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we for the

TEAM NAME: RESTYLE

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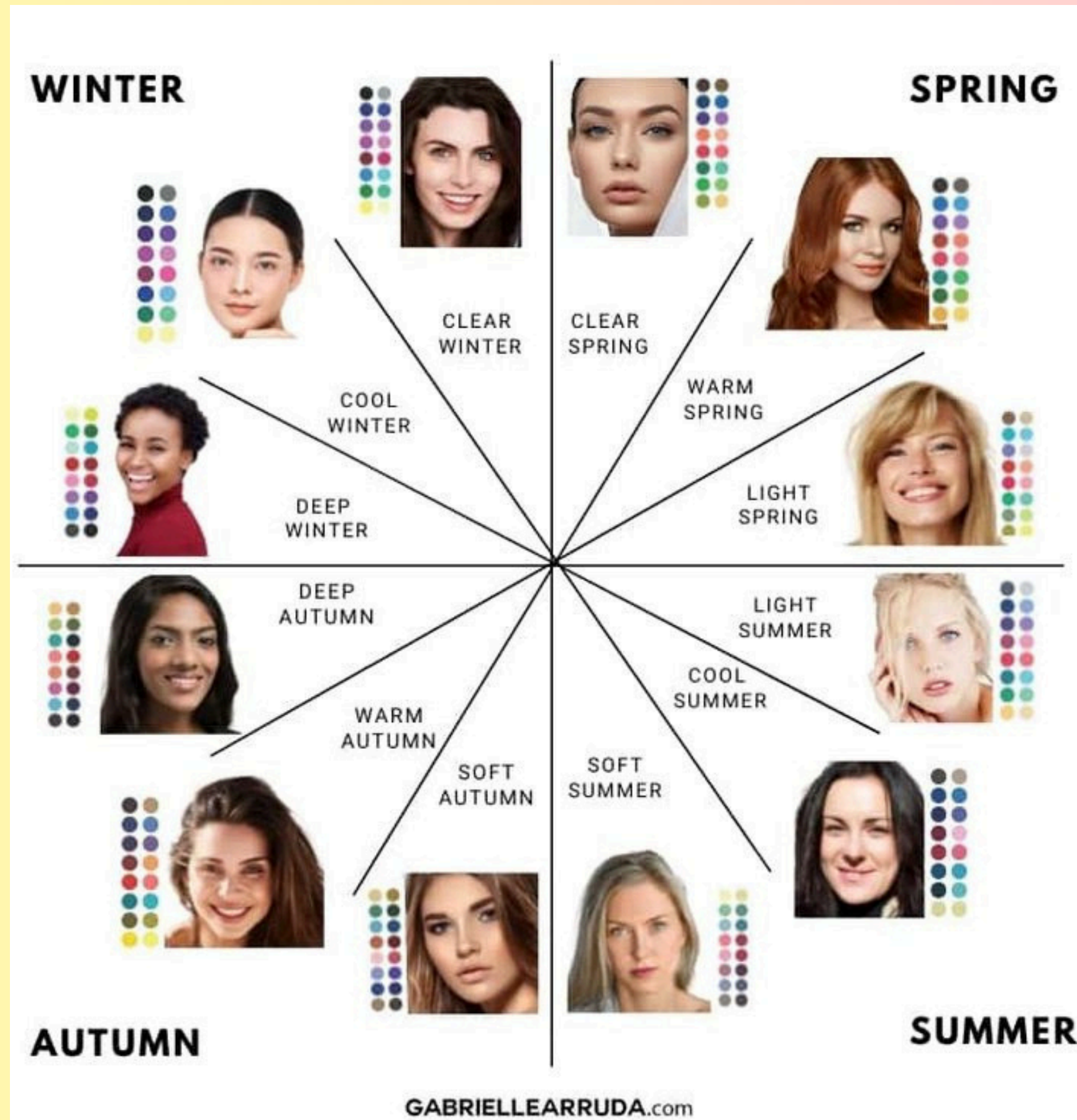


Problem Statement

Theme: Engagement on a shopping platform

Many shoppers struggle to visualize how clothes will look on them and to determine which product will flatter their unique coloring. This leads to indecisiveness, unnecessary returns, and a negative shopping experience.

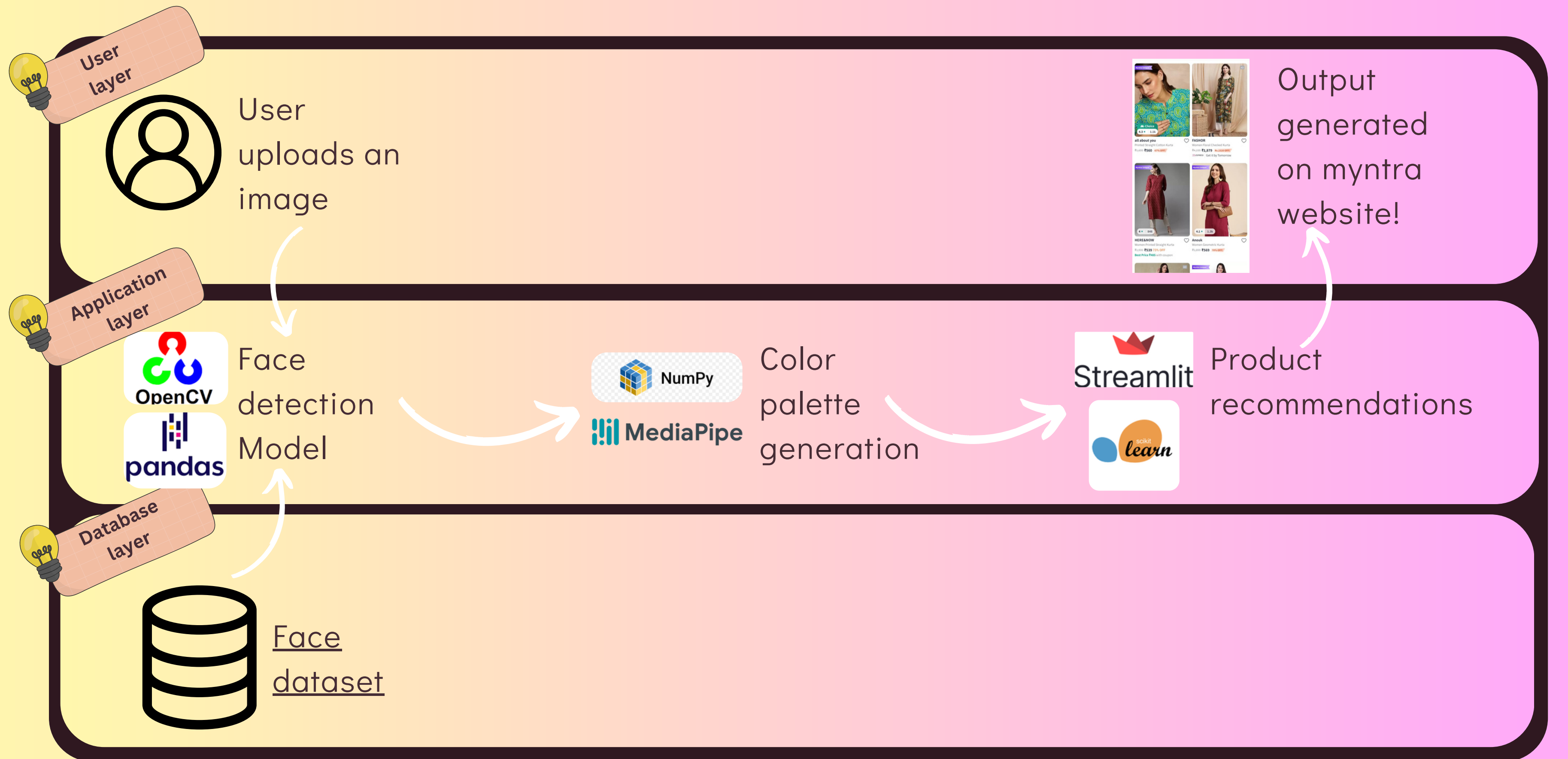
Therefore we have developed a user-friendly and accessible recommendation system that analyzes a person's unique features and suggests personalized recommendations.



What is seasonal color analysis?

- Color analysis is a professional method for identifying colors that harmonize with the user's natural coloring (skin tone, hair color, eye color).
- Our goal is to recommend clothes that will actually look good on the user and not just on the model by choosing color palette that flatter each user.
- The 12 Seasons approach is a refined system that builds upon the four-season approach by incorporating additional factors like brightness and depth.

Flow



Face Detection model

- **Image Segmentation:** Using OpenCV and the MediaPipe library, the image undergoes image segmentation and the background is replaced with a default color. The image is then reshaped to exclude non-facial parts, ensuring accurate analysis.
- **Face Dataset:** The dataset used to test this model is a collection of 7.2k+ images. A mix of all common creeds, races, age groups and profiles to ensure no bias.
- **RGB to HSL Conversion:** The face image's pixel colors are converted from RGB to HSL to understand the hue(temperature), depth and chroma of the image.

Color Palatte Generation Model

- **K-Means Clustering:** The K-means clustering algorithm is applied to the HSL values to identify distinct color clusters on the face. Each cluster represents a dominant color.
- **Seasonal Mapping:** Based on the detected temperature, depth, and chroma levels, the model maps the user's face to one of the predefined seasons. Each season is associated with a specific color palette.
- **Integration with Myntra:** Used urllib to generate URLs of the myntra website that display the recommended products.

Benefits

Cost Efficiency:

- Traditional color analysis services range from \$50 to \$600 or more, making our solution a more accessible and affordable option.

Integrated Shopping Experience:

- Unlike many standalone color analysis services, our application integrates directly with a shopping platform, simplifying the process of finding clothes in the recommended colors.

Global Accessibility:

- Currently, professional color analysis is primarily available in the USA, a few European countries, Japan, and Korea. Our platform offers a global online alternative that is both reliable and cost-effective.

Enhanced Sales and Reduced Returns:

- By offering personalized product recommendations based on accurate color analysis, we help boost sales and significantly reduce return rates.