods and evaluation.

Unit Testing 1:   Signup as a User

Testing Objective: To ensure the signup form is working correctly.

Test Case Id: BU_001

Test Case Description: Test the signup functionality.

Test Scenario: Verify on entering valid email to register.

Table 6.1: Test Cases for Login

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify user signup after click on the 'Signup' button on signup form with correct input data.	Email: Khoaibkhan1@gmail.com	Successfully signed into the main page of the system as a User.	As Expected,	Pass

Unit Testing 2:   Sign in as a User.

Testing Objective: To ensure the sign in form is working correctly.

Test Case Id: BU_002

Test Case Description: Test the sign in functionality.

Test Scenario: Verify on entering valid username and password to login.

Table 6.2: Test Cases for Login

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify user login after click on the 'login' button on login form with valid input data.	Username: khobaib khan Password:123456	Successfully login into the main page of the system as user.	As Expected,	Pass

Unit Testing 3:   Sign out.

Testing Objective: To ensure the Sign out is working properly.

Test Case Id: BU_003

Test Case Description: Test the sign out functionality.

Test Scenario: Sign out successfully from the user profile.

Table 6.3: Test Cases for Sign out

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify user Sign out after click on the "Sign out" Button.	User clicks on the logout out button.	Successfully Logout action from OnSpot.	As Expected,	Pass

Unit Testing 4:   Forget Password

Testing Objective: To ensure the forget password form is working correctly.

Test Case Id: BU_004

Test Case Description: Test the forget password functionality.

Test Scenario: Verify on entering valid email to get a new password link.

Table 6.4: Test Cases for Forgot Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify user email after click on the 'Forget password' button on forget password form with correct input data	Email: Khobaibkhan117@gmail.com	Successfully email sent to the user.	As Expected,	Pass

Unit Testing 5:   Change Password

Testing Objective: To ensure the change password form is working correctly.

Test Case Id: BU_005

Test Case Description: Test the change password functionality.

Test Scenario: Verify on entering previous password and enter new password.

Table 6.5: Test Cases for Change Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Change password and entering new password and click on 'change password' button on change password form with correct Input data.	Previous password: ********* Enter new password: ********	Successfully password changed.	As Expected,	Pass

Unit Testing 6:   Disable Account

Testing Objective: To ensure the Disable Account form is working correctly.

Test Case Id: BU_006

Test Case Description: Test the disable account functionality.

Test Scenario: Verify on successfully disabling the user account.

Table 6.6: Test Cases for Disable Account

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the user after click on the 'Disable Account' button on disable account page after entering the valid input data.	User clicks on the disable account button.	User account disabled successfully.	As Expected,	Pass

Unit Testing 7:   View Profile

Testing Objective: To ensure the View Profile form is working correctly.

Test Case Id: BU_007

Test Case Description: Test the view profile functionality.

Test Scenario: Verify on successfully opening the view profile section.

Table 6.7: Test Cases for View Profile

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the user after clicking on the 'View Profile' button on view profile page after successfully signing in.	User clicks on the view profile button.	View profile page will be opened successfully.	As Expected,	Pass

Unit Testing 8: Edit Profile

Testing Objective: To ensure the edit profile form is working properly.

Test Case Id: BU_008

Test Case Description: Test the edit profile functionality.

Test Scenario: Verify after successfully editing the user profile.

Table 6.8: Test Cases for Edit Profile

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify user edit after click on the 'Edit Profile' button on edit profile page with correct input data.	User enters his/her new personnel details to update the existing profile.	Successfully edit the user profile.	As Expected,	Pass

Unit Testing 9: View Product

Testing Objective: To ensure the View product is working properly.

Test Case Id: BU_009

Test Case Description: Test the View product functionality

Test Scenario: Verify on successfully displaying the products.

Table 6.9: Test Cases for View Product

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the product is displayed to view after clicking on the "View product" button on the inventory management tab by the Admin.	Admin selects the 'View product' to view the products in the database.	Product is successfully displayed in the database.	As Expected,	Pass

Unit Testing 10: Search Product

Testing Objective: To ensure the Search product is working properly.

Test Case Id: BU_0010

Test Case Description: Test the Search product functionality

Test Scenario: Verify on successfully searching the products.

Table 6.10: Test Cases for Search Product

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the product searched is displayed after clicking on the "Searched product" tab on the inventory management tab by the Admin.	Admin selects the 'Search product' to search the products in the database.	Search product is displayed to the admin.	As Expected,	Pass

Unit Testing 11: Category wise search products

Testing Objective: To ensure the Search product by category is working properly.

Test Case Id: BU_0011

Test Case Description: Test the Search product functionality

Test Scenario: Verify on successfully searching the products.

Table 6.11: Test Cases for Search Product

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the product searched is displayed after clicking on the "Searched product" tab on the inventory management tab by the Admin.	User selects the 'Search product' to search the products in the database category wise	Search product is displayed to the user.	As Expected,	Pass

Unit Testing 12: View Category

Testing Objective: To ensure the View Category is working properly.

Test Case Id: BU_0012

Test Case Description: Test the View category functionality

Test Scenario: Verify on successfully displaying the category.

Table 6.12: Test Cases for View Category

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the category is displayed after clicking on the "View Category" button.	Admin have selected the 'View Category' from option.	Category is successfully displayed to the admin.	As Expected,	Pass

Unit Testing 13: Upload image

Testing Objective: To ensure the upload image is working properly.

Test Case Id: BU_0013

Test Case Description: Test the upload image

Test Scenario: Verify on successfully upload image

Table 6.13: Test Cases for Upload image

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify the upload image is displayed after clicking on the "Upload image" button.	User have selected the 'Upload image' from option.	Upload image is successfully displayed to the user.	As Expected,	Pass

5.2 Functional Testing

The functional testing will take place after the unit testing. In this functional testing, the functionality of each of the module is tested. This is to ensure that the system produced meets the specifications and requirements.

Functional Testing 1: Enter Username

Test Objective: To ensure that the name of user is being entered.

Test Case Id: FU_001

Test Case Description: Test the enter name inputs in signup form.

Test Scenario: Enter the username on signup form

<p align="center">Table 6.1: Test Cases for Login with different Roles</p>

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering username in signup form, the username is entered.	Username: khobaibkhan Password: 123456	Home page for the admin is loaded.	Login as a 'Customer'.	Pass

Functional Testing 2: Enter Email

Test Objective: To ensure that the email of user is being entered.

Test Case Id: FU_002

Test Case Description: Test the enter email inputs in login and signup form.

Test Scenario: Enter the email on login and signup forms

<p align="center">Table 6.2: Test Cases for Enter Email</p>

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering email in signup form, the email is entered	Email: khobaibkhan117@gmail.com	Email is entered in the signup form input	As expected,	Pass
2.	Verify on entering email in login form, the email is entered	Email: khobaibkhan117@gmail.com	Email is entered in the login form input	As expected,	Pass

Functional Testing 3: Enter Password

Test Objective: To ensure that the password of the user is being entered.

Test Case Id: FU_003

Test Case Description: Test the enter password input in login and signup form.

Test Scenario: Enter the password on login and signup forms

Table 6.3: Test Cases for Enter Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering password in signup form, the password is entered	Password: 123456	Password is entered in the signup form input	As expected,	Pass
2.	Verify on entering password in login form, the password is entered	Password: 123456	Password is entered in the login form input	As expected,	Pass

Functional Testing 4: Confirm Password

Test Objective: To ensure that the user confirms his password before signing up.

Test Case Id: FU_004

Test Case Description: Test the confirm password input signup form.

Test Scenario: Enter the password again in the confirm password input in signup form

Table 6.4: Test Cases for Confirm Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering confirm password in signup form, the password is entered	Password: 123456	Confirmed password is entered in the signup form input	As expected,	Pass

Functional Testing 5: Email Validation

Test Objective: To ensure that the user enters his email in a correct/valid format.

Test Case Id: FU_005

Test Case Description: Test the email input in login and signup form.

Test Scenario: Enter an email with a valid format in the email input in the signup and login form.

Table 6.5: Test Cases for Email Validation

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering email in signup form, the email provided is of correct format	email: khobaibkhan117@gmail.com	Email of correct format is entered in the signup form input	As expected,	Pass
2.	Verify on entering email in login form, the email provided is of correct format	email: khobaibkhan117@gmail.com	Email of correct format is entered in the login form input	As expected,	Pass

Functional Testing 6: Password Validation

Test Objective: To ensure that the user enters his password in a valid format.

Test Case Id: FU_006

Test Case Description: Test the password input in login and signup form.

Test Scenario: Enter a password with a valid format in the password input in the signup and login form.

Table 6.6: Test Cases for Password Validation

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify on entering password in signup form, the password provided is of correct format	Password: 123456	Correct formatted password is entered in the signup form input. Any wrong input displays an error.	As expected,	Pass

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/Suspended
2.	Verify on entering email in login form, the email provided is of correct format	email: khobaibkhan117@gmail.com	Correct formatted password is entered in their login form input	As expected,	Pass

Functional Testing 7: Forgot Password

Test Objective: To ensure that the user can restore his password if by any chance he forgets his password.

Test Case Id: FU_007

Test Case Description: Test forgot password functionality.

Test Scenario: Enter the password in the input on forgot password page.

Table 6.7: Test Cases for Forgot Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/Suspended
1.	Verify on entering your email on forgot password page, you receive an email from the system related to your query	Email: Khobaibkhan117@gmai.com	System is email received	As expected,	Pass

Functional Testing 8: Enter New Password

Test Objective: To ensure that the user can change his password.

Test Case Id: FU_08

Test Case Description: Test enter new password functionality.

Test Scenario: Enter the new password in the input on change password page.

Table 6.8: Test Cases for Enter New Password

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify whether you can enter new password	password: 123456	New password is entered in the textbox input and is changed on clicking 'done' button	As expected,	Pass

Functional Testing 9: Change Username

Test Objective: To ensure that the user can be able to change his name

Test Case Id: FU_09

Test Case Description: Test enter change name functionality.

Test Scenario: Enter the previous username

Table 6.9: Test Cases for Enter username

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify whether you can enter username	Username: khobaibkhan	Username is entered in the textbox input	As expected,	Pass

Functional Testing 10: Chatbot

Test Objective: To ensure that the user can be able to change his name

Test Case Id: FU_010

Test Case Description: Test enter change name functionality.

Test Scenario: Enter the previous username

Table 6.10: Test Cases for Enter username

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify whether you can ask frequent ask question	Username: khobaibkhan	Username ask question by using chatbot	As expected,	Pass

Functional Testing 11: Image search

Test Objective: To ensure that the user can be able to change his name

Test Case Id: FU_011

Test Case Description: Test enter change name functionality.

Test Scenario: Enter the previous username

<div align="center">Table 6.11: Test Cases for Enter username</div>

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify whether you can enter Search image to find products	Username: khobaibkhan	Username search an image	As expected,	Pass

5.3   Integration Testing

<div align="center">Table 6.1: Test Cases for Integration Testing of Unit 1</div>

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Verify Login links to Dashboard Screen.	Email: Khobaibkhan117@gmail.com Password: 123456	Login successful and the user is redirected to dashboard page of the mobile Application.	As Expected	Pass

2.	Verify Signup links to login page.	Username: khobaibkhan Email: Khobaibkhan117@gmail.com Password: 123456	Signup successful and user is redirected to Login page.	As Expected	Pass
3.	Verify Account.	Verify through by link sent on the email.	User verified	As Expected	Pass
4.	Verify Account Link	Redirect to verify account link	Account is verified.	As Expected	Pass
5.	Verify forget password	Enter email: Khobaibkhan117@gmail.com	Reset link is sent to the email	As Expected	Pass
6.	Link on email for forget password.	Enter New Password.	Password reset	As Expected	Pass
7.	Register notification	Username: khobaibkhan Email: Khobaibkhan117@gmail.com Password: 123456	Register email sent to the email	As Expected	Pass
8.	Login notification	Email: Khobaibkhan117@gmail.com Password: 123456	Notification is received on email.	As Expected	Pass

Table 6.2: Test Cases for Integration Testing of Unit 2

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Search Category.	Category Name: Dress	Clothes categories are shown	As Expected	Pass

2.	Search Sub-category.	Sub-category name: Shirt	Shirt categories are shown.	As Expected	Pass
3.	Search Product.	Product name: Rose Red shit	Product details are displayed.	As Expected	Pass
4.	Product Description.	Product Category: Clothes Product Sub-category: Shirt Product name: Rose shirt.	Product description are displayed.	As Expected	Pass
5.	Categories	List of Categories shown.	Categories list is displayed.	As Expected	Pass
6.	Images searches	Image search	Search images are displayed	As Expected	Pass
7.	Select products	Select product	Selected products move to the websites of brands	As Expected	Pass

Table 6.3: Test Cases for Integration Testing of Unit 3

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Ask query	Enter question Add attachments Data added	Question is added for the expert to answer.	As Expected	Pass
2.	Query Respond	Enter answer Add attachments	Answer is added.	As Expected	Pass
3.	Review Answer	Rate the answer given	Review added.	As Expected	Pass
4.	Rate us	Provide the rating.	Rating added.	As Expected	Pass

Table 6.4: Test Cases for Integration Testing of Unit 4

No.	Test Case/Test Script	Test Data	Expected Result	Actual Result	Pass/Fail/Not Executed/ Suspended
1.	Add Category	Enter Categories on system database. Data added.	Category added.	As Expected	Pass
2.	View Category	Display Categories from system database.	Category displayed to admin.	As Expected	Pass
3.	Edit Category	Edit Categories from system database.	Changes saved	As Expected	Pass
4.	Delete Category	Delete Categories from system database.	Category deleted	As Expected	Pass
5.	Add Subcategory	Enter Subcategories on system database. Data added.	Subcategory added.	As Expected	Pass
6.	View Subcategory	Display Subcategories from system database.	Subcategory displayed to admin.	As Expected	Pass

6 Conclusion and Future Work

6.1 Conclusion

The proposed system is basically a web application in which we are providing a lot of facilities to buy their favorite dresses by just one pic, and we are also creating an opportunity from where the user can find the dresses based on the different events, occasions, and parties

6.2 Future Work

We are making a chatbot if the user want to ask question and queries about our system, then he can contact us using chatbot. Overall, this is a system where a user will be facilitated hopefully

7 References

1 Online Shopping Store Daraz.pk: https://www.daraz.pk/

2 Online Shopping Store AliExpress:
https://www.aliexpress.com/?albbt=Google_7_fbrnd&src=google&acnt=304-410-9721&crea=367988956718&aff_platform=aaf&netw=g&albcp=2068664807&mtctp=e&aff_fcid=855f0094fea446ebbeb3e55894e5ede7-1622388396792-04561-UneMJZVf&gclid=Cj0KCQjw78yFBhCZARIsAOxgSx2SR9cglv-JZyMgQi07CNJ4UzP1UOdCgqQli2bzuGsnHLOmBMfy4z8aAkIiEALw_wcB&albag=79246744747&aff_fsk=UneMJZVf&albch=fbrnd&isSmbActive=false&albagn=888888&isSmbAutoCall=false&sk=UneMJZVf&aff_trace_key=855f0094fea446ebbeb3e55894e5ede7-1622388396792-04561-UneMJZVf&trgt=kwd-464198394164&device=c&terminal_id=1706f86aaa4e4165823c6ccfaf33da59&needSmbHouyi=false

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