

COEN 285 Software Engineering Project Write-Up

Project Idea: Skin Disease Online Diagnostic Tool

Team Number: 5

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Part 1 Domain Research

○ *Prevalence of Skin Disease*

Skin disease is one of the leading causes of global disease burden. Nearly 85 million Americans (27% of population; 1 in 4 individuals) were seen by a physician for skin disease in 2013. Overall, affected individuals averaged 1.6 skin diseases. Moreover, for age groups across Medicaid, commercial and uninsured populations, comparable prevalence and average number of skin diseases were observed. (see the graph below)



“The burden of skin disease in the United States”, Journal of the American Academy of Dermatology, May 2017, Volume 76, Issue 5, Pages 958-972.e2

○ *Terminology:*

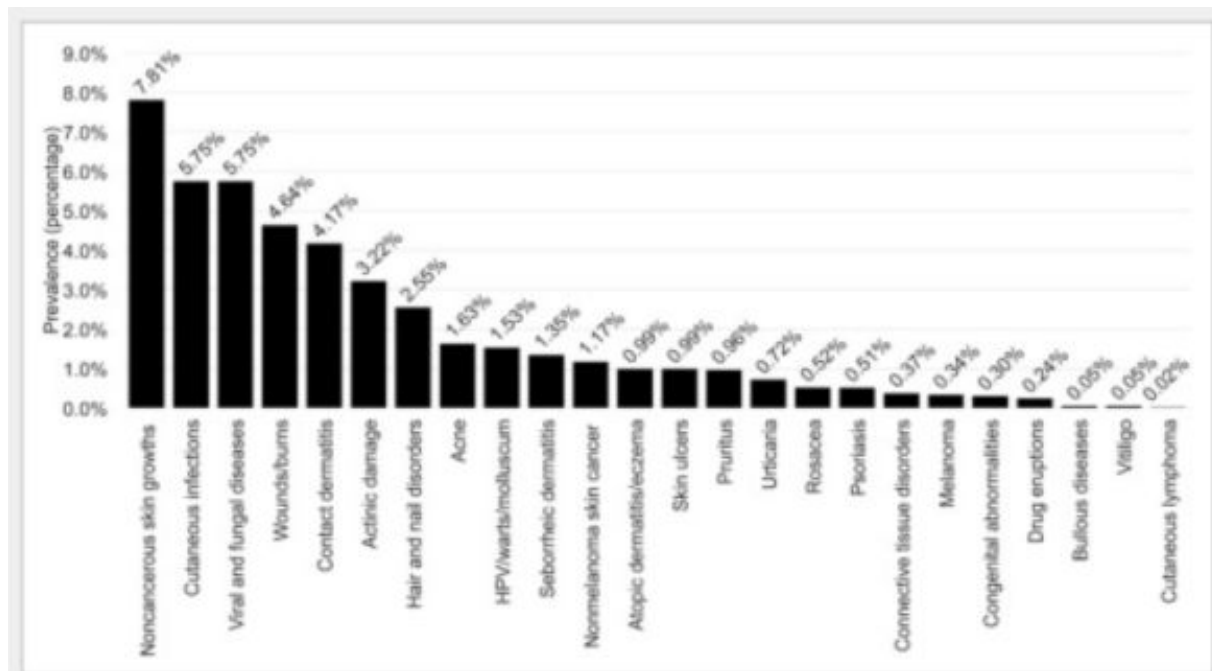
Dermatology is the branch of medical science dealing with the skin, its structure, functions, and diseases.

○ *Common Skin Disorders:*

Skin disorders vary greatly in symptoms and severity. They could be temporary or permanent, and may be painless or painful. Some have situational causes, while others are genetic. Some skin conditions are minor, and others can be life-threatening.

○ *Categories of Common Skin Diseases:*

- Skin Discolorations/hyper-pigmentation
- Chronic skin conditions: Eczema, Psoriasis, Acne, Rosacea
- Acute skin problems: Cold sores, plantar warts and palmer warts, etc
- Skin infections



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Part 2 Purpose of the Project (Elevator Speech)

The purpose of this project is to provide a quick diagnostic method for people having skin issues. The app intends to offer an easy way of detecting non-severe skin issues. Thus, people don't have to make an appointment with a dermatologist and can save time, money and energy.

- To give a little idea about the product- It is going to be a web server with both web access and mobile app access.
- The app provides a way for its users to take a picture of a skin anomaly and upload it to get a diagnosis on-the-go. It can help people voice their concerns over a sudden skin abnormality and rule out any common issues.

- The server will study tons of pictures of various skin issues and use machine learning techniques to build models. It will analyze the uploaded picture and provide the most accurate diagnosis possible. Based on the severity of the skin anomaly, the app will advise the user to consult with a dermatologist or suggest some over-the-counter medicine.

Part 3 User Objectives:

- *Provides Convenience To Patients*

A lot of people are actually turning to websites and online portals to get information about their issues. By having a professional website, we could make patients' lives much easier.

- *Lower Related Medical Cost*

The US medical system is way too complicated and quite expensive. By using a free website, more people can get the help they wouldn't have gotten otherwise.

- *Catch Issues Through Early Screening*

For smaller issues, a lot of people choose to ignore it to avoid the trouble of going to a hospital. Some serious issues can be caught at an early stage if the user has gotten a diagnosis at an earlier time.

- *Provide One More Data Point Of Diagnosis*

As Artificial Intelligence gets more and more advanced, it could potentially provide a more accurate diagnosis than an actual doctor. By using this diagnostic app, users can get a second opinion despite the one he or she got from a doctor.

Part 4 Project Timeline

4 Oct- 7Oct - Preparing write up for our project

Discuss project topics, finalize project topic, domain research, finalize the deliverable first draft of survey questions

7 Oct-28 Oct Collection of Data(surveys, interviews, etc)

Decide data collection model, Finalize survey questions, Collect surveys, Analyze the data.

28 Oct- 5Nov- Providing our requirements document.

Finalize the requirements based on the data collected, Write up formal requirement document.

5 Nov - 17 Nov- Completing the prototype of project with all the details.

Start preparing presentation, Prepare a mock GUI for the web/app portal.

After 17 Nov- Project wrap-up.

Finalize presentation, Presentation rehearsal, ready for presenting the project.

Part 5 Context Diagram

