Fashion clothing – AR

TEAM MEMBERS:

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PROJECT BACKGROUND:

With the rapid growth of e-commerce, consumers increasingly seek convenient and reliable ways to shop for clothing and accessories online. One of the significant challenges in online apparel shopping is the inability to physically try on items before purchase. This often leads to dissatisfaction, returns, and exchanges, impacting both customer satisfaction and retailer profitability.

The virtual trial room addresses this issue by allowing users to visualize how different items will look on them without needing to visit a physical store. By integrating advanced technologies such as computer vision and real-time video processing, the application aims to create a seamless and engaging user experience.

OBJECTIVE:

The primary objective of this project is to develop a web-based application that allows users to virtually try on clothes or accessories. This innovative approach aims to enhance the online shopping experience by providing users with a realistic preview of how products will look on them, reducing the uncertainty that comes with purchasing apparel and accessories online.

KEY FEATURES

1. Virtual Try-On: Users can select an item from the product catalog and see a real-time simulation of how the item looks on them.

2. Shopping Cart: Users can add items to a shopping cart for potential purchase and perform batch virtual try-ons for multiple items.

3. Video Feed Integration: The application uses a live video feed from the user's camera to enhance the virtual try-on experience.

4. Template-Based Web Pages: The application includes various web pages for product display, checkout, contact, and additional information about the service.

TECHNOLOGIES USED

1. Flask: A lightweight web framework used for building the backend of the application.
2. HTML/CSS: Used for rendering the front-end templates and ensuring a user-friendly interface.
3. Python Scripts: External scripts (`tryOn.py` and `test.py`) handle the virtual try-on logic and image processing.
4. Video Streaming: Real-time video processing to capture user images or videos for the virtual try-on feature.

ARCHITECTURE

1. Frontend:
   Uses HTML templates for different web pages (index, product, contact, about, features, checkout).
   Forms for capturing user inputs and interactions, such as adding items to the cart or initiating a virtual try-on.
2. Backend:
   Flask routes handle user requests, render templates, and manage the shopping cart.
   External Python scripts (`tryOn.py` and `test.py`) are executed to process virtual try-ons.
3. Video Processing:
   A `VideoCamera` class captures and processes video frames, which are then used in the virtual try-on feature.
   Real-time video feed is streamed to the user's browser for a live preview.

WORKFLOW

1. User Browses Products: The user navigates through the product catalog and selects items of interest.

2. Virtual Try-On: The user can initiate a virtual try-on for selected items. The backend processes the request, executing the necessary scripts and updating the interface with the results.

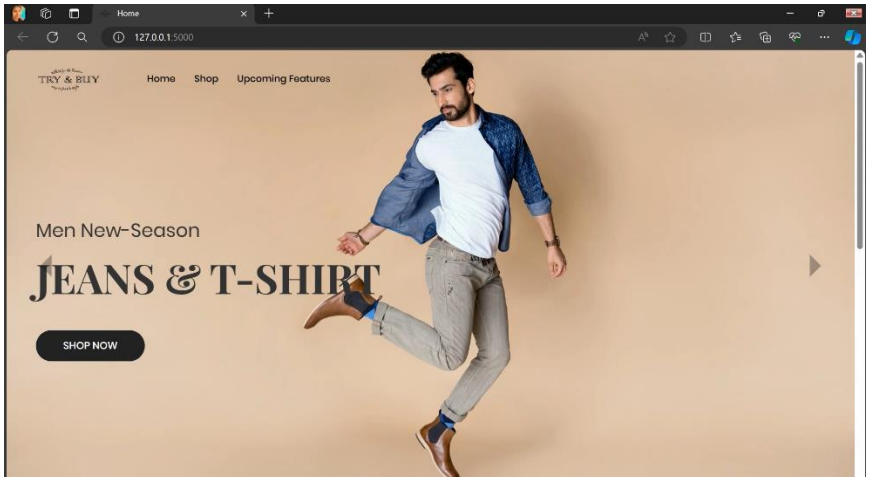
3. Add to Cart: Items can be added to a shopping cart for further review or purchase.

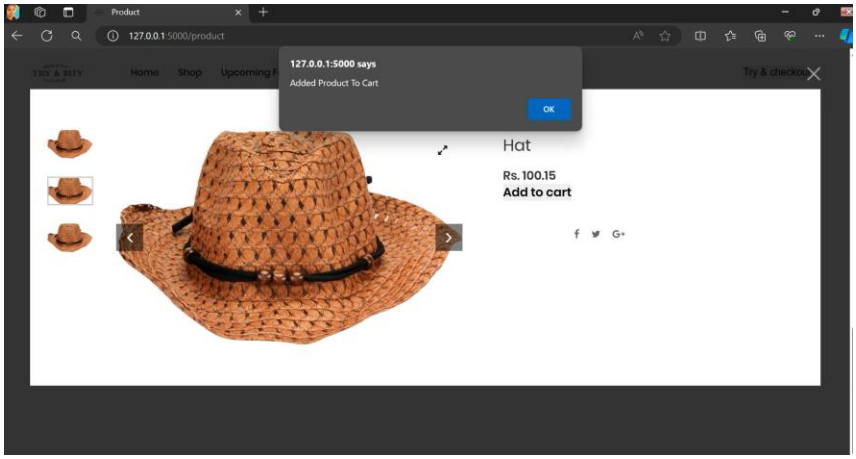
4. Checkout: The user can review their cart and proceed to checkout, completing the purchase process.

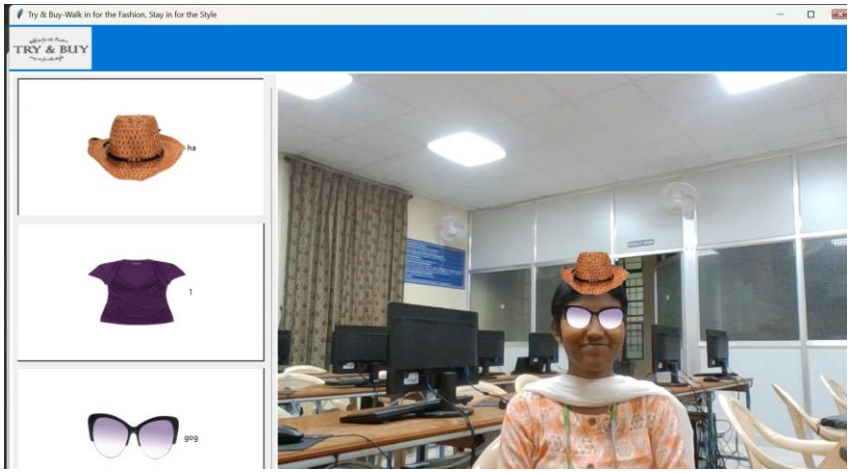
CHALLENGES AND CONSIDERATIONS

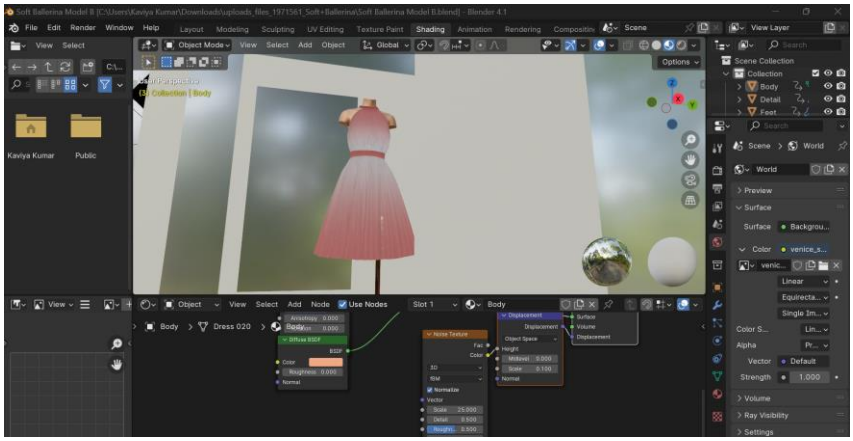
- Scalability: Managing a global shopping cart list is not scalable for multiple users. Implementing session management or a database solution is essential.
- User Experience: Ensuring the virtual try-on experience is smooth and responsive is critical for user satisfaction.

OUTPUT:









STREAM LINK:

https://youtu.be/FVtVAXtFLRA?si=a7_Rh1rRB363cxul