SOFTWARE REQUIREMENT SPECIFICATIONS (SRS)

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1.Introduction:

This is a Software Requirements Specification (SRS) for the Efficient Doctor Patient Panel. It describes the functions, goals and tasks that the system can perform. This is used to describe the scope of the project and to plan for the system's design and implementation.

The SRS is technical specification of requirement of Efficient Doctor Patient Panel. This specification describes what the proposed system should do without describing how it will do it. It also describes complete external behavior of the proposed system.

1.   Purpose

The project is about the concept of people being able to utilize an online platform to identify the skin disease they have contracted; this helps the people get an idea of what they have contracted. In times of pandemic situations such as now, many governments and private hospitals are risky places to go and consult a skin doctor. So instead of risking their lives, they can now be able to use the online platform to consult our skin problem to an AI enabled chatbot. The person would be able to upload the image of the disease contracted, which the program would use which has been trained as mentioned and produce the name of the disease.

2.   Document Conventions

During the writing of the SRS, the typographical conventions followed are as follows: - the headings are in Calibri in font size 16, and the sub headings also use Calibri use with font 16, and the description for each of the sections is written in Calibri with font size 14. The header and the footer of the document are in Trebuchet MS font in font size of 10.

3.   Intended Audience and Reading Suggestions

The following document is mainly intended to describe the requirement specification for the whole project in detail. The following document can be referred by the developers if they are wishing to re design the project from a new perspective to make further improvements and it can also be referred those readers those who want to have an over view of the whole project. It can also be used by the university students who want to use the same idea of the project but come up with some new idea for better management of the project. For the sequence of reading, this resource specification is best understood if it is read from the starting by the purpose section up-to the last. If it is specially being referred for the purpose of the development by the developers than they can mainly focus by the heading 3. External Interface Requirements for referring to the things required for the hardware and software specifications, similar pattern can be referred for the deliverables.

4.   Scope

The scope of this project revolves round the developing of an system that stores the data of the patient and helps him with in the recovery of his skin related issues, this portal particularly enables patients to their medical condition of the skin with the help of an advanced chatbot, patient will also be recommended with suitable medicine, can also pay the bills online. By providing these features as well as easy access to online resources, portal provides much more improving management of illness and the customers can also have access to site easy as it is free of cost.

5.   Definition, Acronyms, Abbreviations

CFD :Context Flow Diagram

DFD: Data Flow Diagram

IDE : Integrated Development Environment

Java : Platform Independent Object oriented programming language

SQL : Structured Query Language

SRS : Software Requirement Specification.

Database : Collection of information in a structured form

Logon ID :A user identification number to enter the system

Password :A word that enables one to gain admission into the system

ID : Patient Identification number

GUI : Graphical User Interface

1.6　References

[1]　Maria Christina Barretto, Stefney J. Fernandes, 3Gaurav Bhise, 4Sushreeta Subudhi,5Abdul Rahiman Mulla, Sudin Mamlekar Efficient Doctor Patient Portal May - August 2017.

2.Aishwarya Nandagawali1, Komal Sute2 Prof. Dinesh Gawande3,Online Medical System,Mar-2017.

3.Darekar Rutuja Arun, #2Pandarkar Aarti Anil, #3Shinde Priyanka Milind #4Prof. Bharat Burghate A Medical WEB portal: Effective relationship Management between Patients and Doctors 3rd November 2015.

4.Prof. S. B. Choudhari1, Chaitanya Kusurkar2, Rucha Sonje3, Parag Mahajan4, Joanna Vaz 5," Android Application for Doctor"s Appointment" , (An ISO 3297: 2007 Certified Organization)Vol. 2, Issue 1, January 2014.

2. Overall Description :

1.   Product Perspective

The context of this product is regarding the Online Skin Consultation using Chatbot and Skin Disease prediction and how effectively it helps patients.The origin or the core foundation of this project is the database management system, most of the data regarding skin diseases will be enter into data.The main feature that makes any Online Skin Consultation using Chatbot and Skin Disease prediction reliable is the ability to identify the issues with the patient and also as this is an online based consultation and also free of cost it is easily accessible . We also provide the medication for the disease.

2.   Product Functions

The main function of the product (Online Skin Consultation using Chatbot and Skin Disease prediction) are as follows:

* It gives the information about the patient
* It gives patient flexibility in their time as it is free of cost and easily accessible
* It makes the whole managements system in the form of a web portal
* The Patient can always check his reports and have a conversation with the chat bot
* The customer can also buy the recommended medication online from the portal which will be delivered to given address

2.3   User Classes and Characteristics

User Classes: Target group for utilization of this product:

Main - public, All the people in public/private areas that require doctor facility and pertinent to all the people as all web app elements are catered towards their usage.

4.   Operating Environment

After the website portal is set. The managing the database and the various functions the admin can use operating system like Linux or windows 8 and above, and for the use from the user side the website can be accessed either by an android or an IOS phone having web browsers like Chrome, Safari etc. By the user side the website can also be accessed through the desktop or a laptop having the operating system such as windows 8 and above having browser like Chrome, Safari, Mozilla Fire fox etc.

5.   Design and Implementation Constraints

The following are some of the designs and the implementation constraints limiting the performance the system are as follows:

1.If the hardware used has lower specifications on the admin side then it may cause some problems and delays in the functioning of the system.

2.The operating system being used from the admin side must be up to date and must have the antivirus protection else it will create problems in the functioning of the system, as a whole.

3.For the users if they are using the browsers which are out dated and have not been updated for a long time, then while opening the site might face some issues related to the responsiveness of the website.

2.6   User Documentation

For the user documentation, we are going to provide the user manual, different for the managing team handling the portal and other for the users to help them understand on how to make the best use of the services. Along with it we are also going to provide the description document, the installation and the setup guise and also some of the video tutorial to make them understand the newly adopted system.

3. External Interface requirements:

1. User Interfaces :

All user interfaces of the website follow a simple minimalistic design with flat surfaces and rounded corners, easy to read text – similar to all modern Operating System for familiarity. Main aim of the UI is to allow user to execute max possible actions in less number of mouse clicks or keyboard inputs.

Screen Name	Description
Login	User can login to system with his credentials
Allura studio	Disease Predictor
Allura Shop (Products)	User can shop skin care related products
Lifeline (Chatbot)	User can chat with chatbot with his Queries
Contact Us / Feedback	User can send a message to Admin
Blogs	User can access various health related blogs
About Us	User can view details about creators

2. Hardware Interfaces

Web app suitable to run on any hardware device with compatible web browser. During later large-scale deployment phase, dedicated GPS system can be used in shuttles to provide accurate positioning data.

3. Software / Communication Interfaces

Web browser interface, http/https, for localhost- Apache, PHPMyAdmin (DB interface), MySql local server session(database), later deployment with AWS server space. No operating system restriction. OS used for dev – MacOS and Windows jointly.

4. System Features (Functional Requirements) :

Modules :

1. Login to the account/create an account:

In this module, we have to implement an interface where the user can create an account, and also put an OTP verification, where the user has to verify with it before creating the account. After successfully creating account, then the user can log in into the portal. This structure or system is implemented using HTML, CSS, JavaScript and php.

2. Home page:

this page is loaded when the user wants to access our page/ when the URL of the page is entered. In this page we have provided the user to create an account or login into their account. Apart from that, the user can contact the support team and can get to know about the creators.

3. Dashboard:

the user will be redirected to this page, where the user can chat with the AI enabled bot and can change his credentials or his details. Then the user can access the page where information about various skin diseases are present. Apart from these, the user can access our prediction page, where he/she can upload an image and get the results. the user can contact the support team and can get to know about the creators.

4. Prediction: In this page the user can upload an image of the part of skin/remove the uploaded image and get the results/prediction of the skin disease that she/he might have.

5. Shopping Cart: In this page if the user choose to buy the medicine from our website, they can search and add the medicine to their cart for purchase as per the prescription from the prediction page

6. Talk to our chatbot: AI assistant bot will be available to chat on every page where the user can interact with it.

7. Give feedback / Contact: contact details will be provided so that the user can contact the administrator if any issue is faced

We plan to use : HTML, CSS, JavaScript and jQuery for the web page design (front end), PHP for the backend, SQL for the database. We plan to use Natural Language Processing(python) for the chatbot creation and Google's Teachable Machine for the generation of the skin disease detection algorithm.

We believe this project will not only be able to help us obtain a good idea on working fluently with HTML, CSS but also in other languages and concepts as well.

Functional software requirements for dev:

- Programming Language used are JS, HTML, CSS, PHP, MYSQL.
- Code editors: Sublime text, VSCode, Xcode.
-Web Browsers used during testing: Edge(Chromium), Chrome(Chromium), Firefox(Gecko), Edge(EdgeHTML), Safari(WebKit).

5. Non functional requirements:

1. Performance Requirements:

The ability of the computer depends on the software performance. The software can take any number of inputs provided the database size is larger enough. This would depend on the available memory space.

Assumptions:

- The response time for making a change will not be more than 4 seconds and for accessing the database will not be more than 5 seconds.
- If any update or change is made by by admin it will be synchronized quickly.
- It will respond quickly while accessing the database
- For example ,If a doctor wants to check a particular patients database and his details it is done at an ease.
- We strongly assume that it will give multiple data accessing without any issues.
- Our system will be available 24 * 7.
- It provides a better efficient and high technology based system for better society.

2. Security Requirements:

Non-functional requirements mainly focus on security reliability and performance.

Safety Requirements :

The database may get crushed at any certain time due to virus or operating system failure. There for it is required to take the database backup so that the database is not lost. Proper UPS/ Inverter facility should be there in case of power supply failure.

Security Requirements :

- System will use secured database.
- Normal users can just read information, but they cannot edit or modify anything.
- System will have different types of users and every user has access constraints.

- Proper user authentication should be provided and thereby no data leakage.

5.3 Software Quality Attributes

1) Usability:

-the user shall be able to access the system over the internet.

-effective GUI will be developed to better facilitate the users.

-help manual will be made available to dev and consumer.

2) scalability:

-post deployment architecture should facilitate any scaling requirement

-the software must be able to dynamically alter/add data without much change to the system.

3) Storage:

Cloud space:

5Gb ~ upgradable

AWS EC2 limit : 750 hours

Software Design Specification (SDS)

Module Decomposition :

1. Login to the account / Create an account: In this module, we have to implement an interface where the user can create an account, and also put an OTP verification, where the user has to verify with it before creating the account. After successfully creating account, then the user can log in into the portal. This structure or system is implemented using HTML, CSS, JavaScript and php.

2. Homepage: this page is loaded when the user wants to access our page/ when the URL of the page is entered. In this page we have provided the user to create an account or login into their account. Apart from that, the user can contact the support team and can get to know about the creators.

3. Dashboard: The user will be redirected to this page, where the user can chat with the AI enabled bot and can change his credentials or his details. Then the user can access the page where information about various skin diseases are present. Apart from these, the user can access our prediction page, where he/she can upload an image and get the results. the user can contact the support team and can get to know about the creators.

4. Prediction (Allura Studio): In this page the user can upload an image of the part of skin/remove the uploaded image and get the results/ prediction of the skin disease that she/he might have.

5. Shopping Cart (Allura Shop): In this page if the user choose to buy the medicine from our website, they can search and add the medicine to their cart for purchase as per the prescription from the prediction page.

6. Talk to our chatbot (Lifeline): AI assistant bot will be available to chat on every page where the user can interact with it.

7. Give feedback/contact: contact details will be provided so that the user can contact the administrator if any issue is faced

8. About the creators: this page has the details of the creators.

Concurrent Process Decomposition :

The Online skin consulation using chatbot and skin disease predictor consists of two major parts:

1)Allurastudio (Skin Disease Predictor) : The patient can upload a photo of his skin issues which he is suffering with in our Allura studio to get the name of the skin disease he is suffering with within 5 seconds.

2)Lifeline (Chatbot): Customers / Patients can ask their queries about any skin related issues and also information about our website and can get relevant answers.

3)Allurashop (Products) : Customers / Patients can avail to a variety of skin products, medicines.

Data Decomposition :

The following are the major components: Login , Allurastudio (Skin Disease Predictor), Lifeline (Chatbot), Allurashop (Products)

Login: User can create an account in our website which stores his details into the database such as :

- First Name
- Last Name
- Email
- Password

Allurastudio (Skin Disease Predictor): This is an automated application which is linked to google teachable machine to predict the skin

disease and it contains the database that contains the following data items;

- Uploaded Image Details
- Skin Disease details

Lifeline (Chatbot): In this module The response to the question will be replied

based on the user query and knowledge base. The significant keywords are fetched from the sentence and answer to those sentences. If the match is discovered or the significant answer will be given, or similar answers will be displayed. This contains database :

- Query Data
- Knowledge Database (Answers)

Allurashop (Products): This module contains skin related products and database such as :

- Product Details
- Product Image
- Product Price
- Quantity

The following modules are independent and do not rely on any other modules to initiate them or to provide data.

- Blogs Module
- About Us Module
- Contact Us Module

Dependent Modules:

The following modules are dependent on one another for their functioning :

- Lifeline (Chatbot)

- AlluraStudio (Skin Disease Predictor)
- Allurashop (Products)

Data Dependencies :

The following Data Flow Diagram shows the data dependencies between the various entities and modules.
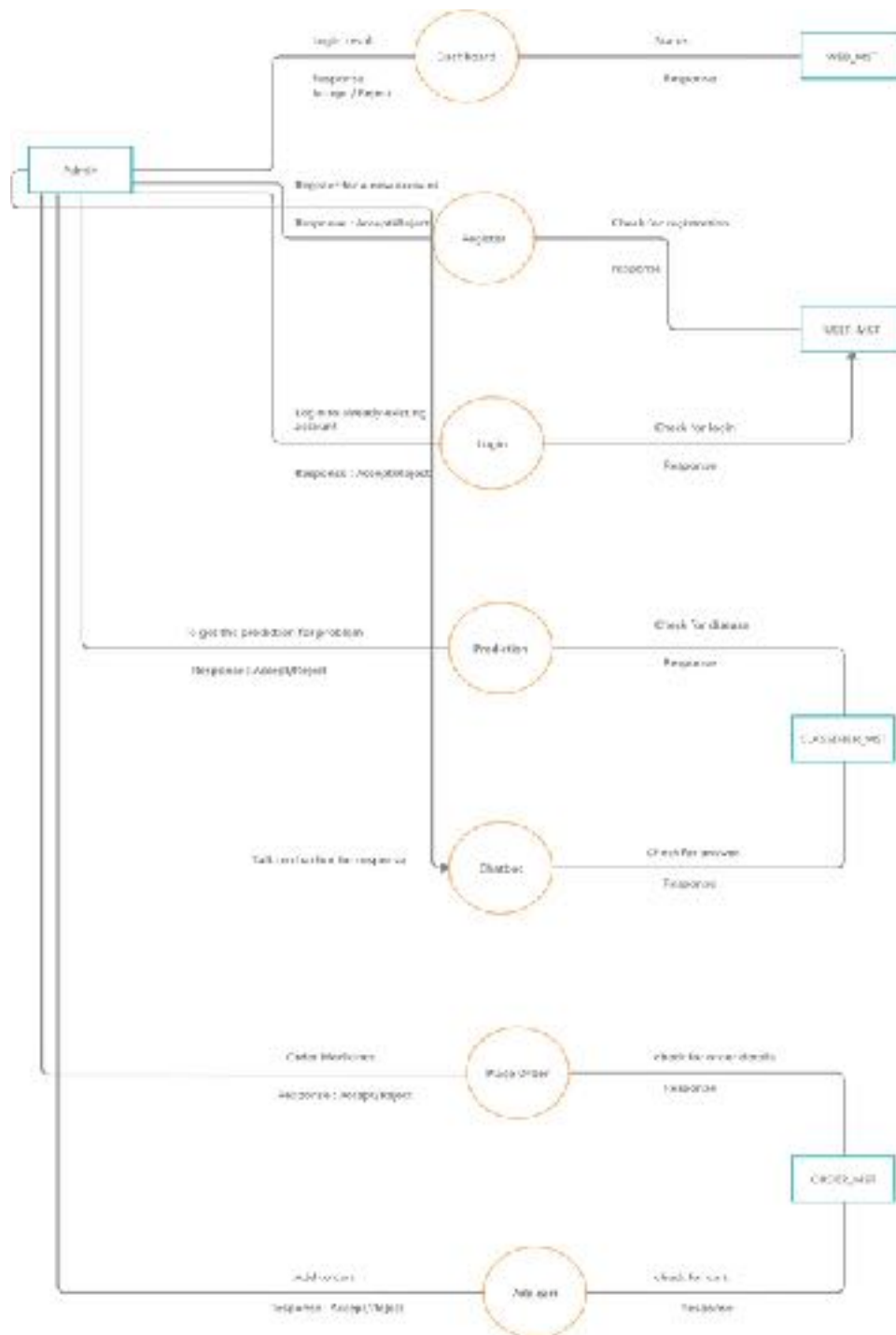
Interface Description

Module Interface (Graphical User Interface – GUI) :

Signup / Registration module interface design

- User clicks on the Login Here/Create Account link and then on Register now link
- A form appears which prompts the user to fill his/her:
  1. First Name
     2. Last Name
     3. Email Address
     4. Password
- After filling the details click on register which submits the form
- The details go the Database
- Now the user can login to the website using his credentials.
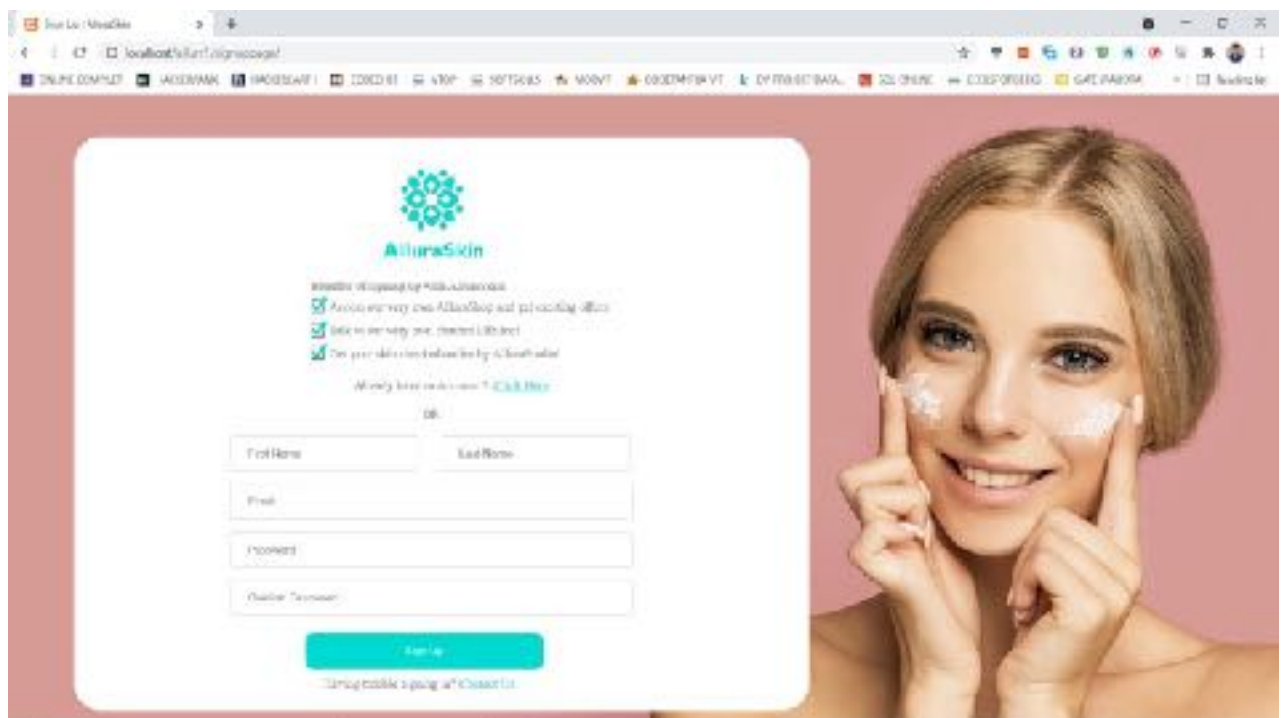
Login module interface design:

- A user can login using a form which appears on main page that prompts the user to fill his/her: 1. Email Address 2. Password

- After filling the details click on sign in which submits the form

- The details go the admin accordingly

- The Post method redirects the details entered by the user with database and grants him access to the dashboard of the website
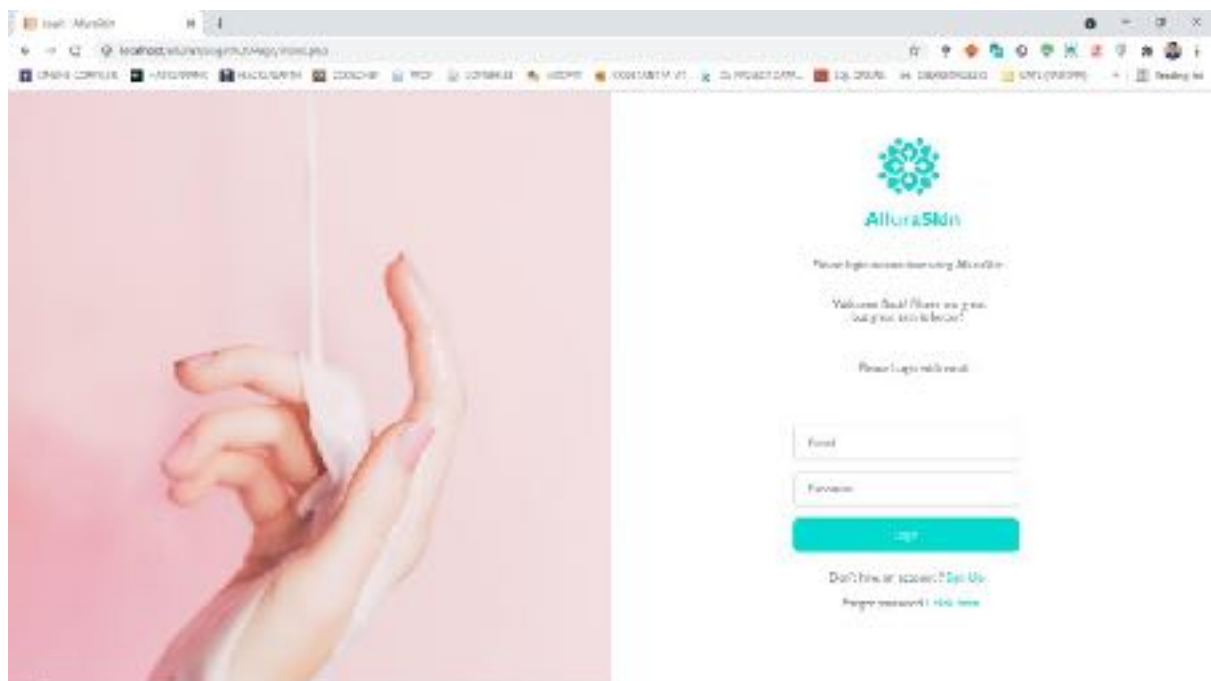
DashBoard :

- This is the home page of our website in which a user can freely access through all the modules involved through the dashboard.

- User can see the details of our website.

- User can be redirected to the respective pages.

- He can also subscribe to our website by entering his mail address.

- User can also access the lifeline (chatbot) from this home page.

Healthy life with AlluraSkin

Beauty and Wellness that works! Start getting results you deserve.

Explore Now

Welcome to AlluraSkin

Your online destination for wholesome skincare.

AlluraStudio

Know more

AlluraShop

Know more

Lifeline

Know more

Proudly presented by

·greenery·

The products available in their shop are truly organic and effective. I have already replaced all my skincare products with Allure.

Lifeline (Chatbot) Interface :

- User clicks on the chat button on the bottom right of our page

- Then a chat bot interface appears.

- The interface prompts the user to ask about any skin related issues or details of our page.

- After entering his query chatbot access the database and gives answer.

- The response to the question will be replied based on the user query and knowledge base which is linked to IBM Watson database.

- The significant keywords are fetched from the sentence and answer to those sentences.

- If the match is discovered or the significant answer will be given, or similar answers will be displayed.
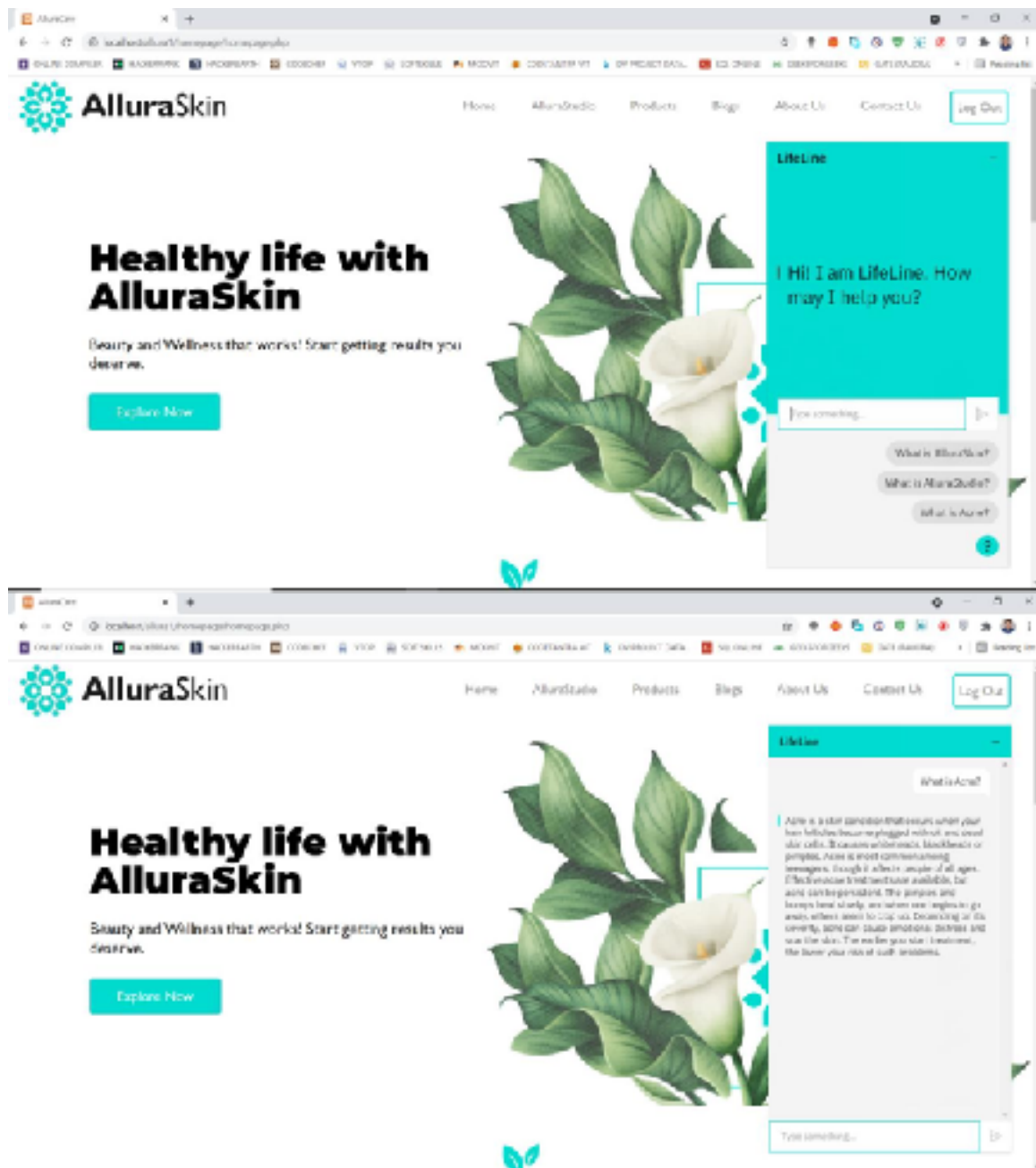
Allurastudio (Skin Disease Predictor) Interface :

- User clicks on the allurastudio button on the dashboard.

- He is redirected to a page which prompts the user to upload an image of his skin disease.

- After uploading the image he can click on predict button

- Then the image is scanned from the google teachable machine database.

- Then a relevant skin disease is predicted and displayed within 5 seconds.
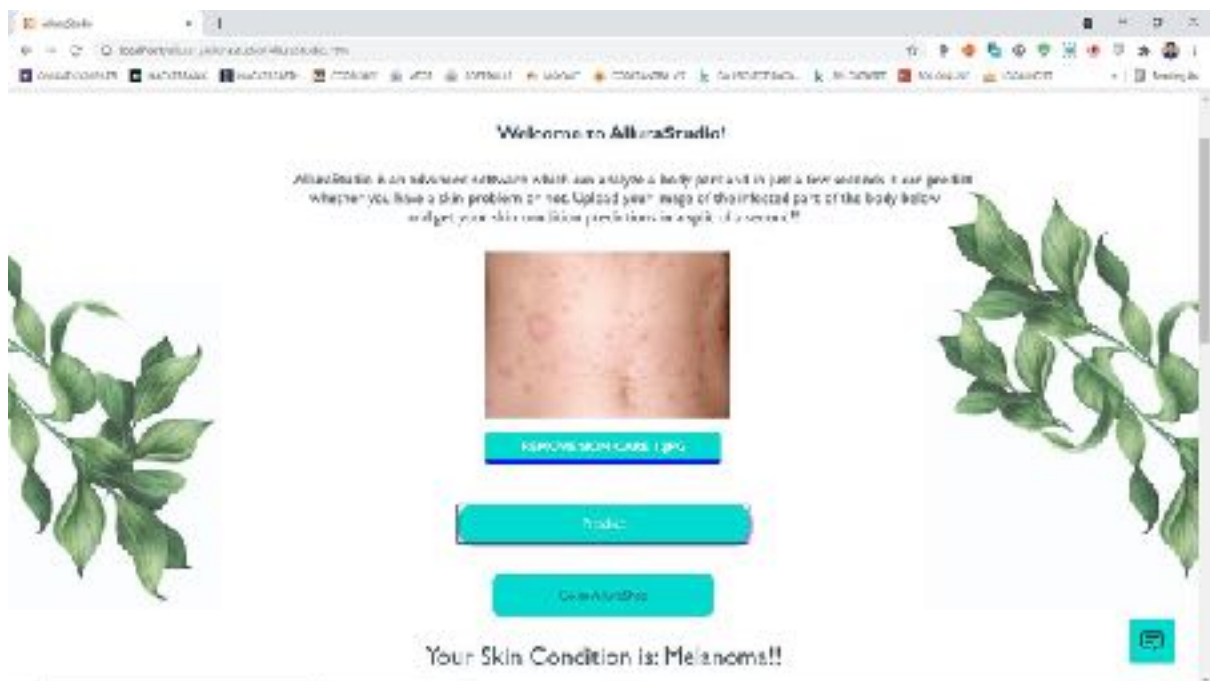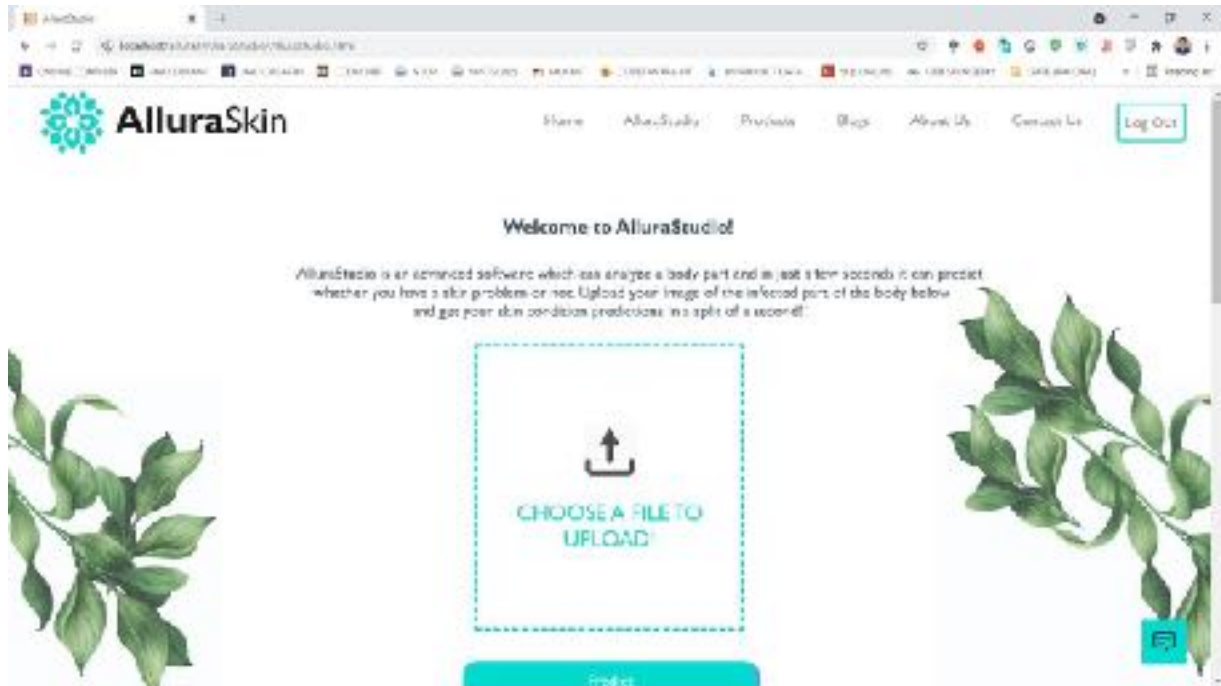
Allurashop (Products) Interface :

- User clicks on the Products (Allurashop) button on the dashboard.
- He is redirected to a page which has various skin care products medicines
- The user can select a particular product its quantity and add to cart.
- Then the user is redirected to his cart page where he can see the price details.
- The user can also delete a particular product from his cart
- He can also freely move to product page from the cart page.
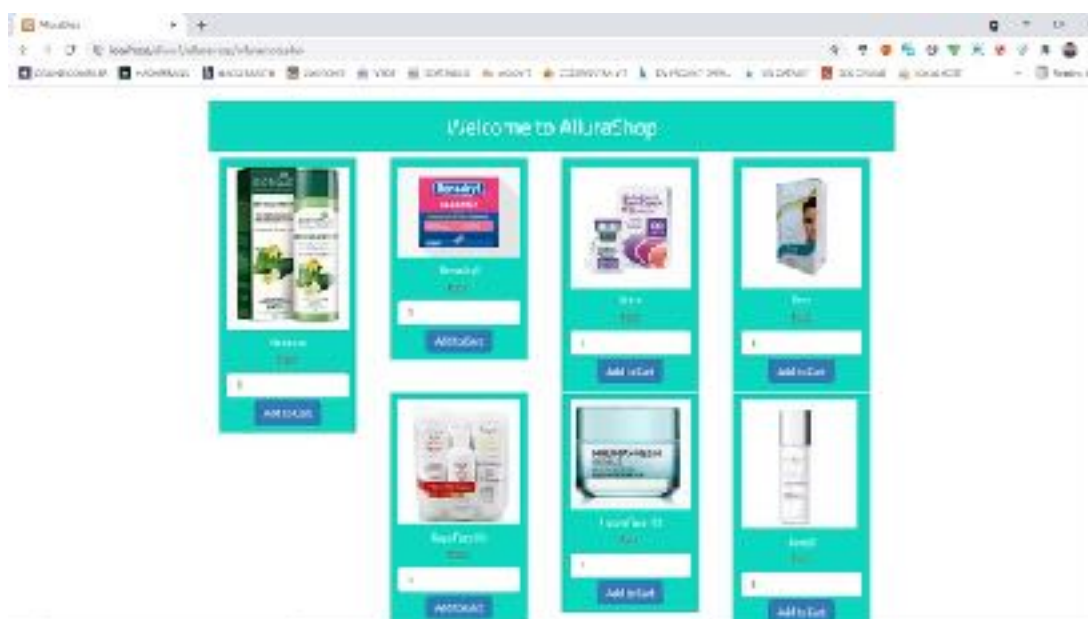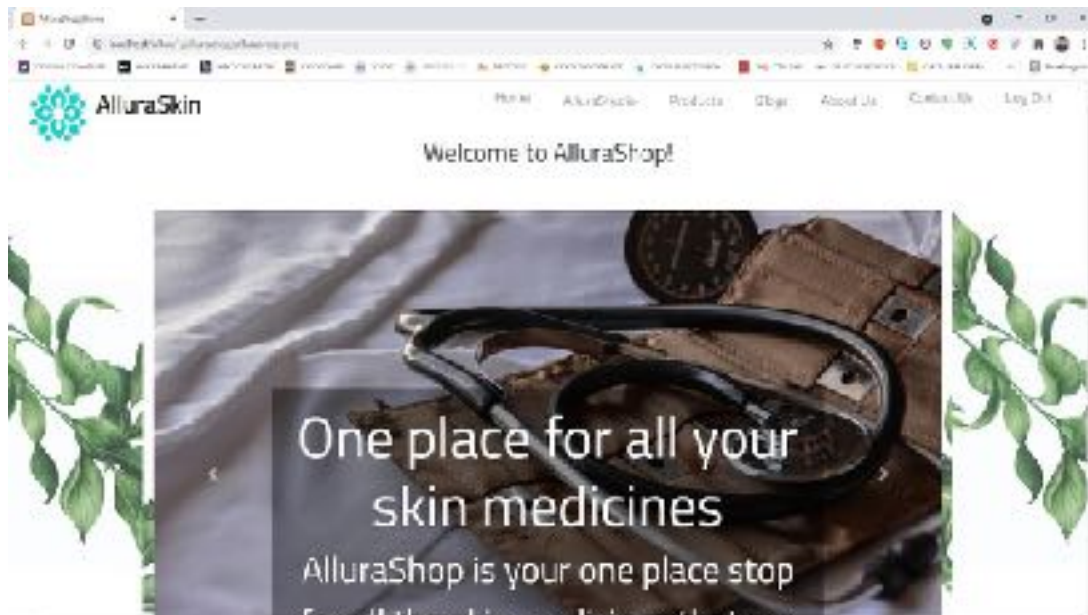
Go back to Main Page

Blog Interface :

- User clicks on the Blogs button on the dashboard.
- Then the user is redirected to blogs page which has information about various skin diseases, health updates and recent medication trends.
- The user can freely access all the blog pages.
- He can also search through the blogs using a keyword.
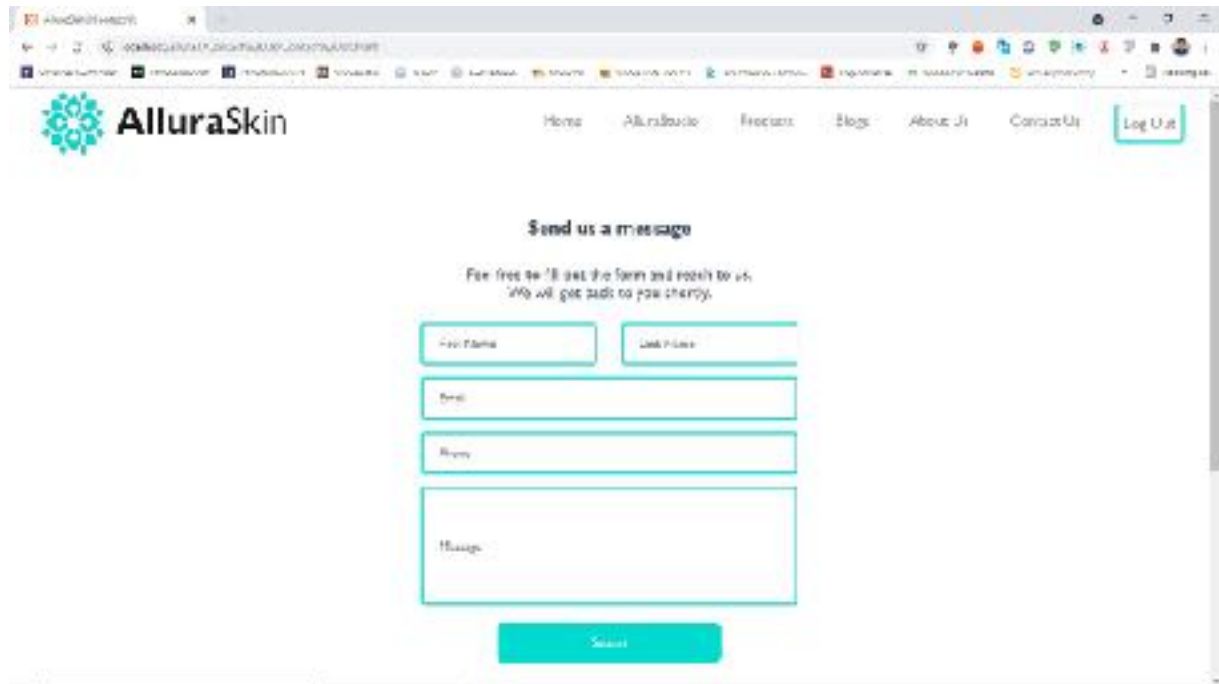
About Us Interface:

- The User clicks on the About Us button on the dashboard.
- Then the user is redirected to a page which has details about the creators along with their contribution.
- He can also view their details, photos.
- He can also send a mail to the creators.
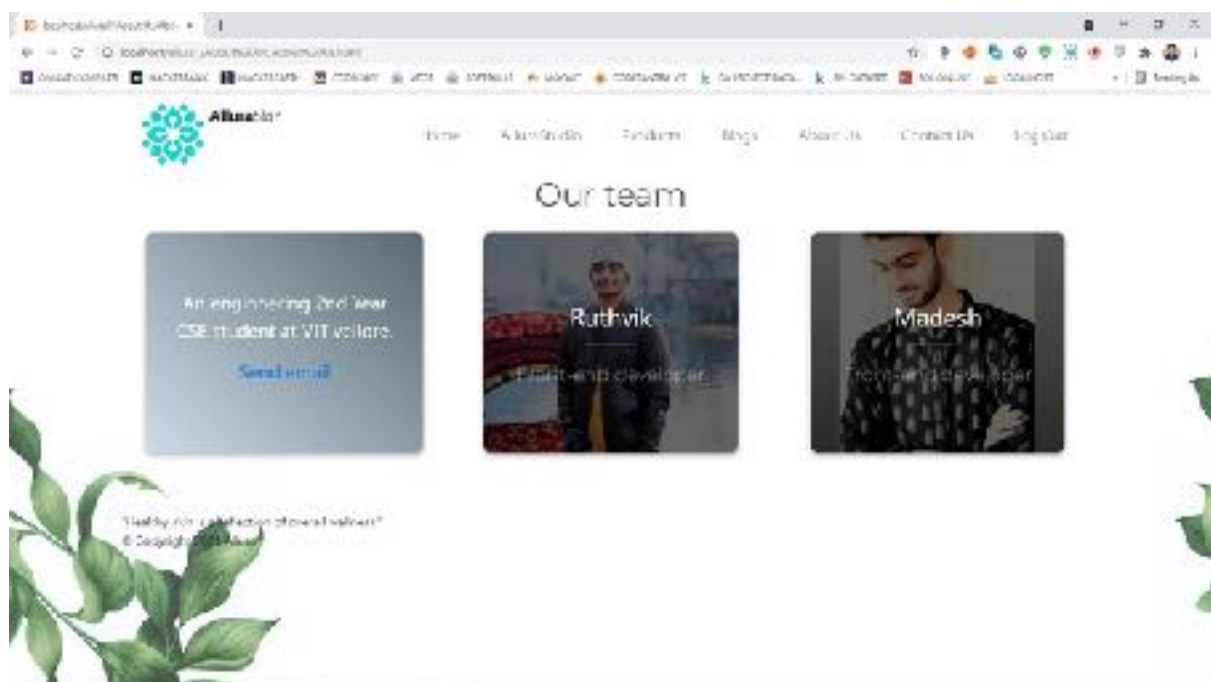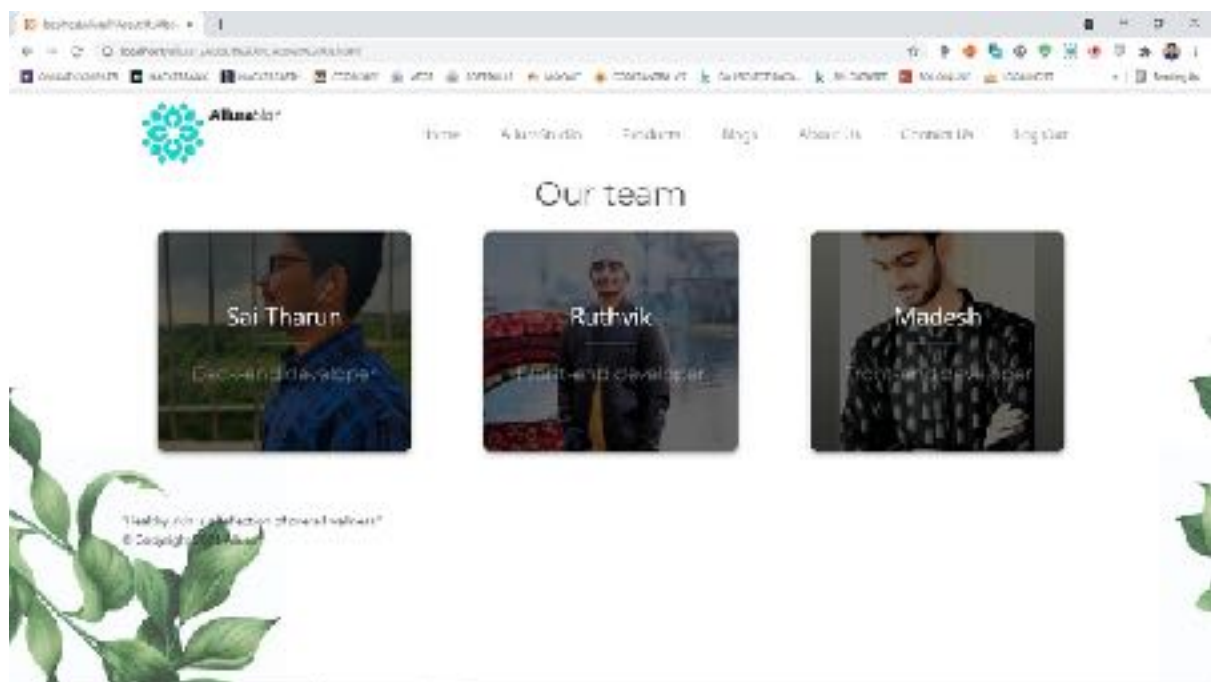
Contact Us Interface :

- The User clicks on the Contact Us button on the dashboard.
- Then the user is redirected to a page which has form to fill feedback about the website and submit.
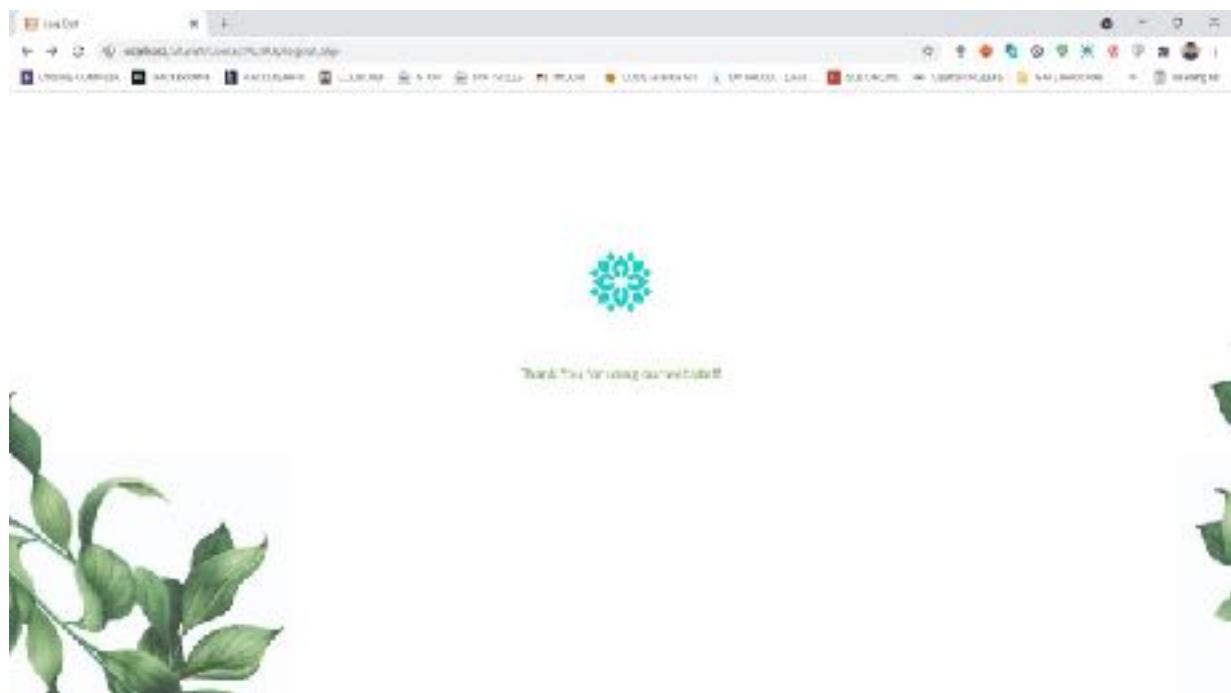
Work Breakdown Structure :
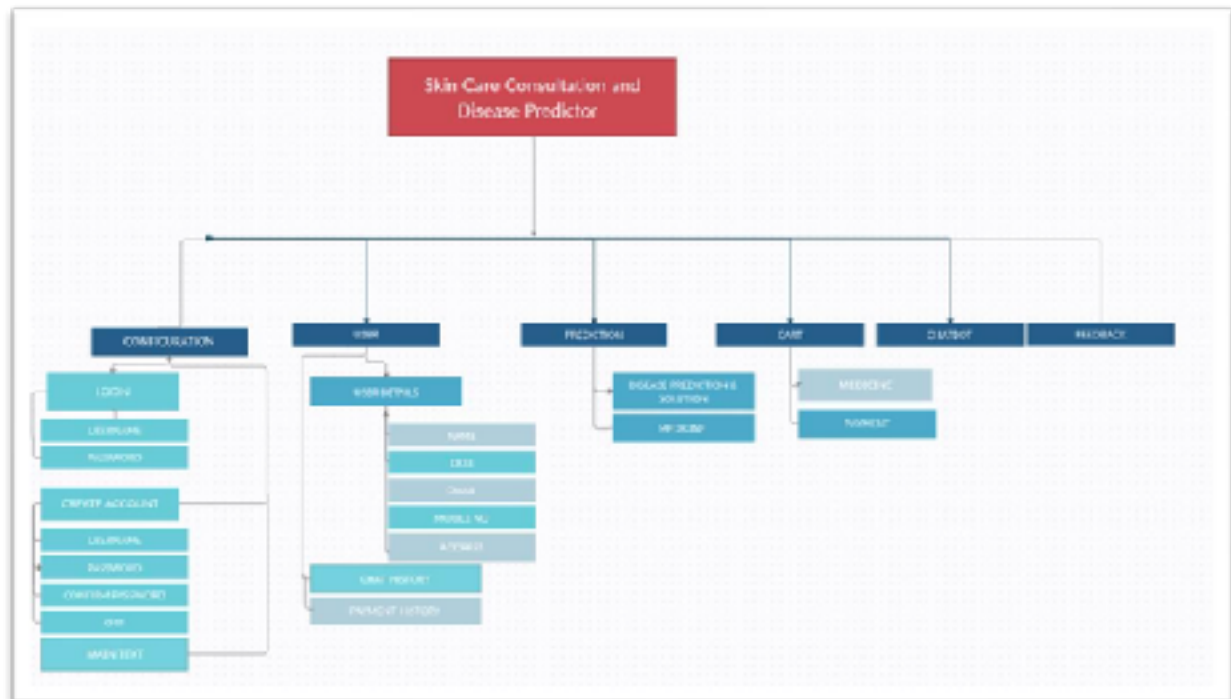
Internal Stakeholders :

- Project Developers
- Internal Doctors of a hospital / System
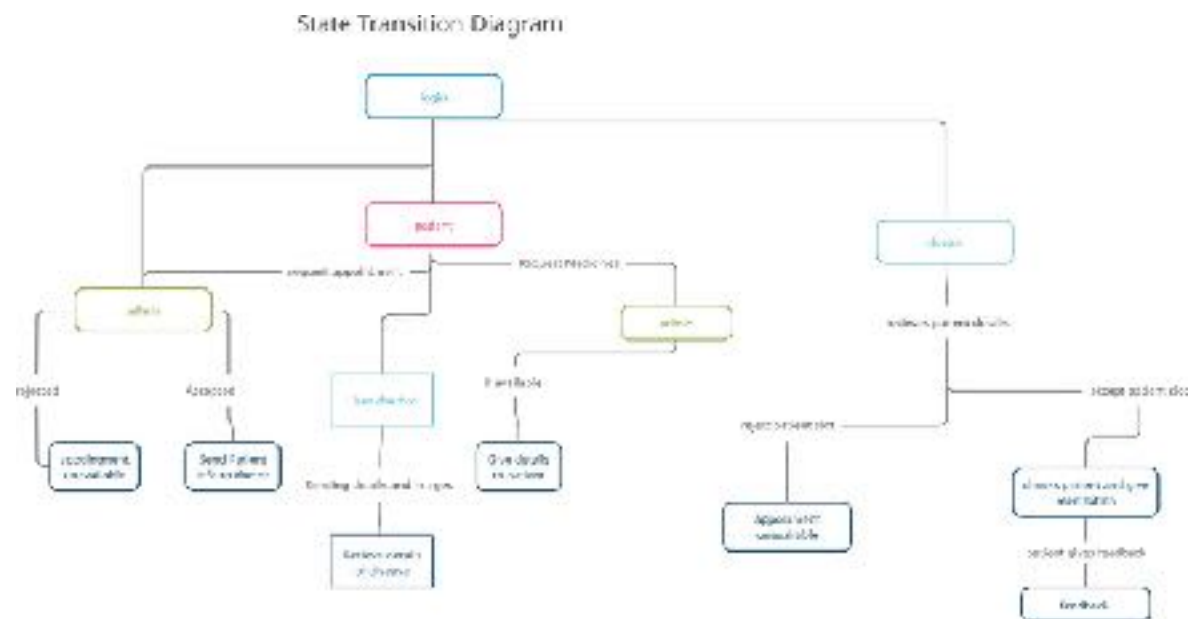- System Admin : has full privilege on the system's functions

External Stakeholders :

- Social Media
- TV Channels
- Advertisements
- NGOs tied up with the system
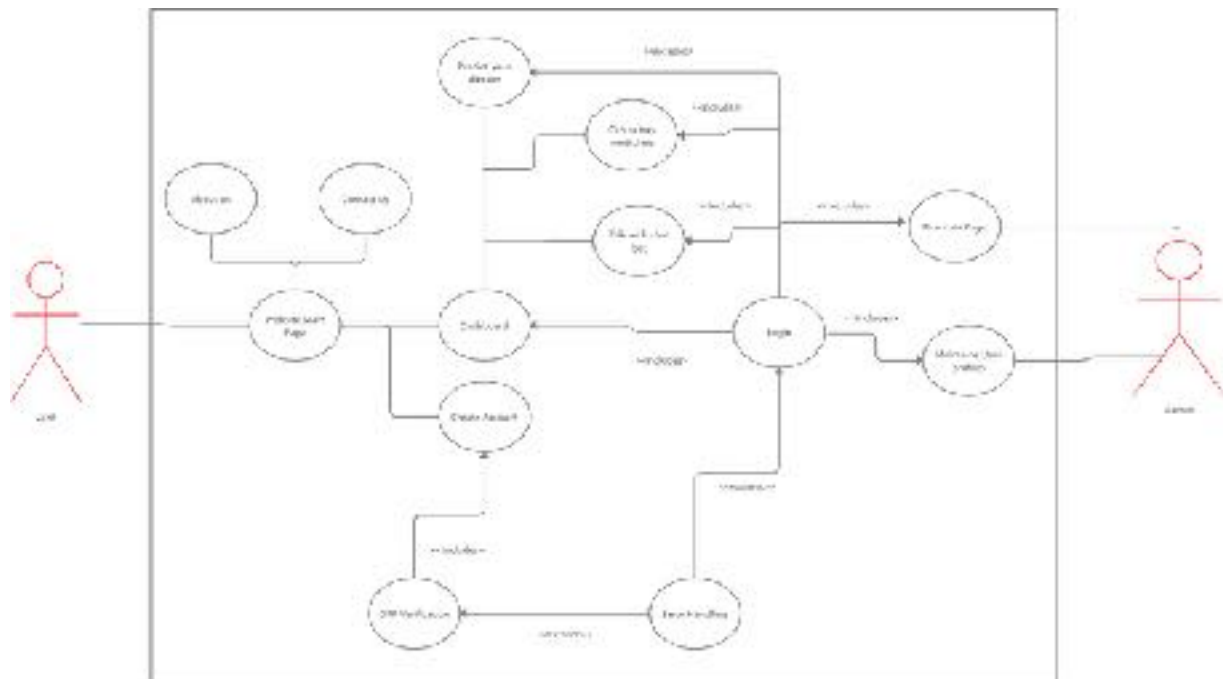- End users (Patients)

UML DIAGRAMS

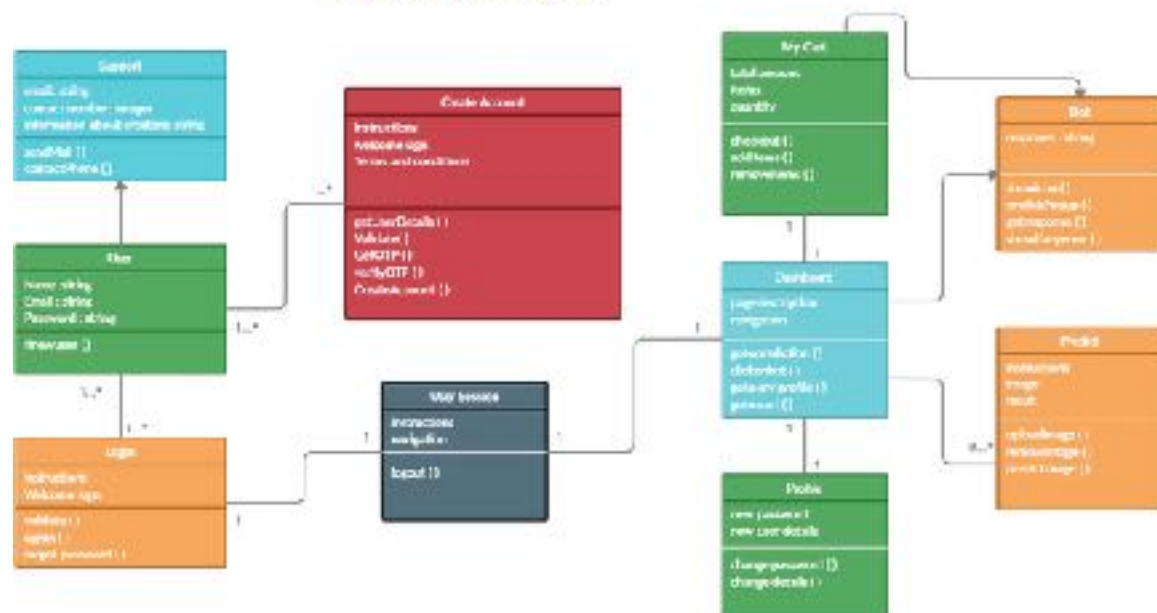## ER DIAGRAM:

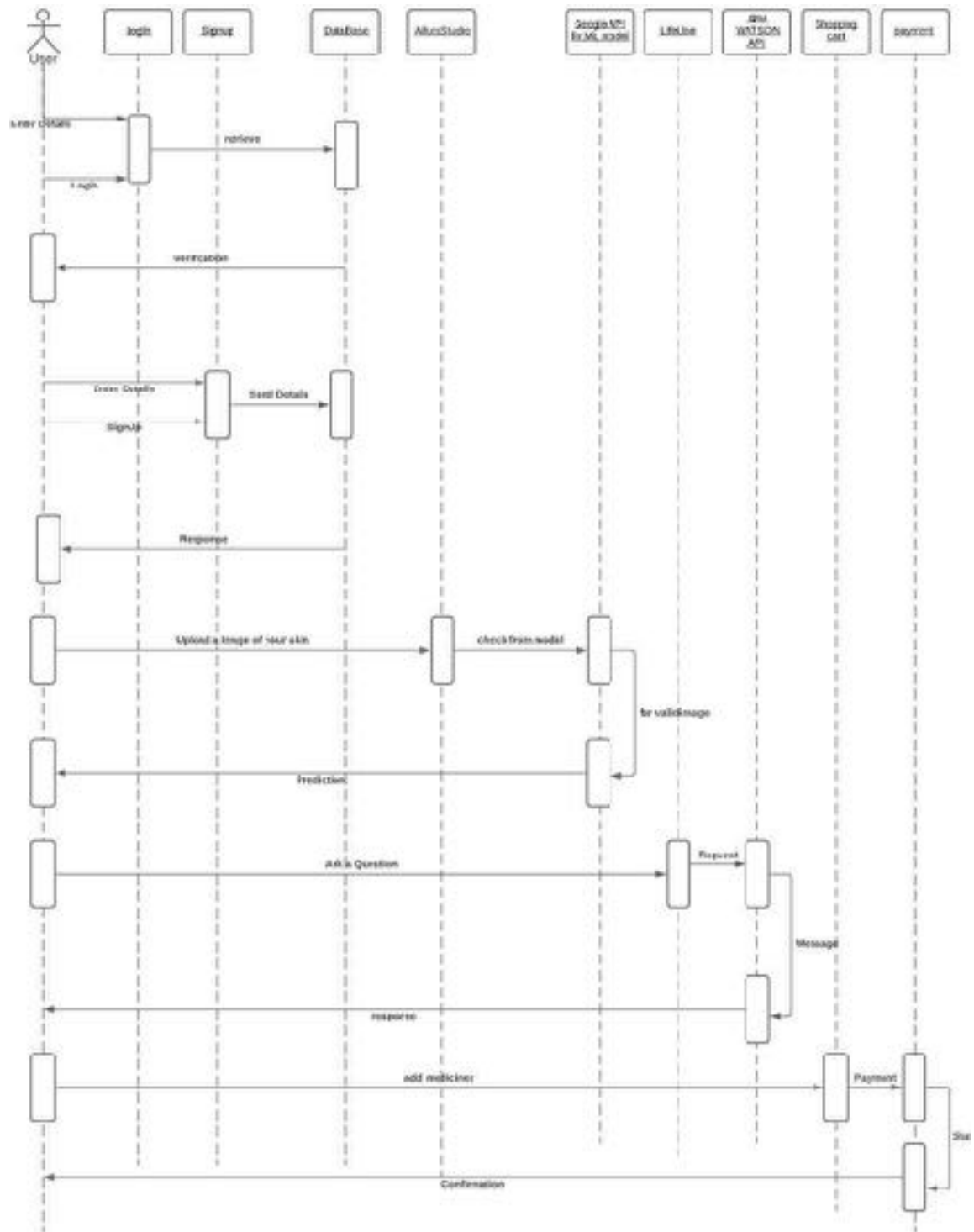## STATE TRANSITION DIAGRAM:
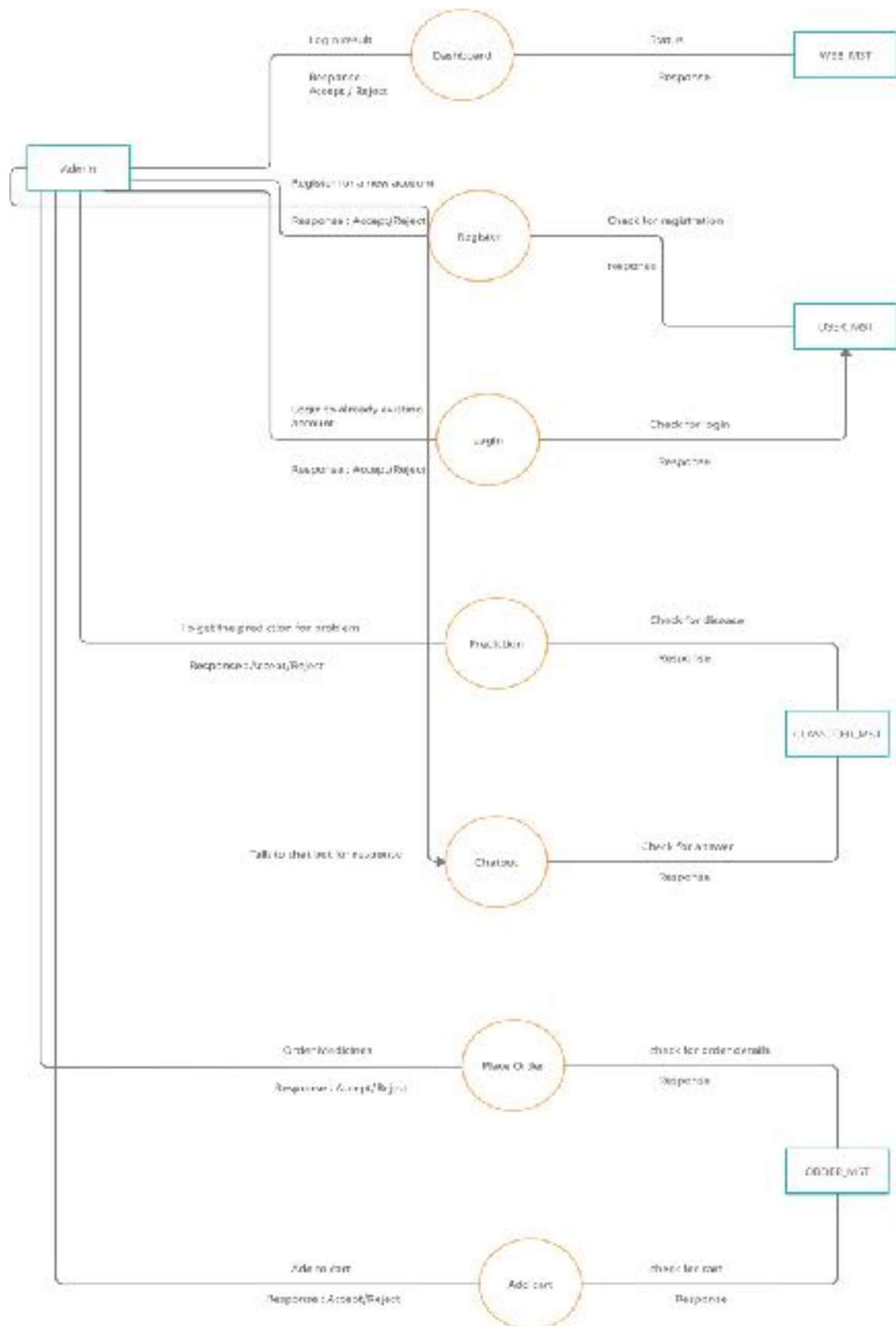
USE CASE DIAGRAM:

CLASS DIAGRAM:

ACTIVITYDIAGRAM:

SEQUENCE DIAGRAM:

DATA FLOW DIAGRAM:

TEST CASES

Test Case ID	Test Scenario	Test Steps	Test Data	Expected Results	Actual Result	Pass /Fail
TU01	Check Customer Registration if he is a new user	• Go to website • Enter Details • Click Submit	mail : sai@gmail.com Password : sai	Account Created Successfully	As expected	Pass
TU02	Check if password and confirm password does not match	• Go to website • Enter Password • Enter Confirm Password	Password : sai Confirm password: sai123	Password does not match	As expected	Pass
TU03	Check if customer already exists	• Go to website • Enter details • Click submit	mail : sai@gmail.com	Account already exists	As expected	Pass
TU04	Check Customer Login with valid Data	• Go to website • Enter login details • Click Submit	mail : sai@gmail.com Password : sai	User should Login into the website	As expected	Pass
TU05	Check Customer Login with In-valid Data	• Go to website • Enter login details • Click Submit	mail: sai@gmail.com Password = hello	User should not Login into an application -Check your credentials	As expected	Pass
TU06	Check skin predictor if valid image is uploaded	• Go to website • Go to Allura studio • Upload Image • Click Predict	Uploaded Image : related to skin diseases.	User will get the predicted disease	As expected	Pass
TU07	Check skin predictor if Invalid image is uploaded	• Go to website • Go to Allura studio • Upload Image • Click Predict	Uploaded Image : Random Image	User will not get any details	As expected	Pass

TU08	Check if a correct Query is entered in chatbot (Lifeline)	• Go to website • Go to Lifeline (chatbot) • Ask Query	Query : What is Acne ?	Acne is a skin condition that occurs when hair follicles plug with oil and dead skin cells.	As expected	Pass
TU09	Check if invalid Query is entered in chatbot (Lifeline)	• Go to website • Go to Lifeline (chatbot) • Ask Query	Query : What is Bitcoin ?	Sorry I could not get you.	As expected	Pass
TU10	Check if product is removed from cart if we click delete item	• Go to website • Go to Products (Allura shop) • Add item • Delete item	Delete item	Product has been removed successfully	As expected	Pass
TU11	Check if page is redirected to login page after logout	• Go to website • Enter login details • Click Submit • Click Logout	mail : sai@gmail.com Password : sai Logout	User is Redirected to Login Page	As expected	Pass
TU12	Check if total value is calculated for products in cart	• Go to website • Go to Products (Allura shop) • Add items	Add Products Benadryl – 200 Botul - 300	Total value is 500	As expected	Pass

CONCLUSION:

The final result of our project is full working website of Online skin consultation using chatbot (Lifeline), skin disease predictor (Allura Studio) and Products (Allura shop). During this COVID pandemic, it is very risky to go to clinic to get checked for some small skin problems that can be cured at home.So users can use our website to get the desired results and necessary medication.

The future enhancement of this project goes as follows: A chat portal can be implemented where the user can talk to the doctor through our website. chat page can also be enhanced to add a video call feature, where doctor can check the skin condition and give the medication accordingly