East West University

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"Project Report"

"SKIN DISEASES DETECTION AND CONSULTATION WEBSITE"

Submitted To:

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Introduction:

Welcome to our Skin Diseases Detection and Consultation Website, a user-friendly platform designed to empower individuals in managing their skin health. In a world increasingly dominated by technology, we've harnessed the power of Convolutional Neural Networks (CNN) to detect four common types of skin diseases through image uploads. Beyond diagnosis, our platform offers a unique blend of professional medical consultation and a community-driven support system. This comprehensive approach ensures that the website not only accurately detects skin diseases but also provides a secure, interactive, and engaging platform for users to seek professional advice and community support.

Objectives:

The primary goal of our website is to provide a reliable and accessible tool for users to identify potential skin diseases promptly. We aim to bridge the gap between technology and healthcare, offering users a holistic experience that goes beyond automated diagnoses. Key objectives include:

- **Accurate Disease Detection:** Utilizing CNN models to analyze user-uploaded images and provide accurate identifications of four major skin diseases.
- **Professional Consultation:** Facilitating communication between users and experienced dermatologists, enabling users to seek expert advice and guidance.
- **Community Support:** Fostering a sense of community where users can share their experiences, post queries, and receive support from others who may have faced similar issues.
- **Interactive Engagement:** Introducing a "Helpful" button feature for users to express appreciation for valuable insights, creating a positive and supportive environment.
- **User Profiles:** Empowering users to manage their information, track their posts, and engage with the community effectively.

Features:

Our website highlights four main features, and there's even more variety of useful tools and options beyond these key elements. The main four features are:

1. **Disease Detection:**
   - Users can upload images for automated identification of common skin diseases.
   - Instant and accurate results generated by our CNN model.
2. **Consultation Section:**
   - Users can ask questions related to skin health.
   - Professional dermatologists provide personalized responses.
3. **Community Forum:**
   - Users can post text descriptions of their skin concerns with or without images.
   - Fellow users can comment and share their experiences or advice.
   - "Helpful" button allows users to endorse valuable contributions.
4. **User Profiles:**
   - Customizable profiles for users to manage personal information.
   - Track and review uploaded posts for easy reference.

Tools:

We made our Skin Diseases Detection and Consultation Website very carefully using strong tools and technologies. This helps make sure that when people use it, everything works smoothly, and they can easily do what they want on the website.

- **HTML (Hypertext Markup Language):** HTML serves as the foundational language for structuring the website's content. It defines the layout and elements on each page, providing the essential structure for user interaction.
- **CSS and Bootstrap:** CSS is used to design and control the appearance of web pages. Bootstrap is a framework that simplifies and speeds up the process of creating responsive and visually appealing websites by providing pre-designed components and styles
- **JavaScript (JS):** It enables dynamic content updates, form validations, and asynchronous communication with the server, contributing to a seamless user experience.
- **JSON (JavaScript Object Notation):** It facilitates the efficient transmission of structured data, making it ideal for passing information such as user preferences, posts, and responses.
- **PHP (Hypertext Preprocessor):** PHP is a server-side scripting language used for server logic. It handles tasks such as user authentication, database interactions, and server-side processing.
- **MySQL:** It is a relational database management system (RDBMS) that stores and retrieves data for the website.
- **Ajax (Asynchronous JavaScript and XML):** Ajax is a technology that allows asynchronous data exchange between the browser and the server. It enables real-time updates without requiring a full page reload, contributing to a more responsive and dynamic user interface.

HTML provides the structure, JS enhances interactivity, and JSON facilitates smooth data exchange, creating a cohesive and dynamic front-end experience. PHP interacts with the MySQL database, managing user accounts, consultations, and posts. This integration ensures that the website's backend processes are robust and secure. Ajax is employed for asynchronous communication, enabling real-time updates without disrupting the user's browsing experience. This is especially valuable for features such as live comments and instant disease detection results.

Database design:

The design employs a relational database structure, where data is organized into tables with defined relationships between them. The main entities represented in the tables include users, messages, posts, comments, and diseases.

Key Tables:

- **User:** Stores user information such as user ID, username, password, first name, last name, gender.
- **Messages:** Stores message content, timestamp, and potentially a sender ID (if applicable).
- **Post:** Stores post content, date created, an image (if applicable), and a post ID.
- **Comment:** Stores comment content, date posted, and a comment ID.
- **Disease**: Stores disease information, including disease ID, name, and an image (associated with the disease).

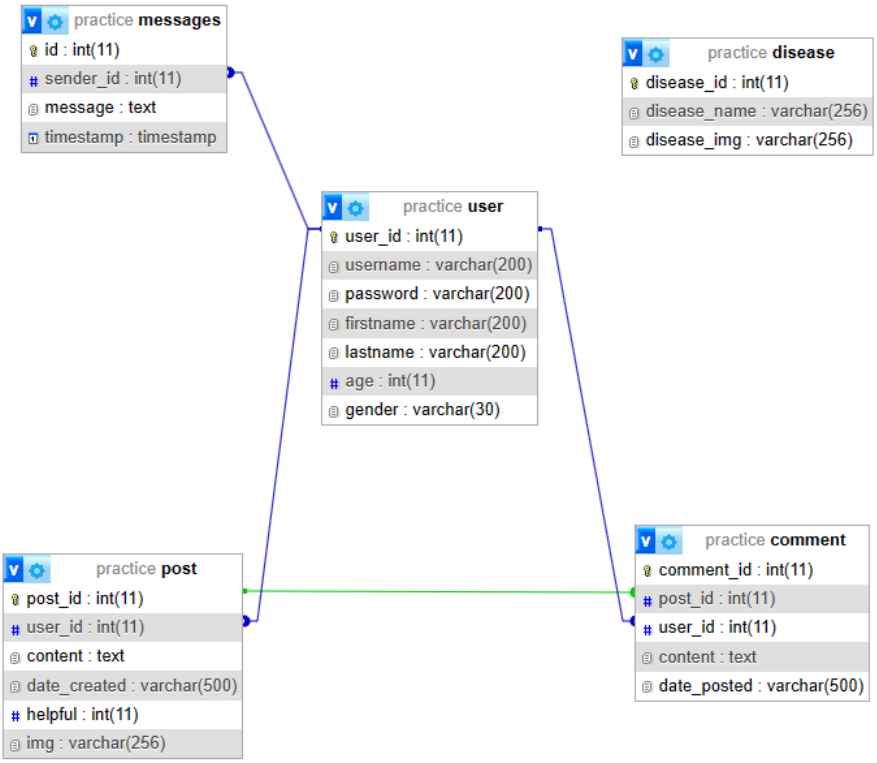

Figure 1: ER diagram of the database

Our website:

Our website's look is friendly and easy to use, with a design that welcomes you warmly. It's like a helpful guide, making everything simple and clear for a great experience.

Figure 2: A simple user-friendly Home page of the website

Figure 3: Login and Register page

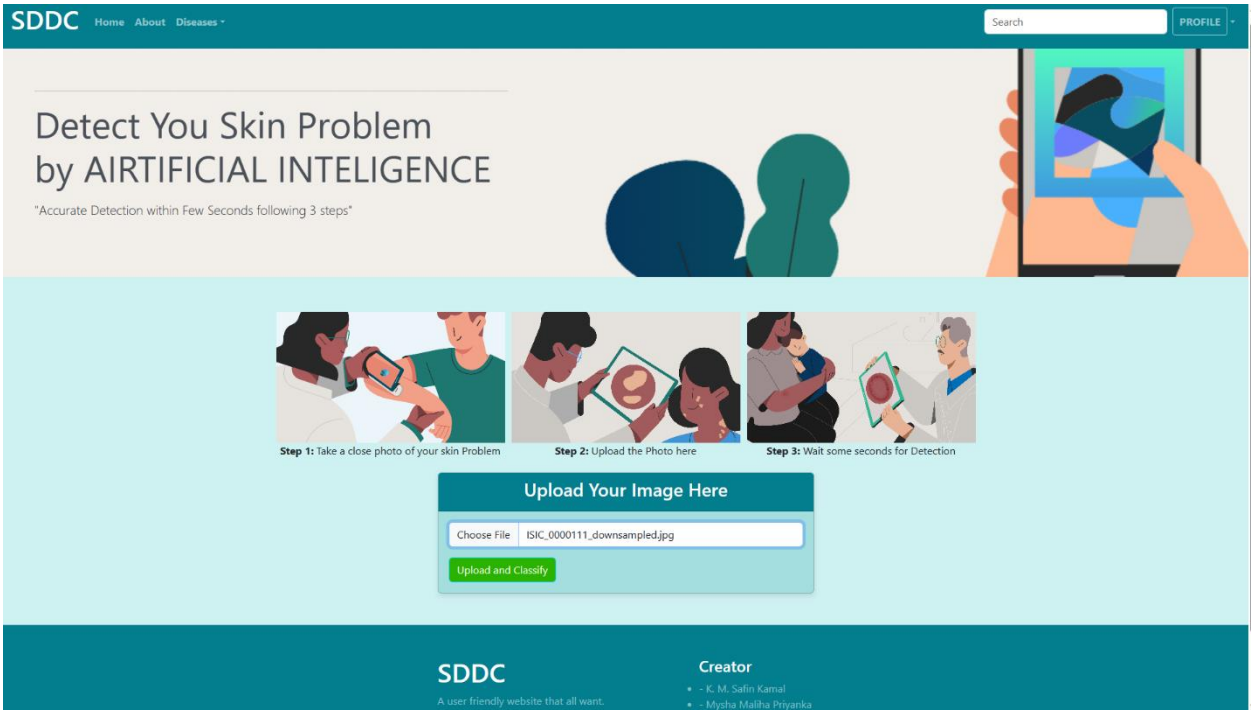

Figure 4: Detection of Skin problem by AI page

Figure 5: Result of the AI detection

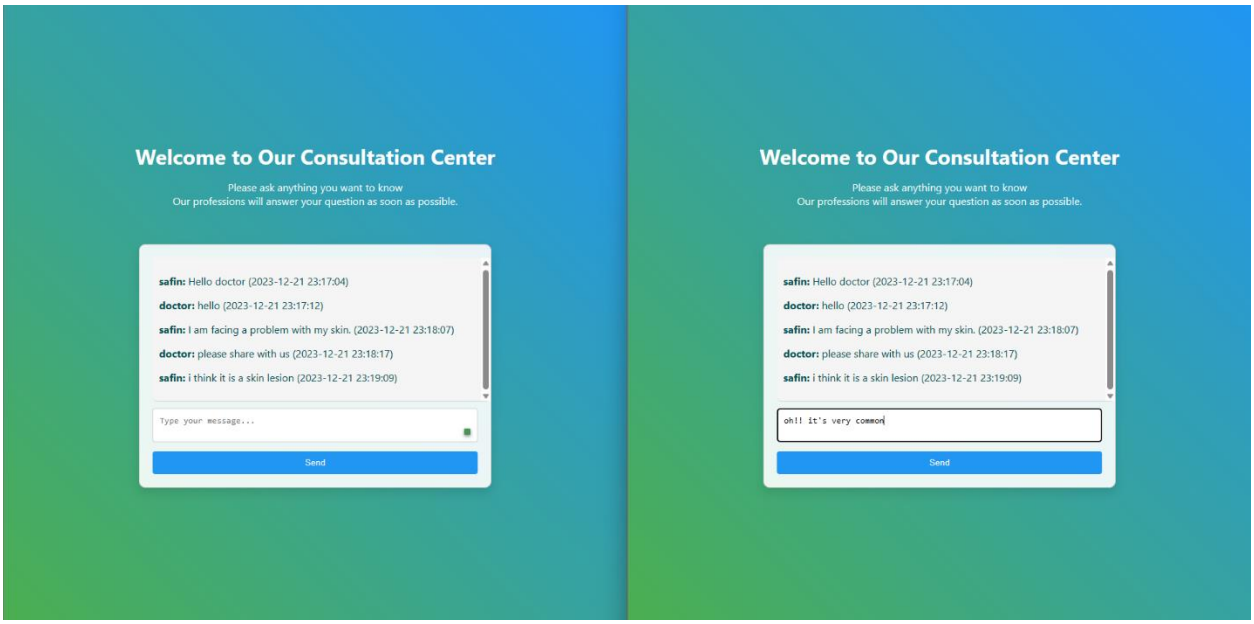

Figure 6: Consultation page where users can interact with Professionals instantly (like chat)

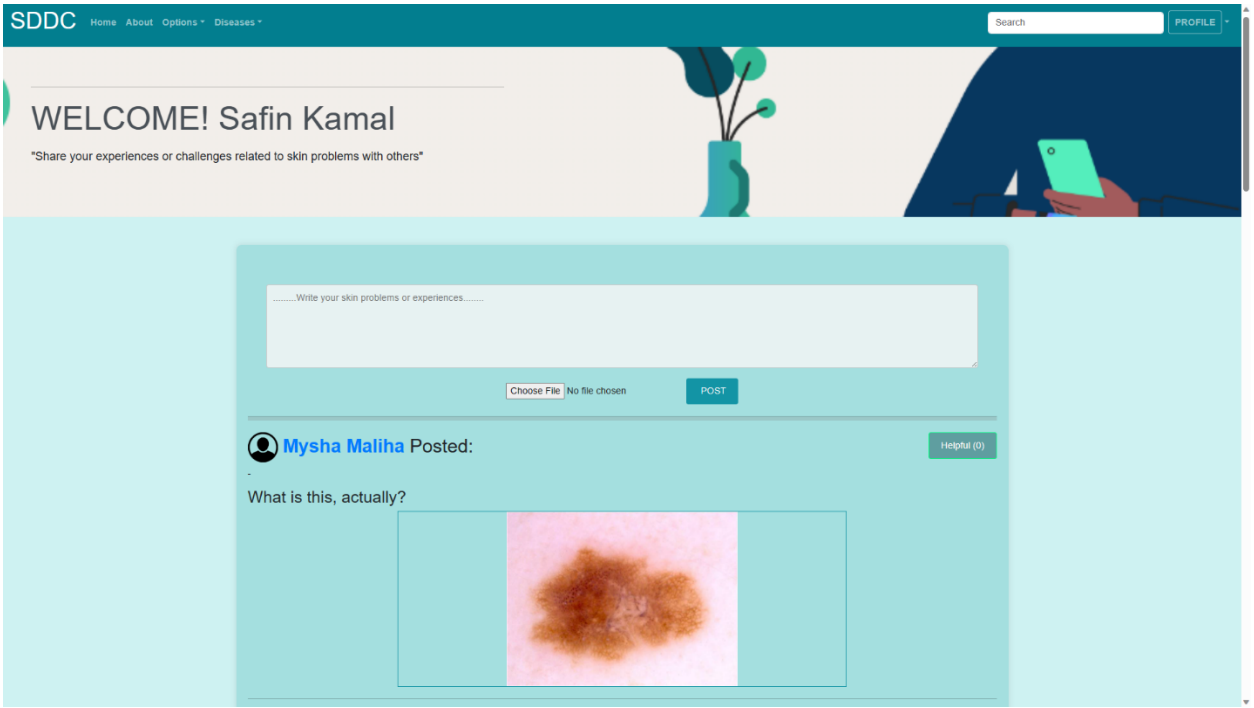

Figure 7: Post page where users can post and others can comment and hit helpful button to make a helpful community

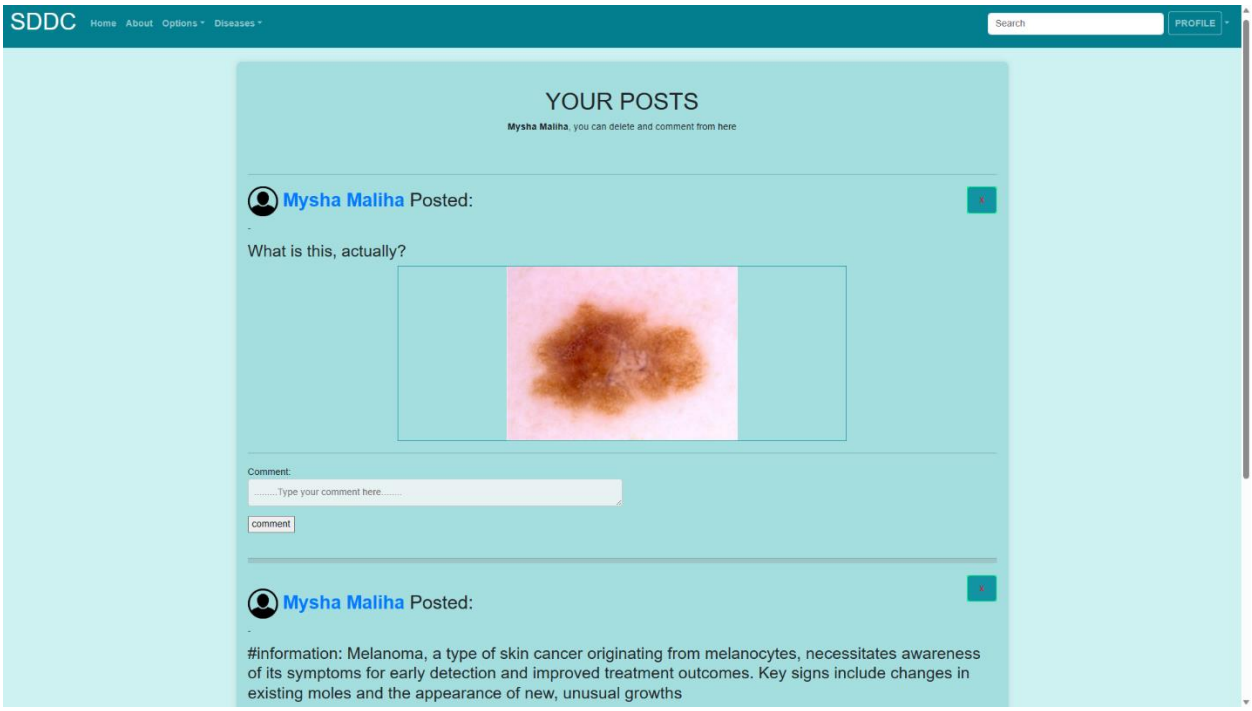

Figure 8: History of own page from where users can delete or comment on their post

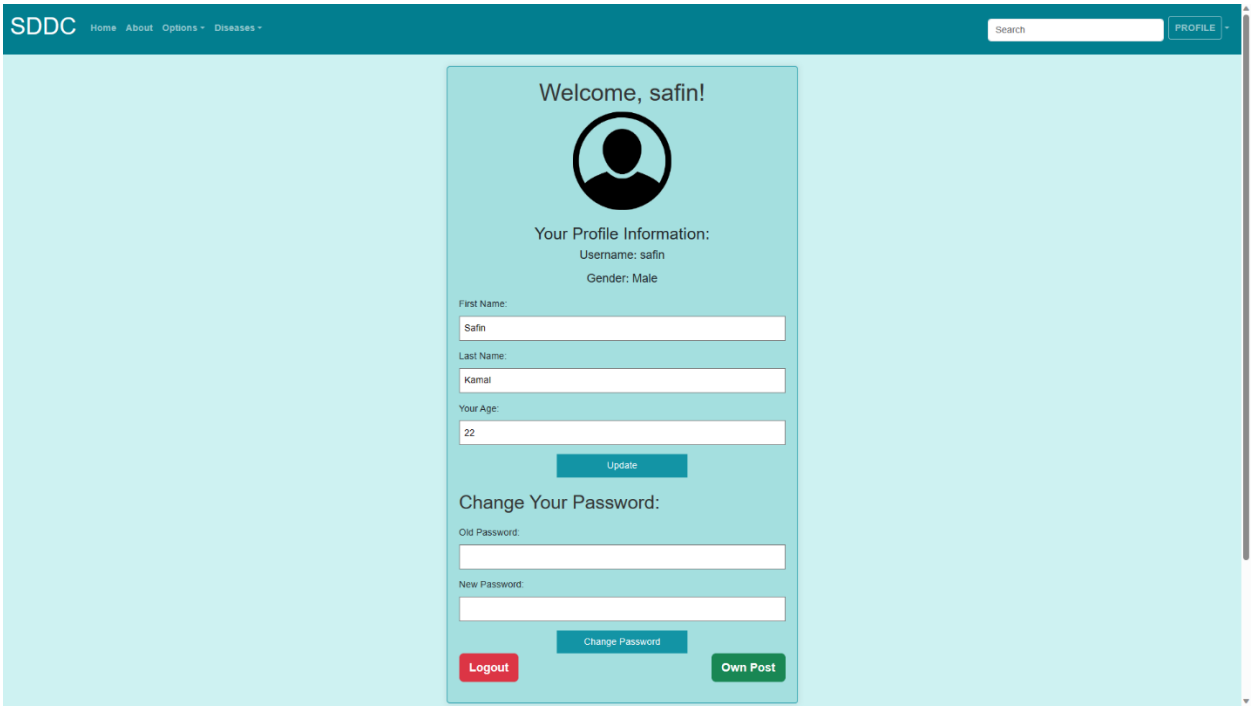

Figure 9: User profile page where users can also update their information and password

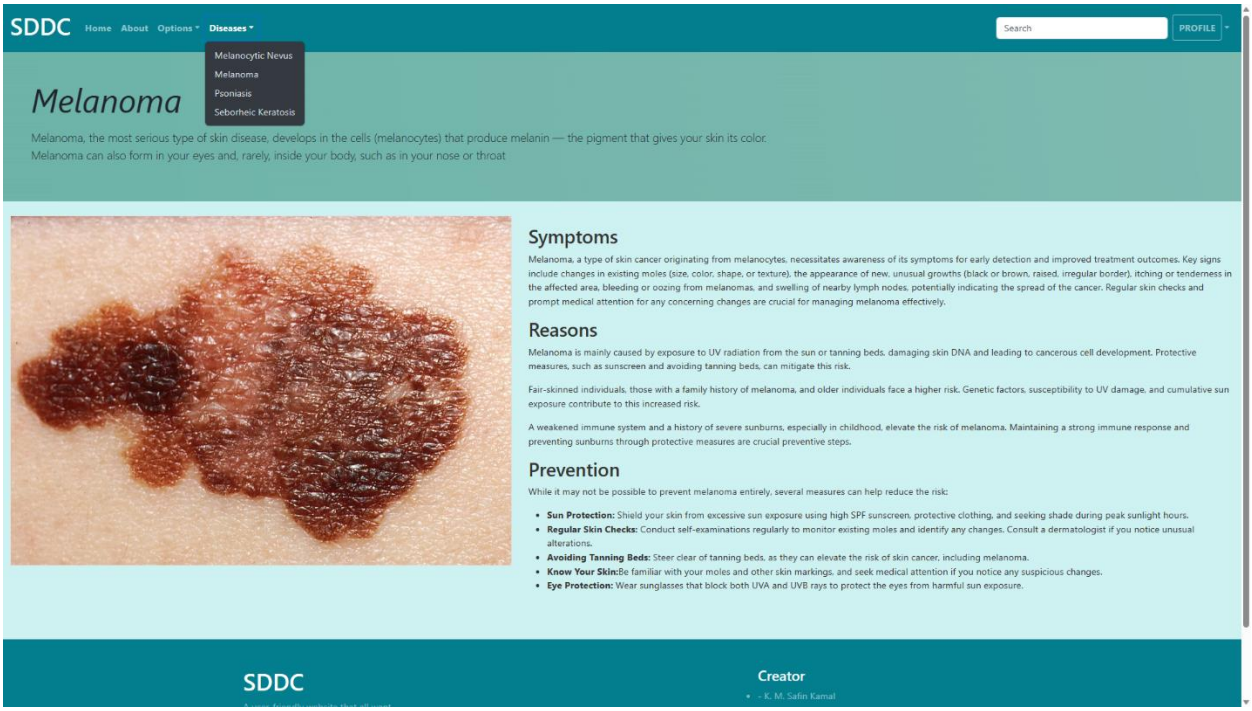

Figure 10: Details of diseases. Users can also search the disease name in the website

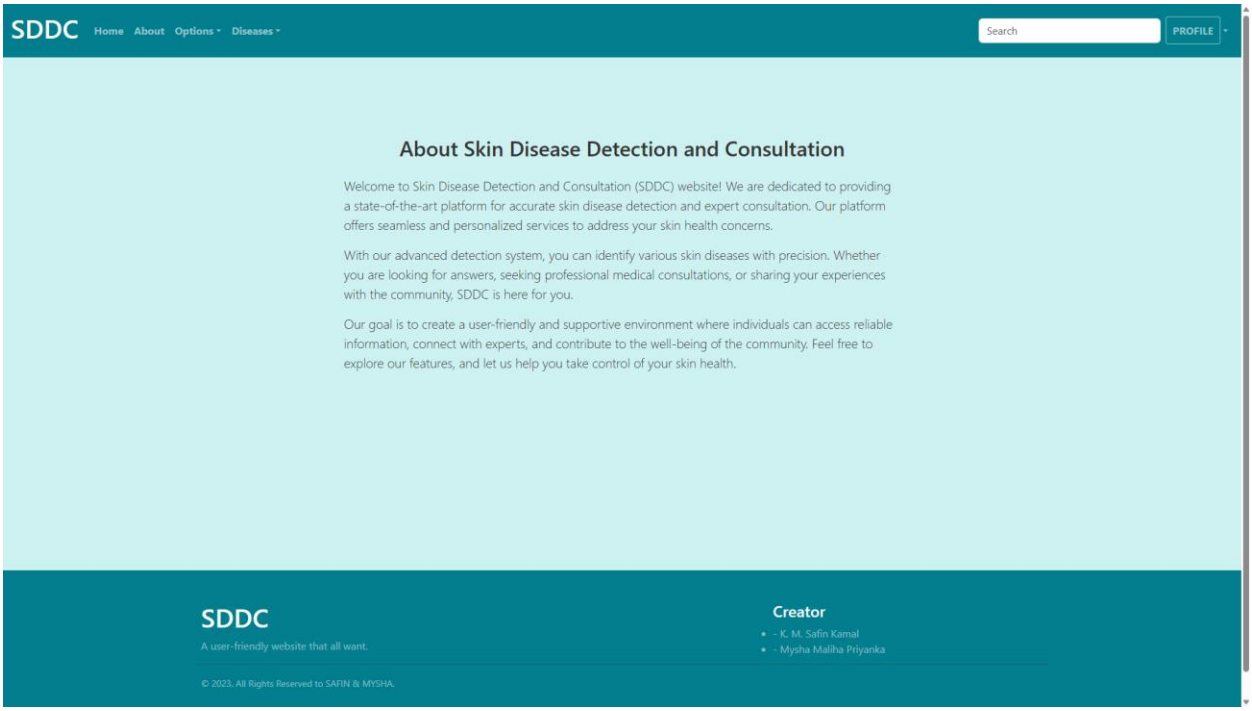

Figure 10: About the objective of website

Conclusion:

Our Skin Diseases Detection and Consultation Website stand at the intersection of technology and healthcare, aiming to empower users with accurate diagnoses, professional medical advice, and a supportive community. By combining the efficiency of CNN models with the expertise of dermatologists and the strength of a user-driven community, we hope to make a meaningful impact on how individuals' approach and manage their skin health. The combination of HTML, JS, JSON, PHP, MySQL, and Ajax forms a robust and versatile toolkit for developing the Skin Diseases Detection and Consultation Website. Each tool plays a specific role in creating a seamless and user-friendly experience, from the front-end presentation to the back-end data management. Together, let's build a platform that not only diagnoses diseases but also fosters a sense of community and support in the journey towards healthier skin.