



**K.R. MANGALAM UNIVERSITY**  
THE COMPLETE WORLD OF EDUCATION



Mini Project 2024-2025 (ENSI152)

# **SkinSpectra**

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# Project Overview

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**SkinSpectra** is a web app that lets users upload a photo, select their skin tone area, and receive personalized color palette recommendations based on RGB analysis—making it easier to choose clothing and accessories that enhance their natural look.

## Key Features

- **Skin Tone Detection from Image** – Users can upload a photo and manually select the area that best represents their skin tone for precise analysis.
- **Personalized Color Recommendations** – Based on the detected tone, the app suggests colors that best complement the user's unique skin tone.
- **User-Friendly Interface** – Clean design, intuitive upload process, and smooth navigation for a seamless user experience.



# PROBLEM

- Most people are unsure which colors suit their natural skin tone best.
- Wrong color choices in clothing can affect confidence and overall appearance.
- There's a lack of accessible, personalized tools that guide users based on their actual skin tone.

# SOLUTION (SkinSpectra)

- Provides real-time price comparison across major e-commerce websites on a single platform.
- Sends instant price drop alerts to help users grab the best deals quickly.
- Saves time and effort by centralizing product searches, making online shopping faster and smarter.



# Tech Stack

## Front End

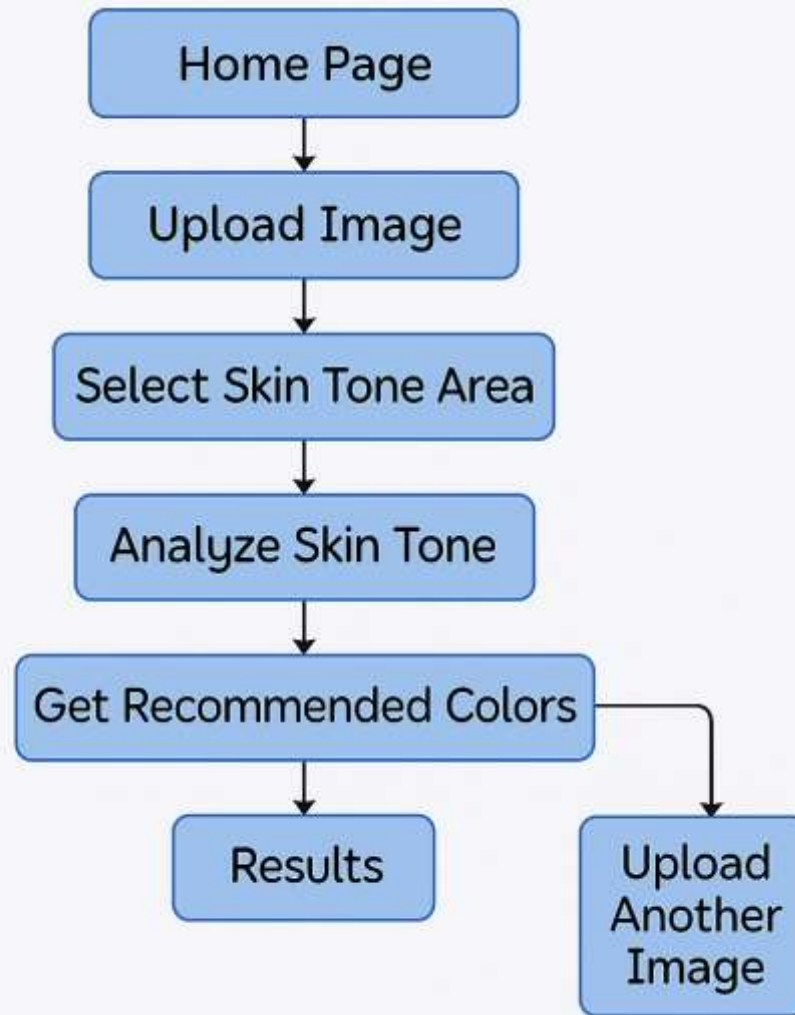
- **HTML** – For structuring the webpage layout
- **CSS** – For styling, gradients, fonts, and responsive design
- **Google Fonts** – Used **Zen Dots** for logo and **Sniglet** for site text
- **JavaScript** – For Interactivity and UI flow

## Back End

- **Python** – Core programming language for logic and processing
- **Flask** – Lightweight web framework to handle routes and server-side operations
- **Werkzeug** – For handling secure file uploads (comes with Flask)



# System Workflow Diagram



# Future Aspects

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- **Expanded Color Palettes:** Include additional palettes for makeup, hair, and accessories to provide more personalized suggestions.
- **Seasonal Color Palettes:** Offer seasonal color palettes (spring, summer, fall, winter) to match different trends and moods throughout the year.
- **Webcam Integration:** Allow users to use their webcam for real-time skin tone detection, giving instant feedback.
- **Saving Results:** Let users save their skin tone detection results and color palettes for future reference and comparisons.
- **Professional Collaboration:** Collaborate with experts like dermatologists, makeup artists, or color specialists to provide more accurate and professional recommendations.



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# Thank You!!!

