

**Vellore Institute of Technology
School of Computer Science and Engineering**

Software Engineering

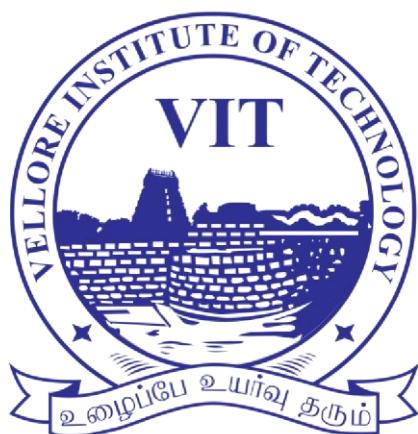
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PROJECT ON

HOSPITAL MANAGEMENT SYSTEM



-BY

SHREYA GUPTA

ACKNOWLEDGEMENT

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Place – Vellore

Date- 27.03.2025

Team Members

1. Shreya Gupta

Signature of Supervisor

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INTRODUCTION:

A **Hospital Management System (HMS)** is designed to simplify and digitize various hospital operations, ensuring better organization and efficiency. Many hospitals still rely on manual processes for handling patient records, scheduling appointments, and managing staff, which can lead to misplaced data, scheduling conflicts, and administrative delays. A digital HMS helps address these issues by providing a centralized platform to manage hospital activities more effectively.

This system includes features such as **appointment scheduling, patient record management, staff and doctor information handling, and a contact portal** for seamless communication. Additionally, a **Skin Disease Predictor** is integrated into the system, allowing users to get a preliminary assessment of skin conditions before visiting a specialist.

By transitioning from manual to digital processes, the HMS improves hospital workflow, enhances patient experience, and reduces paperwork. It ensures that information is easily accessible, minimizes errors, and helps medical professionals focus more on patient care rather than administrative tasks.

ABSTRACT:

Hospital management involves multiple tasks, including patient record maintenance, appointment scheduling, staff coordination, and communication between doctors and patients. Traditionally, these processes are handled manually, which can lead to inefficiencies such as misplaced records, appointment delays, and administrative burdens. To address these challenges, this **Hospital Management System (HMS)** provides a **centralized digital platform** that automates and streamlines hospital operations.

The system includes essential features such as **patient registration, appointment booking, medical record storage, staff and doctor management, and a contact portal** for seamless communication. Additionally, a **Skin Disease Predictor** is integrated to assist patients in obtaining a preliminary assessment of skin conditions before consulting a doctor. This predictive model utilizes an image-based dataset to analyze symptoms and provide an initial diagnosis, offering users a convenient way to check for potential concerns.

By digitizing hospital processes, the HMS enhances accessibility, reduces errors, and improves overall efficiency. The system ensures that patient data is securely stored and easily retrievable, minimizing the risk of information loss. Furthermore, automated appointment scheduling reduces wait times and enhances the patient experience. **The HMS serves as a comprehensive solution for modern healthcare facilities**, aiming to improve operational workflow and deliver better healthcare services.

SRS (as per the earlier format circulated)

1. INTRODUCTION:

1.1 Purpose-

The purpose of this project is to develop a web-based Hospital Management System (HMS) to streamline hospital operations, enhance patient management, and improve appointment scheduling. The system enables hospitals to digitally store patient records, manage doctor and staff information, schedule appointments, and facilitate communication between patients and healthcare providers. Additionally, it includes a Skin Disease Predictor, allowing users to get an initial assessment of skin conditions before consulting a specialist.

1.2 Intended audience-

End Users: Patients, doctors, hospital staff, and administrators who require an efficient system for managing appointments, records, and communication.

Stakeholders: Instructors evaluating the project, healthcare professionals providing feedback, and users interacting with the system for medical services.

1.3 Project Scope-

This project aims to provide essential hospital management features, focusing on:

- **Patient registration and medical record management** to securely store and retrieve patient data.
- **Appointment scheduling system** for easy booking and management of doctor visits.
- **Doctor and staff management** to organize hospital workforce information.
- **Contact and communication portal** to enable seamless interaction between patients and hospital staff.
- **Skin Disease Predictor** for preliminary diagnosis based on image analysis.
- **User authentication and security features** to ensure data privacy.
- **A web-based application** accessible via any modern browser for ease of use and accessibility.

2. OVERALL DESCRIPTION:

2.1 Product perspective-

This web-based **Hospital Management System (HMS)** will be developed using the following technologies:

- **Frontend:** HTML, CSS, and JavaScript for creating a responsive and user-friendly interface.
- **Backend:** MySQL for data storage, user authentication, and real-time database management.

2.2 User interface-

Login: Allows users to authenticate themselves by entering their credentials.

- **Fields:** Email, Password
- **Features:**
 - "Forgot Password" link for resetting credentials
 - Basic validation for required fields and valid email format
 - Error message display for incorrect login attempts

Register: Enables new users (patients) to create an account.

- **Fields:** Name, Email, Password, Confirm Password
- **Features:**
 - Validation for required fields and password strength
 - Email verification for secure account creation

Main Page: Serves as the homepage of the system.

- **Features:**
 - Overview of hospital services
 - Navigation to other sections

Appointment Page: Allows patients to book an appointment.

- **Fields:** Name, Email, Doctor Selection (dropdown), Appointment Date & Time
- **Features:**
 - Displays available slots
 - Confirmation message upon successful booking

Contact Us Page: Allows users to reach out to the hospital for inquiries.

- **Fields:** Name, Email, Message
- **Features:**
 - Sends inquiries to hospital administration via email
 - Displays hospital contact details

About Us Page: Provides information about the hospital.

- **Features:**
 - Details about hospital history, mission, and services
 - Team or staff information

2.3 System interface

The Hospital Management System (HMS) will use MySQL as the database for storing and managing user data, appointments, and other essential records.

2.4 Constraints, assumptions and dependencies-

Constraints

- Limited to desktop browsers in this version; mobile responsiveness may be limited.
- Relies on MySQL database for storage, requiring a server environment to operate.
- Appointment availability depends on predefined doctor schedules.

Assumptions

- Users will enter accurate details when booking appointments or submitting queries.
- A stable internet connection is available for users to access the web-based system.
- Admins will regularly update doctor availability and appointment statuses.

Dependencies

- MySQL for database storage and management.
- PHP (or any backend framework you're using) for server-side operations and database interaction.
- HTML, CSS, JavaScript for frontend development.

2.5 User characteristics-

Primary Users: Patients, hospital staff, and administrators.

Patients: Individuals of all ages booking appointments, making inquiries, or accessing basic hospital services.

Administrators: Hospital management overseeing system operations and maintaining records.

Technical Skills: Users have basic computer literacy, including navigating websites and filling out forms.

Access Mode: The system is primarily accessed via **desktop or laptop browsers**, with potential for future mobile compatibility.

3. FUNCTIONAL REQUIREMENTS:

3.1 Actors-

Primary Actor:

Patient:

- Books appointments with doctors.
- Views their appointment history.
- Contacts the hospital for inquiries.

Supporting Actor:

System

- Handles authentication and security.
- Stores and retrieves patient and appointment data.
- Sends notifications for appointment confirmations or reminders.

3.2 Actions-

Book Appointment:

- Patients select a doctor and available time slot.
- System verifies availability and confirms the booking.

View Appointments:

- Patients view their upcoming and past appointments.
- Doctors check their scheduled appointments for the day.

Manage Patient Records:

- Doctors update patient medical history and prescriptions.
- Admins maintain records for hospital management.

Cancel or Reschedule Appointment:

- Patients can request cancellations or changes.
- System notifies doctors and updates availability.

Send Notifications:

- System sends appointment reminders to patients via email/SMS.
- Alerts for appointment confirmations, cancellations, or follow-ups.

Login & Authentication:

- Patients, doctors, and admins log in using secure credentials.
- System ensures role-based access to relevant data.

3.3 Object-

Patient Data:

- Name: Full name of the patient.
- Age: Patient's age (numeric).
- Medical History: Past and current medical conditions.
- Contact Information: Phone number and email for communication.

Appointment Data:

- Patient Name: Name of the person booking the appointment.
- Doctor Assigned: Name of the doctor assigned.
- Date & Time: When the appointment is scheduled.

3.4 Qualifier-

Validation Rules:

Patient name must only contain alphabetic characters.

Age must be a numeric value and greater than 0.

Appointment date must be in **YYYY-MM-DD** format.

Contact information must be a valid phone number or email.

Doctors can only be assigned appointments during their availability.

Error Handling:

If incorrect login credentials are entered, display "**Invalid Username or Password.**"

If an appointment slot is unavailable, show "**Selected time is already booked.**

Please choose another slot."

Ensure that all required fields are filled; otherwise, display "**Please complete all fields before submitting.**"

4. USE CASES:

Use Case 1: Login

Actor: User (Patient, Doctor, or Admin)

Description: Allows users to securely access their accounts.

Steps:

- User enters email and password.
- System validates credentials.
- On success, user is redirected to the appropriate dashboard (Patient, Doctor, or Admin).
- On failure, an error message is displayed.

Use Case 2: Book Appointment

Actor: Patient

Description: Enables patients to schedule an appointment with a doctor.

Steps:

- User selects the "Book Appointment" option.
- User selects a doctor, date, and preferred time slot.
- System validates availability.
- Appointment is saved in the database, and confirmation is shown.

Use Case 3: View appointments

Actor: Patient, Doctor, or Admin

Description: Allows users to view scheduled appointments.

Steps:

- User selects the "View Appointments" option.
- System retrieves scheduled appointments.
- Data is displayed in a tabular format (sortable by date, doctor, or patient).

Use Case 4: Manage Patients

Actor: Admin / Doctor

Description: Allows doctors and admins to manage patient records.

Steps:

- User selects "Manage Patients."
- System displays a list of registered patients.
- Admin/Doctor can add, edit, or remove patient records.

Use Case 5: Contact Hospital

Actor: User (Patient or Visitor)

Description: Enables users to send inquiries via the contact form.

Steps:

- User enters name, email, subject, and message in the "Contact Us" form.
- System validates input and stores the inquiry in the database.
- Admin receives the inquiry and responds.

Use Case 6: Register New User

Actor: Patient

Description: Allows new users to create an account.

Steps:

- User selects "Register."
- User enters required details (name, email, password, phone number).
- System validates input and stores the data.
- Registration confirmation is displayed.

5. NON-FUNCTIONAL REQUIREMENTS:

5.1 Safety-

HTTPS is used for secure data transmission.

Encryption of sensitive data, such as passwords, to prevent unauthorized access.

5.2 Portability-

Compatible with **Chrome, Firefox, and Edge** for smooth user experience.

No support for mobile devices in the current version.

5.3 Security-

User authentication via email and password.

Input validation to prevent SQL injection and other security threats.

Access control to ensure only authorized users can manage hospital records.

5.4 Reliability-

The system is designed to handle up to **500 daily active users** without performance issues.

Regular database backups to prevent data loss.

5.5 Compatibility-

Developed for **desktop browsers**, with no dedicated mobile support in this version.

Works across **Windows, macOS, and Linux** with a compatible browser.

5.6 Scalability-

The system architecture allows for future enhancements, such as:

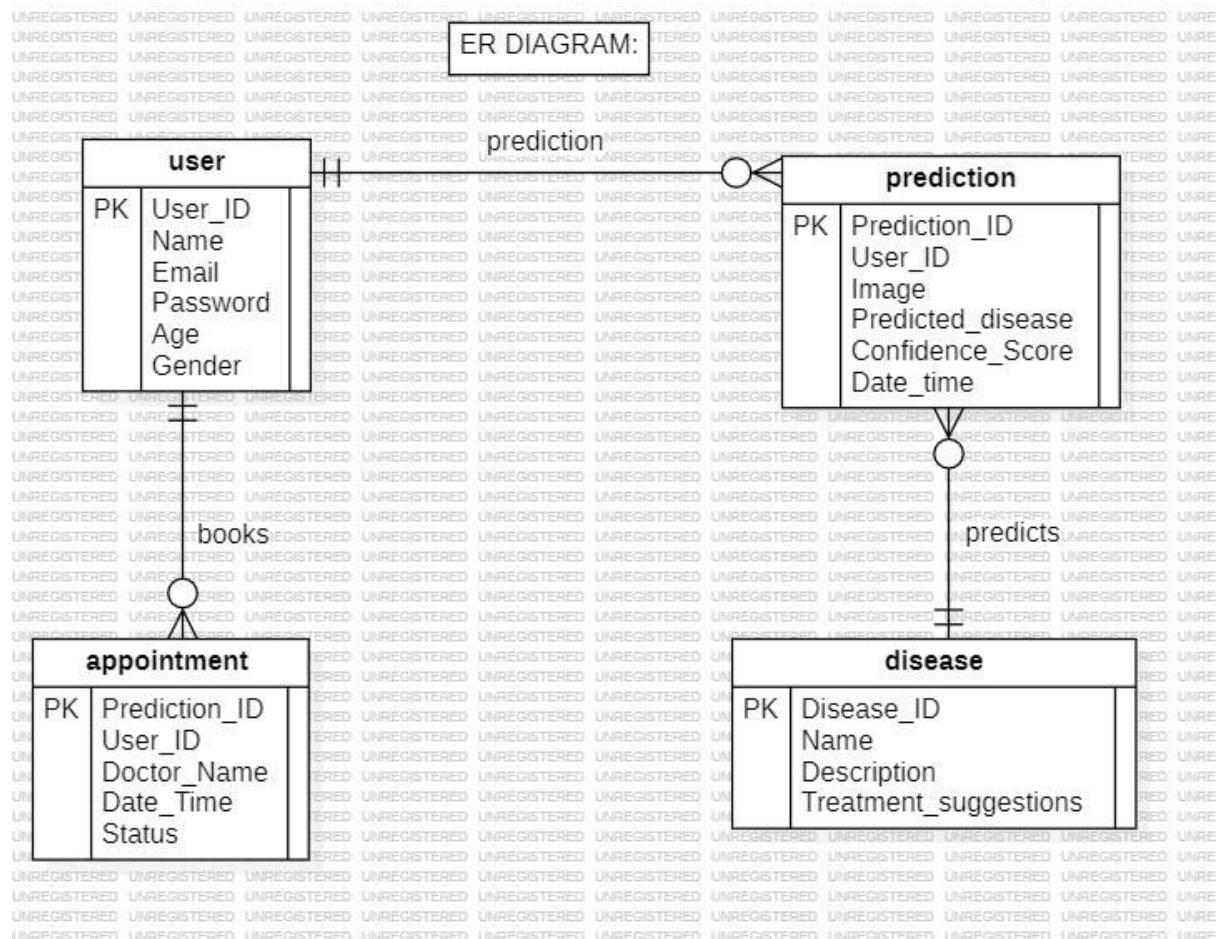
- **Adding more departments** (e.g., pharmacy, billing).
- **Mobile version development** for broader accessibility.
- **Advanced analytics** for hospital performance tracking.

Design

- a. Low level
- b. High Level
- c. ER and UI/UX

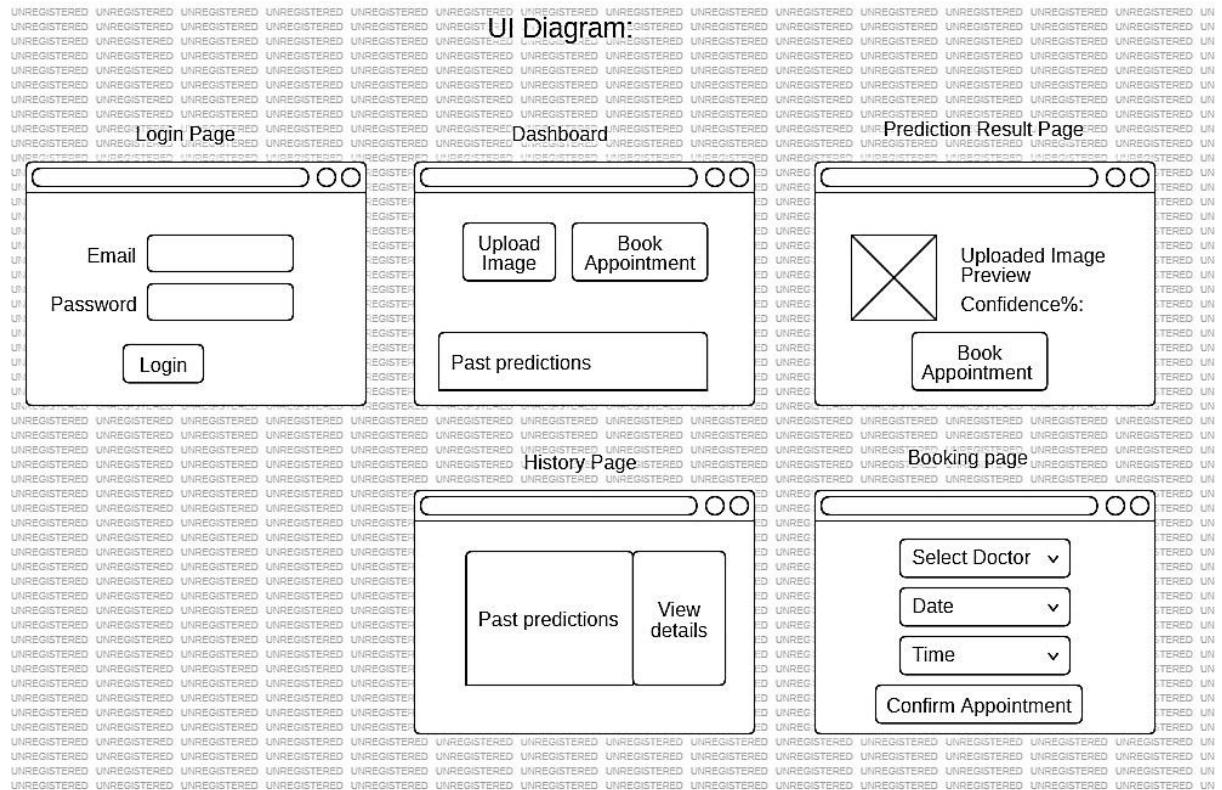
1. ER diagram

The ER diagram for the Skin Disease Predictor project represents the relationship between users, predictions, diseases, and appointments. The User entity stores details such as User_ID, Name, and Email. Users upload skin images for analysis, and the Prediction entity stores the results, linking each prediction to a specific disease from the Disease entity. If necessary, users can book an appointment, which is stored in the Appointment entity. The diagram illustrates the relationships: one user can have multiple predictions and appointments, while multiple predictions can be linked to the same disease.



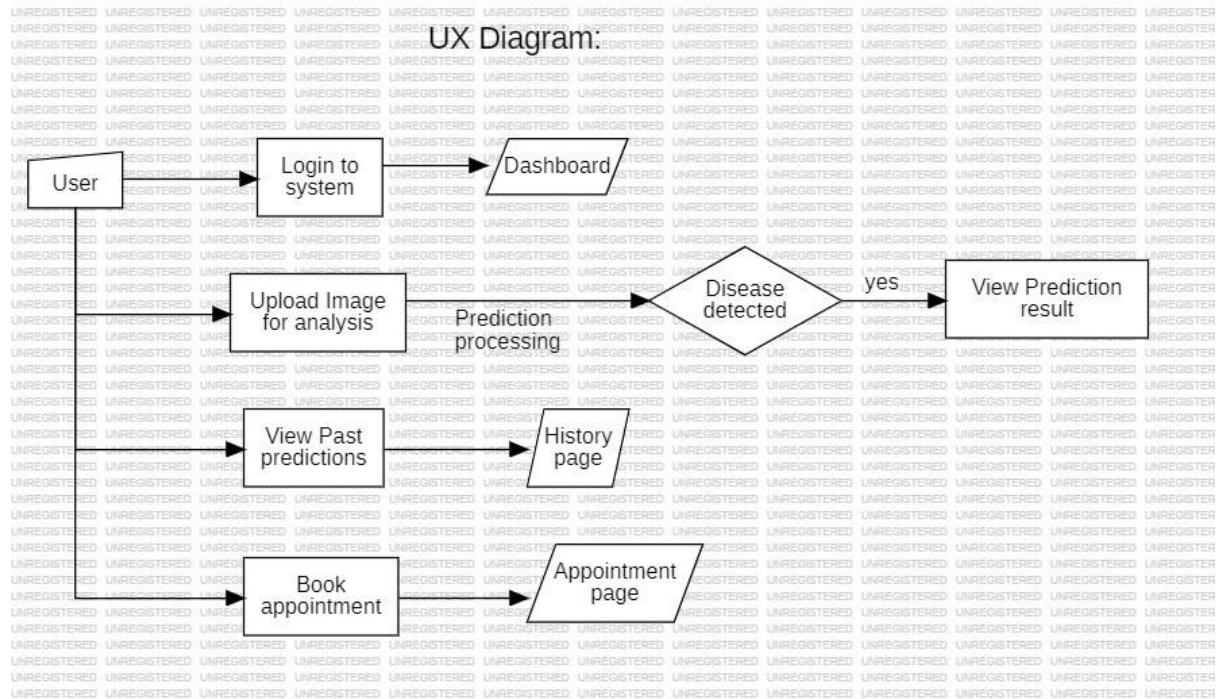
2. UI diagram:

The UI Diagram (Wireframe) for the Skin Disease Predictor represents the layout and structure of different screens within the system. It visually organizes essential pages like the Login Page, Dashboard, Prediction Page, Appointment Booking Page, and History Page. Each frame contains user interface elements such as buttons, input fields, labels, and images to indicate functionality. Navigation between screens is implied through buttons and links, ensuring a seamless user experience. This wireframe serves as a blueprint for designing the system's user interface, ensuring clarity and usability.

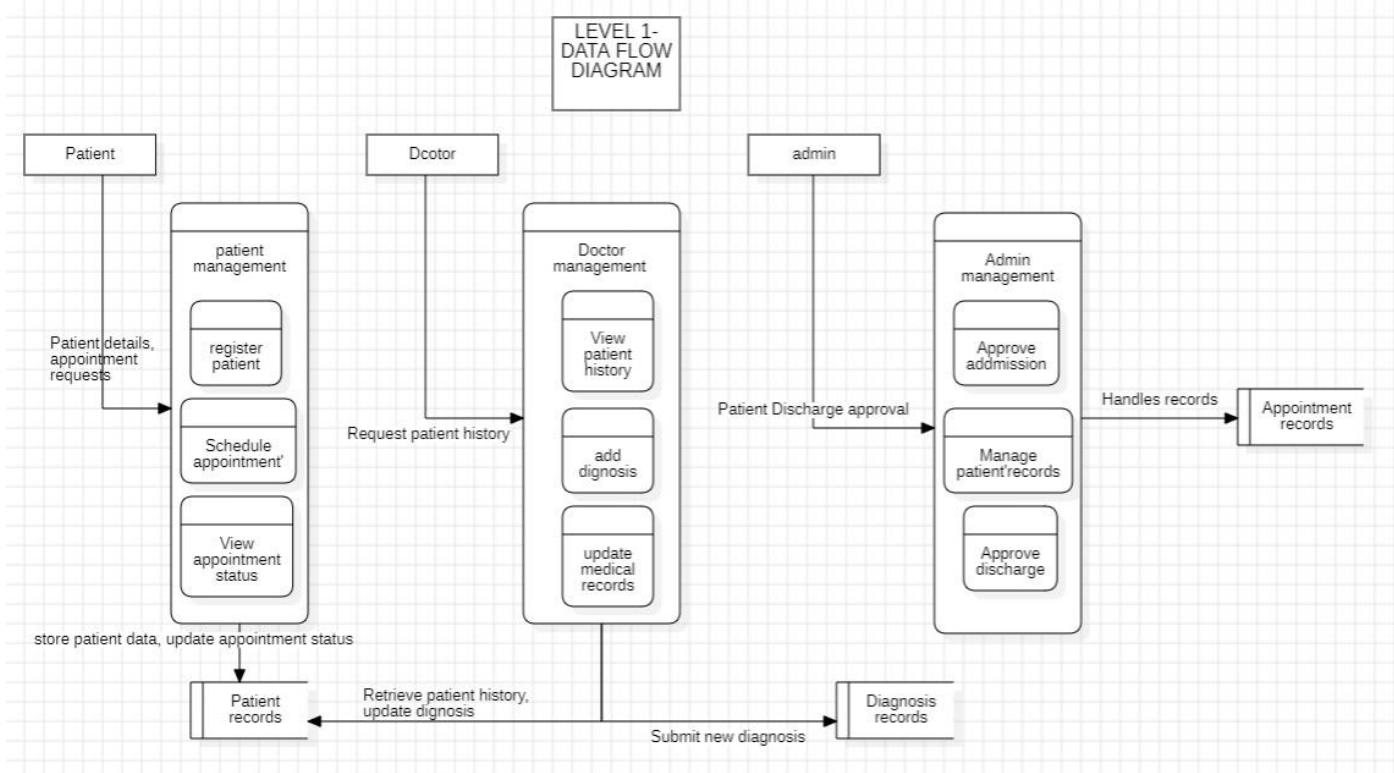
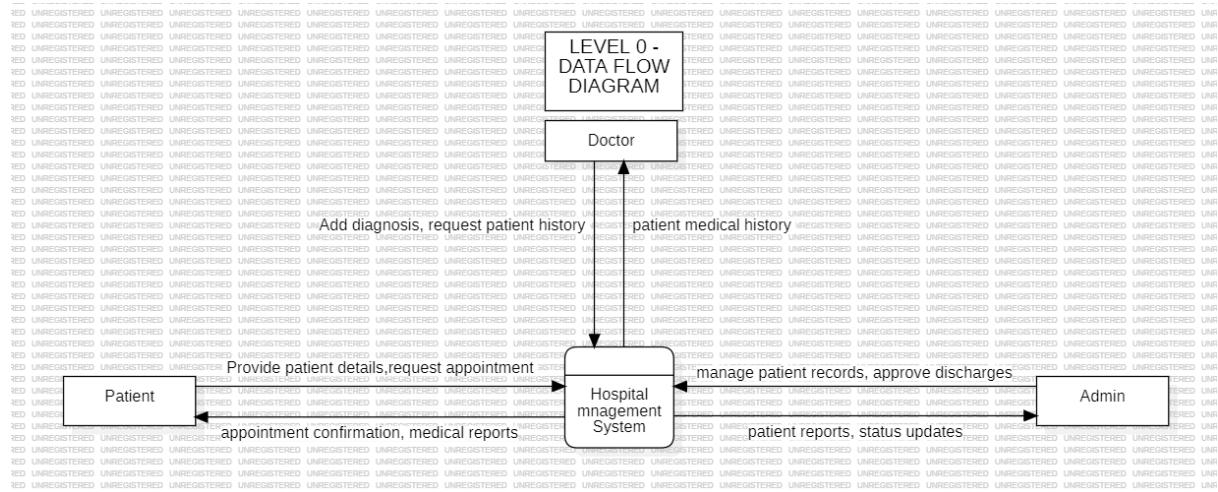


3. UX diagram:

The UX Diagram (User Flow) for the Skin Disease Predictor outlines the step-by-step interactions a user has with the system. It begins with the user logging in and navigating through key actions like uploading an image for analysis, receiving a prediction, booking an appointment, or viewing past results. The diagram includes decision points, such as whether the image analysis provides a clear result or requires re-uploading. This flowchart ensures a smooth and intuitive user experience by mapping out every possible interaction within the system.



4. Context based- DFD (level 0(HIGH LEVEL) and level 1(LOW LEVEL))



ALGORITHM – CODE:

Code: <https://github.com/shreya320/HMS>

Algorithm for Hospital Management System (HMS) with Skin Disease Predictor:

- 1. Start**
- 2. User Authentication:**
 - Prompt the user to **log in**.
 - Verify login credentials from the **MySQL database**.
 - If valid, proceed to the respective dashboard; otherwise, display an error message.
- 3. Patient Actions:**
 - Register a new patient (if not registered).
 - Book an appointment by selecting a doctor, date, and time.
 - Upload an image for **Skin Disease Prediction**.
 - Receive diagnosis results and recommended actions.
 - View appointment details.
 - Check medical history (previous visits, prescriptions).
 - Logout.
- 4. Skin Disease Prediction:**
 - Patient uploads an image.
 - Image is processed and analyzed using a **machine learning model**.
 - Prediction result is displayed with confidence level.
 - Recommendation is provided based on diagnosis.
- 5. Data Storage & Retrieval:**
 - Store all patient, doctor, and appointment details in **MySQL database**.
 - Store **Skin Disease Prediction** results for future reference.
 - Fetch and update records as needed.
- 6. End**

IMPLEMENTATION: (it should include all functionalities/modules)

The screenshot shows the homepage of SGRR Hospital's website. At the top, there is a red header bar with the hospital's logo, contact information ('Email: sgrrhms@gmail.com' and 'Contact no : 6396276055'), and navigation links for 'HOME', 'ABOUT US', 'DOCTORS', 'CONTACT US', 'REGISTRATION', 'LOGIN', and 'BOOK APPOINTMENT'. Below the header, a large 'WELCOME TO SGRR' section features a brief introduction about the hospital's commitment to providing world-class healthcare with a human touch. It highlights its focus on various medical disciplines like Cardiac Sciences, Neuro Sciences, Orthopaedics, and Cancer treatment. A 'Read More' button is present. To the right of this text block is a photograph of the hospital's modern, glass-fronted building with multiple entrances and a central entrance labeled 'SHRI MAHANT INDIRESH HOSPITAL'.

The screenshot displays a section titled 'Our Specialties' on the SGRR Hospital website. It lists several key services offered by the hospital, each presented in a white box with an associated icon:

- 24/7 Ambulance support** (Icon: Ambulance): 24 Hours Ambulance Service, Emergency Ambulance Service Providers in India.
- Dedicated Stroke Centre** (Icon: Brain): We specially have dedicated stroke centre which is very handy in critical situations.
- Skin Disease Detector** (Icon: Skin): Our system provides preliminary diagnosis for skin conditions using AI. A 'Check Now' button is available.
- LASIK Vision Correction Treatment** (Icon: Eye): We have LASIK Vision treatment which is the latest in the world.
- 17 State-of-the-art Operation Theatres** (Icon: Hospital): These Operation Theatres are full of latest technologies and equipments.
- 2 Endoscopy Suites** (Icon: Ear): 2 Endoscopy Suites are with latest equipments and very faster as compared to others.

File | C:/Users/shrey/OneDrive/Desktop/skin%20detection/index.html

latest technologies and equipments.

Health Packages

SGRR Basic wellness CBC Blood Group & RH Urine (Routine & Micro) For ₹1500/-	SGRR Gold Wellness CBC Blood Group & RH Urine (Routine & Micro) SGPT For ₹3000/-	SGRR Happy Heart Lipid Profile ECG Chest X-RAY FBS Basic Wellness Included For ₹4500/-	SGRR Platinum Wellness Basic Wellness Plan Lung Function Tests USG Abdomen Thyroid All Tests Lung Efficiency Tests For ₹8000/-
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At SGRR Hospital, we are convinced that 'quality' and 'lowest cost' are not mutually exclusive when it comes to healthcare delivery.

Our mission is to deliver high quality, affordable healthcare services to the broader population in India.

Useful Links

- > About Us
- > Contact Us
- > Book Appointment

Contact Us

SGRR Hospital
Dehradun, IN
Phone: 9997711455
Email: sgr@gmail.com

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f s in

File | C:/Users/shrey/OneDrive/Desktop/skin%20detection/about.html

HOME ABOUT US DOCTORS CONTACT US REGISTRATION LOGIN BOOK APPOINTMENT

ABOUT SGRR

Welcome to SGRR Hospital

SGRR Hospital is a multi/super speciality hospital located at the heart of the city, providing top-notch healthcare services with state-of-the-art facilities at an affordable cost.

- ✓ Advanced Treatment Options with cutting-edge technology
- ✓ World-class Medical Equipment and facilities
- ✓ Awarded Best Hospital of 2023 in Uttarakhand
- ✓ 24/7 Emergency and Trauma Center
- ✓ Team of Expert and Experienced Doctors

At SGRR Hospital, we strive to provide excellent medical care while



Dr. Harshil Patel
/ Consultant
Child care

Dr. Sahil Achhava
/ MBBS
Neurology

Dr. Dhruv Shah
/ MBBS, MS, DNB
General Surgery

Dr. Vijeta Kumari
/ MBBS
Health Checkup

Dr. Yagnesh Patel
/ MD
Dermatology

Dr. Namita Bhoj
/ MBBS,MS, MD
Eye Specialist

Dr. Jeel Patel
/ MBBS
CCU & ICU

Dr. Harman
/ MBBS
Health Checkup

Email: sgrrhms@gmail.com Contact no: 6396276055

HOME ABOUT US DOCTORS CONTACT US REGISTRATION LOGIN BOOK APPOINTMENT

REGISTER

Register a new account

Already Signed Up? Click [Sign in](#) to log in to your account.

First Name

Last Name

Email Address *

Password *

Confirm Password *

I agree to the [Terms and Conditions](#)

[Register](#)

At SGRR Hospital, we are convinced that

[Useful Links](#) [Contact Us](#)

The screenshot shows the login page of SGRR Hospital. At the top, there is a red header bar with the hospital's logo and navigation links: HOME, ABOUT US, DOCTORS, CONTACT US, REGISTRATION, LOGIN, and BOOK APPOINTMENT. Below the header, a sub-header reads "Login to your account". A login form is present with fields for Email and Password. A "Saved info" dialog box is overlaid on the form, containing the email "shreya.gupta2022b@vitstudent.ac.in" and a note "Stay signed in". Below the form, a link "Forget your Password ?" and a note "no worries, click here to reset your password." are visible. The footer contains copyright information: "© 2020 SGRR Hospital. All Rights Reserved.", links to Privacy Policy and Terms of Service, and social media icons for Facebook, Twitter, and LinkedIn.

The screenshot shows the appointment booking form titled "Appointment Form". The form consists of several input fields: "Full Name" (shreya), "E-mail Address" (shreya3200gupta@gmail.com), "Reason for Consultation" (stomach problems), "Phone Number" (6396276055), "Preferred Date" (dd-mm-yyyy), "Preferred Time" (Select Time Slot), and "Additional Notes". To the right of the form, there is a sidebar titled "Address" listing the hospital's details: Dehradun, IN, sgrrhospital@gmail.com, 886 666 00555, and http://www.sgrrhospital.com.

Contact Form

Name

E-mail

Subject

Mobile Number

Message

I want to know medicine for migraine

Send message

Address

- 🏡 Dehradun, IN.
- ✉ sgrrhospital@gmail.com
- 📞 886 666 00555
- 🌐 http://www.sgrrhospital.com

Contact Us - shreya.gupta2022@gmail.com

mail.google.com/mail/u/0/?tab=rm&oqlb#inbox/ FMfcgzQZTqBLyswMXxjdCwWvJvkMRXfr

Forests and their M... Course Modules: A... Oracle MyLearn Oracle Database Tra... AWS-Certified-Solut... Exam Scheduling | C... AWS Certification | ... Get Started - Skill B... All Bookmarks

Gmail Search mail

Compose

Inbox 4,801

Starred Snoozed Sent Drafts More

Labels

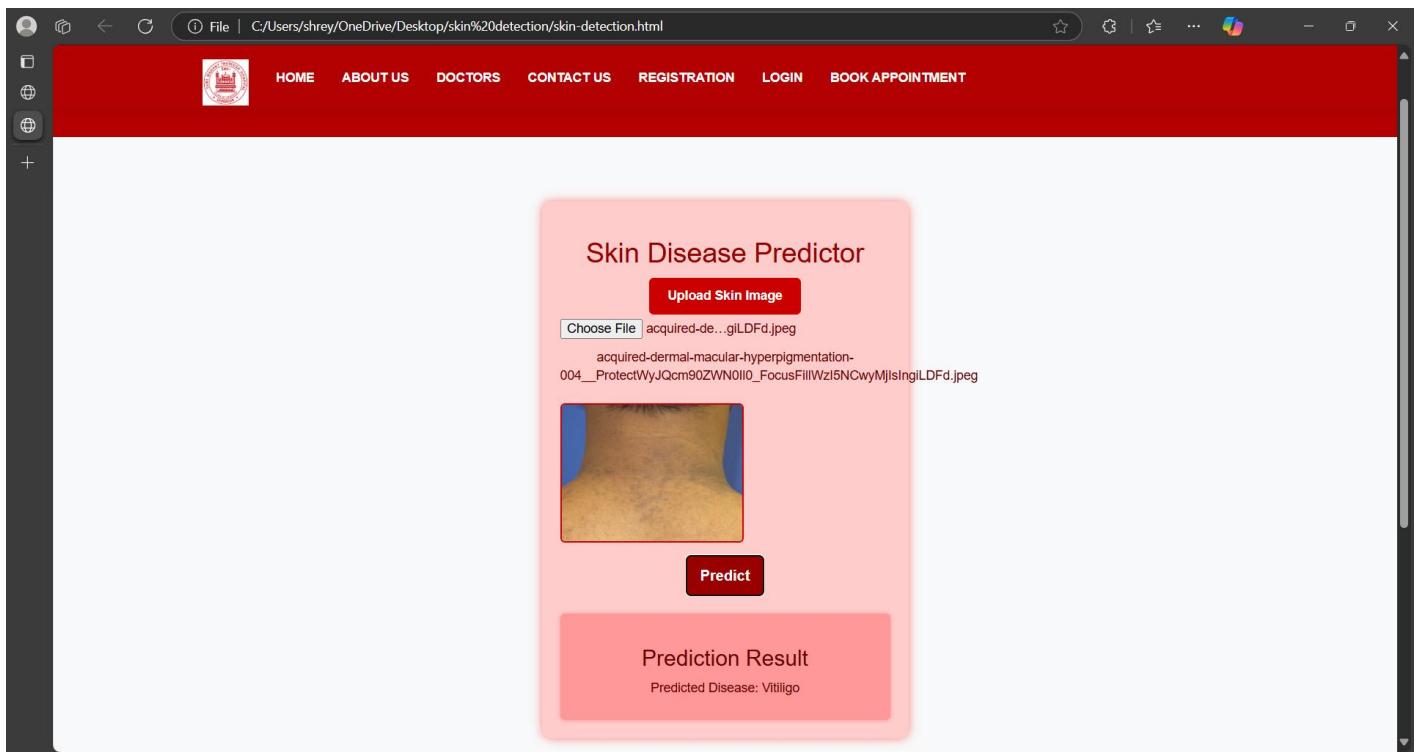
Contact Us: [Inbox](#)

riya gupta <shreya.gupta2022b@vitstudent.ac.in> to me 7:38PM (1 minute ago)

Name: riya gupta
Email: riya.gupta@gmail.com
Subject: medicine query
Mobile Number: 6396276055
Message: I want to know medicine for migraine
A message by riya gupta has been received. Kindly respond at your earliest convenience.

Email sent via [EmailJS.com](#)

Reply Forward



TESTING (Test document as prepared in DA)

Test 1: This test ensures that the navigation links, such as "HOME" and "CONTACT US," redirect users to the correct pages when clicked, confirming that the site's navigation functions as expected.

```
from selenium import webdriver
from selenium.webdriver.chrome.service import Service
from webdriver_manager.chrome import ChromeDriverManager
from selenium.webdriver.common.by import By
import time

# Setup Chrome WebDriver
service = Service(ChromeDriverManager().install())
driver = webdriver.Chrome(service=service)

# Open your website (update with your actual file path if testing locally)
driver.get("file:///C:/Users/shrey/OneDrive/Desktop/skin%20detection/index.html")

# List of navigation links to test
nav_links = {
    "HOME": "index.html",
    "CONTACT US": "contact.html",
    "ABOUT US": "about.html",
    "DOCTORS": "doctors.html",
    "REGISTRATION": "registration.html",
    "LOGIN": "login.html",
    "BOOK APPOINTMENT": "appointment.html"
}

# Function to test navigation
def test_navigation(link_text, expected_url):
    try:
        link = driver.find_element(By.LINK_TEXT, link_text) # Find link by text
        link.click()
        time.sleep(2) # Wait for page to load

        # Check if URL contains expected file name
        if expected_url in driver.current_url:
            print(f"✅ {link_text} navigation test passed!")
        else:
            print(f"❌ {link_text} navigation test failed. Expected {expected_url}, but got {driver.current_url}")
    except Exception as e:
        print(f"⚠️ Error testing {link_text}: {e}")

# Run tests
for link_text, expected_url in nav_links.items():
```

```
test_navigation(link_text, expected_url)
```

```
# Close the browser  
driver.quit()
```

The screenshot shows a Visual Studio Code (VS Code) interface. On the left is the file tree, showing two files: 'test_navigation.py' (4 changes) and 'test_navigation.py > ...'. The main editor area displays the following Python code:

```
14 # List of navigation links to test  
15 nav_links = {  
16     "HOME": "index.html",  
17     "CONTACT US": "contact.html",  
18     "ABOUT US": "about.html",  
19     "DOCTORS": "doctors.html",  
20     "REGISTRATION": "registration.html",  
21     "LOGIN": "login.html",  
22     "BOOK APPOINTMENT": "appointment.html"  
23 }  
24  
25
```

Below the editor is a terminal window titled 'TERMINAL'. It shows the command 'python test_navigation.py' being run in a PowerShell window. The output of the script is displayed:

```
PS C:\Users\shrey\OneDrive\Desktop\skin detection> python test_navigation.py  
>>  
DevTools listening on ws://127.0.0.1:62792/devtools/browser/853a9985-3f83-475c-bbbc-9cff87c2429  
5  
✓ HOME navigation test passed!  
✓ CONTACT US navigation test passed!  
✓ ABOUT US navigation test passed!  
Created TensorFlow Lite XNNPACK delegate for CPU.  
Attempting to use a delegate that only supports static-sized tensors with a graph that has dynamic-sized tensors (tensor#-1 is a dynamic-sized tensor).  
✓ DOCTORS navigation test passed!  
✓ REGISTRATION navigation test passed!  
✓ LOGIN navigation test passed!  
✓ BOOK APPOINTMENT navigation test passed!  
○ PS C:\Users\shrey\OneDrive\Desktop\skin detection>
```

The status bar at the bottom of the terminal shows 'Indexing completed.' and various configuration details like 'Spaces: 4', 'UTF-8', 'CRLF', 'Python', '3.11.10', 'Port: 5502', and icons for file operations.

Test 2: This test case fills out the contact form, submits it, and waits to verify if the success message appears, indicating the email was sent successfully via EmailJS.

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC

# Set up WebDriver
driver = webdriver.Chrome()

# Open the Contact Us page
driver.get("file:///C:/Users/shrey/OneDrive/Desktop/skin%20detection/contact.html")

# Wait until the form is loaded
wait = WebDriverWait(driver, 10)

# Fill in the form fields
driver.find_element(By.ID, "name").send_keys("Shreya Gupta")
driver.find_element(By.ID, "email").send_keys("shreya@example.com")
driver.find_element(By.ID, "subject").send_keys("Test Subject")
driver.find_element(By.ID, "number").send_keys("9876543210")
driver.find_element(By.ID, "message").send_keys("This is a test message.")

# Click the Submit button
driver.find_element(By.CLASS_NAME, "btn-u").click()

# Wait for the success message to appear
try:
    success_box = wait.until(EC.visibility_of_element_located((By.CLASS_NAME,
    "successBox")))
    print("☑ Test Passed: Success message displayed!")
except:
    print("☒ Test Failed: No success message.")

# Close browser
driver.quit()
```

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows two files: `test_contact.py` and `contact.html`.
- Code Editor:** Displays the content of `test_contact.py`. The code uses Selenium WebDriver to interact with a contact form. It includes filling in fields for name, email, subject, number, and message, and then clicking a submit button.
- Terminal:** Shows command-line output from running the script twice.
 - The first run shows DevTools listening on ws://127.0.0.1:64129/devtools/browser/c7efdb12-e19e-42ba-82d3-70da525ebfe7. A red X icon indicates a failed test: "Test Failed: No success message."
 - The second run shows DevTools listening on ws://127.0.0.1:64268/devtools/browser/1528d56a-e12f-4be7-b091-891e1c3cf8d4. A green checkmark icon indicates a passed test: "Test Passed: Success message displayed!"
- Status Bar:** Shows indexing completed, Python 3.11.10, Port 5502, and other system information.

Test case 3: This Selenium test script verifies that uploading an image enables the "Predict" button and updates the prediction result correctly. It includes proper waits and error handling for reliability.

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC
import time

# Set up the WebDriver
driver = webdriver.Chrome()
driver.get("file:///C:/Users/shrey/OneDrive/Desktop/skin%20detection/skin-detection.html")

try:
    # Find the file input and upload an image
    file_input = driver.find_element(By.ID, "imageUpload")
    file_input.send_keys(r"C:\Users\shrey\OneDrive\Desktop\skin
detection\skin_diseases\Vitiligo\Crop-
0350_0300vitiligo1__ProtectWyJQcm90ZWN0Il0_FocusFillWzI5NCwyMjIsIngILDFd.jpg")

    # Wait until Predict button is enabled
    WebDriverWait(driver, 5).until(EC.element_to_be_clickable((By.ID, "analyzeBtn")))

    # Click the Predict button
    predict_button = driver.find_element(By.ID, "analyzeBtn")
    predict_button.click()

    # Wait for the prediction result to update
    time.sleep(3) # Adjust if needed based on processing time

    # Check if the result is updated
    prediction_text = driver.find_element(By.ID, "predictionText").text
    if prediction_text == "No prediction yet.":

        print("✖ Test Failed: Prediction did not update. Check uploadAndPredict() function.")
    else:
        print("☑ Test Passed: Prediction updated successfully.")

except Exception as e:
    print(f"✖ Test Failed: {e}")

finally:
    driver.quit()
```

The screenshot shows a Visual Studio Code (VS Code) interface with the following details:

- Title Bar:** The title bar displays "skin detection" in the center, with standard window control buttons (minimize, maximize, close) on the right.
- Sidebar:** On the left, there's a sidebar with various icons: file, search, file tree, project tree, and others.
- File Explorer:** The file tree on the left shows two files: "skin-detection.html" and "test_skin.py".
- Code Editor:** The main editor area contains a Python script named "test_skin.py". The code uses Selenium to interact with a web application for skin detection. It includes imports for Selenium, time, and expected conditions, sets up a Chrome WebDriver, finds an image upload input, sends keys to it, and waits for a prediction button to become enabled.
- Bottom Navigation:** Below the editor are tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The TERMINAL tab is active, showing command-line output.
- Terminal Output:** The terminal shows the command "python test_skin.py" being run from the directory "C:\Users\shrey\OneDrive\Desktop\skin detection". The output indicates that DevTools are listening on port 49301 and a test has passed: "Test Passed: Prediction updated successfully."
- Bottom Status Bar:** The status bar at the bottom shows indexing completed, file statistics (0 0 5), and system information (Spaces: 4, UTF-8, CRLF, {}, Python, 3.11.10, Port: 5502).

CONCLUSION:

The **Hospital Management System (HMS)** is designed to streamline hospital operations by managing patient records, doctor appointments, and essential administrative tasks efficiently. By integrating **MySQL for data management**, the system ensures secure and structured storage of patient and hospital-related information. The intuitive user interface, developed using **HTML, CSS, and JavaScript**, provides ease of access and navigation for both patients and hospital staff.

This system not only enhances **appointment scheduling and patient record management** but also improves **overall hospital efficiency** by reducing manual workload and minimizing errors. Future enhancements could include **mobile compatibility, automated reminders, and integration with medical devices** to further improve patient care and hospital services.

With its user-friendly approach and essential healthcare functionalities, the **HMS serves as a reliable solution** for modern healthcare institutions, ensuring a **seamless and organized workflow**.

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