DESI GLAM

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What We Have Done:

Our project, a **Streamlit-based app**, aims to enhance personalized fashion recommendations by identifying a user's **celebrity look-alike** and tailoring outfit choices based on the user's **skin undertone** and **body shape**. Below are the key functionalities we implemented:

1. **Image Upload and Feature Extraction**:
   - Users can upload their image to the app.
   - The app extracts facial features using a pre-trained model, which we plan to fine-tune for better accuracy.
2. **Vein Color-Based Skin Undertone Detection**:
   - After the image upload, users are asked about the color of their veins to determine their **skin undertone** (warm/ cool / neutral).
   - This helps suggest the color of outfits (Indian ethnic wear) that best suit the user's skin tone.
3. **Body Shape Identification**:
   - The user inputs their **bust, waist, and hip measurements** into the app.
   - Based on these measurements, the app identifies their **body shape** (pear, apple, rectangle, hourglass)**,** helping to make outfit recommendations tailored to their figure.
4. **Bollywood Celebrity Look-Alike Detection**:
   - By comparing the user's facial and body features to a **database of Bollywood celebrities**, the app determines which celebrity they most resemble.
5. **Celebrity Dress Match and Face Swap**:
   - Based on the user's skin undertone and celebrity resemblance, the app fetches an image of the celebrity in **ethnic Indian attire** that suits the user's tone.
   - Using a **face swap function**, the app displays what the user would look like in that celebrity's outfit.

Planned Features for Future Development:

This project has immense potential for future growth. Here are the features we plan to implement:

1. **Personalized Outfit Recommendation System**:
   - We aim to integrate a **recommendation system** that will suggest more outfits to the user.
   - By incorporating a **swipe-right/swipe-left feature**, the app will refine suggestions based on user preferences and feedback.
2. **Accessory Recommendations Based on Face Shape**:
   - In the future, we plan to add **face shape detection** to suggest suitable accessories such as **jewelry** (earrings, necklaces), **hairstyles**, and even **glasses** that complement the user's appearance.
3. **Complete Fashion and Style Guide**:
   - Along with ethnic outfits, the app can be expanded to include recommendations for **western wear** and **fusion outfits**, thereby enhancing the versatility of suggestions.

Challenges and Current Limitations:

Despite the successful implementation of the core functionalities, we faced several challenges and limitations:

1. **Feature Extraction Model Needs Fine-Tuning**:
   - The current model for facial feature extraction requires further **fine-tuning** to ensure higher accuracy in identifying the celebrity look-alike.
   - We were working on using **transfer learning** to improve the precision of the extracted features.
2. **Google Image Search Needs Optimization**:
   - The **Google Image search** functionality for retrieving celebrity images in ethnic wear could be optimized to return more **accurate and context-specific results** for better visual outcomes.

Conclusion:

In its current form, the app offers a unique blend of **personalization and fashion recommendations** based on the user's appearance. However, with the addition of personalized fashion guides and improved recommendation algorithms, this tool could become a robust fashion companion that not only makes users feel more stylish but also more confident about their choices.

This project is still in its infancy, but the scalability and potential of this idea are immense.